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National Oceanic & Atmospheric Administration
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LIBRARY MAR 28 1951 WEATHER BUREAU

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON NOVEMBER 1, 1877.

2:35 A. M. WASHINGTON mean time.

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

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

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

ALGERIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours	.....	.....	30.17	766.4	71.6	22.0	74	N	.....	.....	1	.....	0	.....	.....	.....	.....	Clear	Michel.
Algiers	.....	.....	30.18	766.5	71.6	22.0	82	N	.....	.....	1	.....	1	.....	.....	0	0	Very fair	Peter.
La Calle	.....	.....	30.20	767.0	69.8	20.7	80	NW	.....	.....	3	.....	6	.....	.....	0	0	Cloudy	Fleury.
Tunis	.....	.....	30.14	765.6	70.3	21.3	78	NW	.....	.....	4	.....	10	.....	.....	.....	.....	Covered	Jacques.
Sfax	.....	.....	30.18	766.6	66.2	19.0	.....	NW	.....	.....	1	.....	1	.....	.....	0.079	2.0	Very fair	Husson.
Saida	.....	.....	30.24	768.2	70.1	24.5	33	NE	.....	.....	2	.....	1	.....	.....	0	0	Very fair	Millot.
Tebessa	.....	.....	30.19	766.7	.....	.....	.....	NNW	.....	.....	3	.....	3	.....	.....	.....	.....	Pretty fair	Bourgeois.
Geriville	.....	.....	30.24	768.1	70.2	21.2	48	S	.....	.....	1	.....	0	.....	.....	0	0	Clear	Lemaillot.
Laghouat	.....	.....	30.23	767.8	73.4	23.0	31	N	.....	.....	2	.....	0	.....	.....	0	0	Clear	Guyot.
Biskra	.....	.....	30.23	767.7	79.5	26.4	26	NW	.....	.....	1	.....	0	.....	.....	0	0	Clear	Kuntz.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

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

AUSTRIAN SERIES.

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

Agram	29.57	751.1	30.12	765.0	58.5	14.7	49	NW	.....	.....	2	.....	2	.....	.....	0	0	.....	Prof. Ivan Stoxir
Cracow, I. R. Observatory	29.24	742.6	30.02	762.4	46.0	7.8	78	W	.....	.....	3	.....	10	.....	.....	0.043	1.1	.....	Dr. Wierzbiski.
Eperies	29.11	739.3	29.99	761.8	49.1	9.5	78	Calm	.....	.....	0	.....	10s	.....	Calm	0	0	.....	Julius Mikolik.
Gratz	28.87	733.2	30.12	765.1	54.9	12.7	39	NW	.....	.....	5	.....	5	.....	.....	0	0	.....	Andreas Rospini.
Hermannstadt	28.60	726.3	30.02	762.6	50.2	10.1	67	NW	.....	.....	1	.....	9	.....	.....	0.283	7.20	.....	Prof. Reissenberger.
Kremsmünster	28.84	732.5	30.21	767.2	46.9	8.3	74	WSW	.....	.....	4	.....	10	.....	.....	0	0	.....	Prof. C. Wagner.
Lemberg	28.93	734.9	29.93	760.2	47.8	8.8	71	NW	.....	.....	2	.....	9	.....	.....	0	0*	.....	Dr. T. Stanecki.
Pola	29.94	760.5	30.05	763.3	62.8	17.1	73	WNW	.....	.....	2	.....	1s	.....	.....	0	0	.....	I.R.HydrographicOffice.
Szathmar	29.62	752.3	30.09	764.2	51.1	10.6	58	NW	.....	.....	3	.....	8	.....	.....	0	0	.....	Johann Tamas, S. J.
Szegedin	29.78	756.4	30.06	763.5	55.4	13.0	77	NE	.....	.....	2	.....	0	.....	.....	0.016	0.40	.....	Karl Stancel.
Trieste	29.96	761.0	30.07	763.6	62.6	17.0	90	SW	.....	.....	1	.....	0	.....	.....	0	0	Clear	P. Busin.
Vienna	29.41	747.0	30.11	764.9	50.5	10.3	58	W	.....	.....	4	.....	10	.....	.....	0	0	.....	I.R. Central Met.Obs'y.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

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

BELGIAN SERIES.

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

Arlon	28.84	732.4	30.57	776.5	44.4	6.9	75	W	.....	.....	1	.....	10	.....	.....	0	0	.....	Prof. M. Pasaau.
Brussels	30.15	765.9	30.30	771.1	52.5	11.4	67	W	.....	.....	3	.....	9	.....	NW	0	0	.....	Royal Observatory.
Furnes	30.94	770.7	30.37	771.3	54.0	12.2	73	WNW	.....	.....	4	.....	4	.....	.....	0	0	.....	M. E. de Cae.
Maeseyck	30.17	766.4	30.30	769.7	52.0	11.1	84	WNW	.....	.....	4	.....	7	.....	.....	0	0	.....	M. Pierrot.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

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

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MOG.1 U58s

BRITISH SERIES.

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

STATIONS.	Barometer. Corrected for instrumental error and reduced to mean of sea-level. Inches.	Barometer. Millimeters.	Temperature of the Air. Inches.	Millimeters.	Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Velocity. Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Amount. Low'r 0—10.	Direction. Upper. From—	Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather	Observer.
Aberdeen	30.09	764.3	30.19	766.8	53.4	11.9	.....	W	15	6.7	.....	.....	2	.....	.....	0.025	0.63	Blue sky.....	W. Boswell.
Ardrossan	30.27	768.8	30.29	769.4	53	11.7	.....	WNW	.....	.....	2	.....	7	.....	.....	.....	.....	D. clouds.....	William McNeil.
Armagh, Observatory	.....	.....	30.38	771.6	50.3	10.2	.....	SW	8	3.6	.....	.....	.....	.....	.....	.....	.....	.....	S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)	.....	.....	30.40	772.1	51.9	11.1	.....	W	22	9.8	.....	.....	9	.....	.....	.....	.....	Overcast	John Hartnup.
Birr Castle, (Parsonstown)	.....	.....	30.41	772.4	52.4	11.3	.....	S	.....	.....	1	.....	10	.....	.....	.....	.....	Overcast.....	J. Dreyer.
Bradford, Yorkshire	29.92	760.0	30.31	769.9	52.1	11.2	.....	NW	.....	.....	4	.....	1	.....	.....	0	0	D. clouds.....	J. McLandsborough.
Bridgetown, (Barbados)	29.87	758.7	29.90	759.4	83.0	28.3	.....	NE	.....	.....	1	.....	2	.....	.....	.....	.....	D. clouds	Pvt. G. W. Roberts, A.
Cambridge, Observatory	.....	.....	30.39	771.9	56.0	13.3	.....	W	.....	.....	2	.....	0	.....	.....	.....	.....	Blue sky.....	H. Todd. [H.O.
Cardington	.....	.....	30.41	772.4	52.0	11.1	.....	W	.....	.....	1	.....	3	.....	.....	.....	.....	Blue sky.....	John McLaren.
Chatham, School M. E	30.26	768.6	30.40	772.1	54.2	12.3	.....	W	.....	.....	2	.....	4	.....	.....	.....	.....	Blue sky.....	Lt.-Col. C.M.Martin,R.E.
Dartmoor	29.00	736.6	30.49	774.4	51.0	10.6	.....	W	.....	.....	2	.....	4	.....	.....	.....	.....	Fine.....	Alexander Watt.
Davos Platz, (Switzerland)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Francis Redford, M. A.
Donaghadee	30.32	770.1	30.35	770.9	50	10.0	.....	WNW	.....	.....	2	.....	3	.....	.....	.....	.....	D. clouds.....	J. Mac Gowan.
Dover	30.38	771.6	30.41	772.4	53	11.7	.....	WNW	.....	.....	3	.....	3	.....	.....	.....	.....	¼ clouded...	J. Costello.
Eccles, (near Manchester)	.....	.....	30.38	771.6	53.7	12.1	.....	NW	6.2	2.8	.....	.....	7	.....	.....	.....	.....	D. clouds.....	Thomas Mackereth.
Falmouth, Observatory	30.25	768.3	30.49	774.4	55.0	12.8	.....	WSW	.....	.....	1	.....	6	.....	.....	.....	.....	Overcast.....	The Staff.
Fort Napier, (Natal)	27.50	698.5	29.70	754.4	71.8	22.1	.....	SE	.....	.....	2	.....	9	.....	.....	.....	.....	Overcast.....	Pvt. G.Salmon, A.H.C.
Free Town, (Sierra Leone)	.....	.....	29.98	761.5	88.0	31.1	.....	W	.....	.....	0	.....	3	.....	.....	.....	.....	Blue sky.....	.....
Galway, Queen's College	.....	.....	.....	.....	53	11.7	.....	SW	.....	.....	2	.....	4	.....	.....	.....	.....	D. clouds.....	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	30.07	763.8	30.13	765.3	71.0	21.7	.....	E	.....	.....	4	.....	5	.....	.....	.....	.....	D. clouds.....	Corpl.C. Aitken, A.H.C.
Glasgow, Observatory	30.06	763.5	30.27	768.8	51.7	10.9	.....	WSW	.....	.....	4	.....	7	.....	.....	.....	.....	D. clouds.....	D. G. Maclean.
Great Yarmouth	30.27	768.8	30.28	769.1	53	11.7	.....	NW	.....	.....	3	.....	4	.....	.....	.....	.....	D. clouds.....	G. T. Watson.
Greenwich, Royal Obs'y	30.25	768.3	30.42	772.7	52.4	11.3	.....	NNW	.....	.....	1	.....	10	.....	.....	.....	.....	Overcast.....	The Staff, for G. B. Airy.
Guernsey	30.25	768.3	30.47	773.9	55	12.8	.....	NW	.....	.....	4	.....	8	.....	.....	.....	.....	D. clouds.....	Dr. S. E. Hoskins, F.R.S.
Helston	.....	.....	30.43	772.9	58	14.4	.....	SW	.....	.....	4	.....	1	.....	.....	0	0	D. clouds.....	M. P. Moyle.
Holyhead	30.35	770.9	30.40	772.1	52	11.1	.....	W	.....	.....	2	.....	3	.....	.....	.....	.....	D. clouds.....	John Tilston.
Jersey	30.22	767.6	30.51	774.9	55.5	13.1	.....	NW	.....	.....	1	.....	10	.....	.....	.....	.....	Overcast.....	J. Fisher.
Kew, Observatory	.....	.....	30.42	772.7	54.9	12.7	.....	W	10	4.5	.....	.....	8k	.....	.....	.....	.....	Threatening	The Staff.
Kingstown	30.41	772.4	30.43	772.9	53	11.7	.....	W	.....	.....	1	.....	10	.....	.....	.....	.....	Overcast.....	George Mitchell.
Leicester, Museum	.....	.....	30.39	771.9	53.8	12.1	.....	NW	.....	.....	2	.....	4	.....	.....	.....	.....	D. clouds.....	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	30.43	772.9	30.50	774.7	71	21.7	.....	W	.....	.....	4	.....	2	.....	.....	.....	.....	D. clouds.....	S'gt. C. Arbeiter. A.H.C.
Nairn	30.07	763.8	30.16	766.1	52	11.1	.....	SW	.....	.....	1	.....	5	.....	.....	.....	.....	½ clouded...	W. D. Penny.
Nassau, (Bahamas)	.....	.....	29.94	760.5	81.2	27.3	.....	NE	.....	.....	1	.....	4	.....	.....	.....	.....	D. clouds.....	C. S. Duncombe.
Nottingham, Observatory	30.20	767.1	30.39	771.9	53.2	11.8	.....	WSW	.....	.....	2	.....	4c;ck	.....	SW	0	0	D. clouds.....	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.87	758.7	30.40	772.1	51.8	11.0	.....	W	.....	.....	3	.....	9	.....	.....	.....	.....	D. clouds.....	Rev. Stephen Whitty
Oxford, Radcliffe Obs'y	.....	.....	30.42	772.7	55	12.8	.....	WNW	.....	.....	1	.....	7	.....	.....	.....	.....	D. clouds.....	F. Lucas
Plymouth	30.40	772.1	30.47	773.9	54.7	12.6	.....	Calm	.....	.....	0	.....	10	.....	.....	.....	.....	Overcast.....	John Merrifield.
Roche's Point	30.38	771.6	30.43	772.9	55	12.8	.....	SW	.....	.....	3	.....	8	.....	.....	.....	.....	Cloudy.....	W. Kennedy.
Saint Ann's Head	30.28	769.1	30.45	773.4	54	12.2	.....	W	.....	.....	1	.....	7	.....	.....	.....	.....	D. clouds.....	John C. Walker.
Sandwick Manse, (Orkneys)	.....	.....	30.06	763.5	49.4	9.7	.....	W	24	10.7	.....	.....	5	.....	.....	.....	.....	Showery.....	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey	.....	.....	29.98	761.0	55.8	13.2	.....	N	.....	.....	1	.....	10	.....	.....	.....	.....	Drizzling.....	Sergt. W. H. Lyne.
Sheffield	30.10	764.5	30.36	771.1	53.4	11.9	.....	WSW	.....	.....	2	.....	3	.....	.....	0	0	Blue sky.....	W. F. Cooper.
Silloth Rectory	30.30	769.6	30.33	770.4	53.3	11.8	78	NW	.....	.....	3	.....	5	.....	.....	0	0	D. clouds.....	Rev. F. Redford, M. A.
Stonyhurst, Observatory	.....	.....	.....	.....	51.1	10.6	.....	W	.....	.....	3	.....	8	.....	.....	.....	.....	Squally	Rev. S. J. Perry.
Stornoway, Lews C., (Hebr.)	.....	.....	30.08	764.0	44	6.7	.....	WSW	.....	.....	4	.....	8	.....	.....	.....	.....	D. clouds.....	John Smith.
Stratfield Turgiss	30.20	767.1	30.42	772.7	52.2	11.2	.....	NW	.....	.....	1	.....	3	.....	.....	.....	.....	D. clouds.....	Rev. C. H. Griffith, F.M.S.
Thurso	.....	.....	30.07	763.8	52	11.1	.....	WNW	.....	.....	3	.....	7	.....	.....	.....	.....	D. clouds.....	John Trotter.
Truro, Royal Institution	.....	.....	30.48	774.2	57	13.9	.....	S	.....	.....	2	.....	8	.....	.....	.....	.....	Gloomy.....	W. Newcombe.
Valencia, Observatory	.....	.....	30.37	771.4	54.2	12.3	.....	S	24	10.7	.....	.....	6	.....	.....	.....	.....	D. clouds.....	The Staff.
SUB-SERIES.																			
Calf of Man, (Isle of Man)	.....	.....	.....	.....	50	10.0	.....	SW	.....	.....	6	.....	0	.....	.....	0	0	.....	Henry Mercer.
Cape Good Hope, Obs'y	29.89	759.2	29.93	760.2	77.5	25.3	46	W	8	3.6	.....	4	4	.....	.....	.....	.....	.....	The Staff, for E. J. Stone.
Hobart Town, (Tasmania)	.....	.....	29.24	742.7	46.0	7.8	93	NW	.....	.....	3	.....	7n	.....	.....	0.09	2.3	.....	Francis Abbott, F.R.A.S
Leith, Restalrig Park	.....	.....	30.28	769.1	53.2	11.8	.....	W	.....	.....	2	2ck	.....	.....	.....	0	0	Fine.....	Andrew Gibb.
Mauritius, Observatory	29.81	757.2	30.00	761.8	77.5	25.3	78	WSW	12.0	5.4	.....	0	9	.....	W	0.12	3.0	Cloudy.....	C. Meldrum.
Melbourne, Observatory	29.75	755.6	29.84	757.9	47.9	8.8	85	WNW	14	6.3	.....	.....	0	.....	.....	0.20	5.1	Clear.....	R. L. J. Ellery.
Monach L't-house, (Hebrides)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Youngclause.
North Unst, (Shetland Is.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Robert Burnet.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m. *Rain-fall during the month.

MARINE SERIES. VESSELS.															Sea or swell. Height scale 0-9	Sea or swell. Direction from—		
S. S. Algeria, N. 49° 9', W. 30° 35'	..	.....	29.93	760.2	55	12.8	.....	W	.....	.....	4	.....	3	WSW	.....	*15	W	D. clouds.....	Capt. W. Watson.
S. S. Batavia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. J. E. Mouland.
Ship Camperdown	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. A. T. Miller.
Brig Catherine, N. 49° 20', W. 22° 35'	.....	.....	29.99	761.7	58	14.4	.....	SSW	.....	.....	4	.....	10	.....	.....	4	Confused	Foggy	Capt. Adam Smith.
Barque Celeste	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. D. F. McKechnie
S. S. Hibernia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. W. R. Cato.
Barque Maroon	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. A. T. Brown.
Ship Mikado	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. C. C. Prehn.
S. S. Seine	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. H. Manning.
Barque Sorata	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. Jas. J. Price.
Schooner Traveller, N. 50° 51', W. 7° 10'	.....	.....	30.47	773.9	55	12.8	.....	Var.	.....	.....	1	.....	9	.....	.....	4	WSW	D. clouds.....	Capt. Alex Simpson.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

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

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

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

STATIONS.	BAROMETER. Corrected for instrum'tal error and temperature. Inches.	BAROMETER. Corrected for instrum'tal error and temperature. Millimeters.	BAROMETER. Reduced to sea-level. Inches.	BAROMETER. Reduced to sea-level. Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Upper. From—	CLOUDS. Direction. Lower. From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	WEATHER.	OBSERVER
San José	26.18	665.0	.....	.....	67.1	19.5	88	SE	.....	.....	1	.....	1c;k	.....	NE	0	0	.....	Federico Maison.
.....																			
.....																			

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

DANISH SERIES.

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

Copenhagen	29.63	752.6	29.68	753.8	47.8	8.8	69	NNW	....	.....	4	.....	10	.....	.....	.....	.....	.....	.....
Fanöe	29.89	759.2	29.91	759.7	50.0	10.0	78	NW	.....	.....	7	.....	5	.....	.....	.....	.....	.....	.....
Godthaab, (Greenland)	29.85	758.2	29.89	759.3	18.1	—7.7	81	ENE	.....	.....	2	.....	0	.....	.....	.....	.....	.....	.....
Stykkisholm, (Iceland)	29.37	746.0	29.41	747.1	33.3	0.7	96	SE	.....	.....	7	.....	8	.....	.....	.....	.....	.....	Snowing.
Thorshavn, (Farõe)	29.85	758.2	29.89	759.1	46.9	8.3	88	W	.....	.....	2	.....	10	.....	.....	.....	.....	.....	Raining.
Vestervig	29.69	754.2	29.86	758.5	47.8	8.8	84	NW	.....	.....	7	.....	0	.....	.....	.....	.....	.....	.....
.....																			
.....																			
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NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

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

Alençon, Normal School	29.99	761.6	30.54	775.8	55.4	13	66	NW	.....	.....	1	.....	10	.....	.....	0	0	Covered	Collignon, Director.
Amiens, Normal School	30.33	770.3	30.44	773.2	55.4	13.0	67	SW	.....	.....	1	.....	5	.....	NW	0	0	Cloudy	Bonvarne, Director.
Avignon, Normal School	30.11	764.9	30.19	766.9	59.5	15.3	47	N	.....	.....	8	.....	0	.....	.....	0	0	Very clear	Mr. Giraud, Director.
Bar-sur-Seine	29.87	758.7	30.45	773.4	53.4	11.9	57	N	.....	.....	1	.....	10	.....	N	0	0	Covered	C. Saillard.
Beaumette Obs'y (Angers)	30.32	770.0	30.48	774.2	55.2	12.9	59	N	2 2	1.0	.....	.....	.....	.....	N	0	0	.....	Albert Cheux.
Beauvais	30.17	766.2	30.46	773.7	54.5	12.5	55	NW	.....	.....	2	.....	8	.....	NW	0	0	Very cloudy	Normal School.
Besançon	29.55	750.5	30.46	773.6	53 2	11.8	64	W	.....	.....	3	.....	8	.....	.....	0	0	Very cloudy	Normal School.
Bourg-en-Bresse	29.58	751.3	30.52	775.2	53.1	11.7	71	N	.....	.....	2	.....	5k	.....	N	0	0	Cloudy	Normal School.
Bourges, Normal School	29.82	757.4	30.41	772 3	52.5	11.4	63	NE	.....	.....	2	.....	5	.....	NE	0	0	Cloudy	A. Wagner, Director.
Brest, Naval Observatory	30.19	766 9	30.41	772.4	56.3	13.5	84	S	.....	.....	1	.....	6k	.....	Calm	0	0	.....	The Staff.
Carcassonne, Normal School	29.94	760.5	30.36	771.1	56.7	13.7	85	W	.....	.....	4	.....	1	.....	W	0	0	Clear	Vateau, Director.
Caen	30.41	772.4	30.49	774.4	55.8	13.2	77	SE	.....	.....	1	.....	5	.....	SE	0	0	Cloudy	Normal School.
Chartres, Normal School	29.86	758.4	30.43	773.0	57.0	13.9	71	W	.....	.....	1	.....	10	.....	.....	0	0	Covered	Lequin, Director.
Châlons-sur-Marne, N. Sch'l	30.10	764.0	30.43	772.8	54.9	12.7	79	Calm	.....	.....	0	.....	5k	.....	.....	0	0	Cloudy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	29.08	738.5	30.45	773.3	54.9	12.7	63	N	.....	.....	2	.....	8	.....	N	0	0	Very cloudy	Alluard, Director.
Commercy, Normal School	29.54	750.3	30.47	773.8	50.5	10.3	62	W	.....	.....	2	.....	5	.....	W	0	0	Cloudy	Dr. Goulet, Director.
Commune de Gréasque*	29.07	738.4	30.21	767.4	64.2	17.9	36	N	.....	.....	1	.....	2	.....	SW	0	0	¾ covered	". Kina.
Grenoble	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Normal School.
La Roche-sur-Yon, N. School	30.27	768.8	30.48	774.3	55.8	13.2	64	NE	.....	.....	1	.....	8	.....	E	0	0	Very cloudy	Mouillot, Director.
Le Mans, Normal School	30.17	766.4	30.49	774.4	54.7	12.6	63	NNW	.....	.....	2	.....	5	.....	NW	0	0	Cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.50	749.3	30.47	773.9	52.7	11.5	61	N	.....	.....	2	.....	10	.....	NE	0	0	Covered	Pin, Director.
Lorient, Naval Observatory	30.40	772.1	30.50	774.6	57.2	14.0	57	NE	.....	.....	2	.....	5	.....	NE	0	0	½ covered	T. Carré, Director.
Mâcon, Normal School	29.70	754.3	30.40	772.1	54.1	12.3	67	S	.....	.....	2	.....	10	.....	.....	0	0	Covered	M. Marchal, Director.
Metz	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. A. Schuster, Dir.
Mirecourt	29.35	745.4	30.41	772.5	51.8	11	66	W	.....	.....	.....	.....	8	.....	E	0	0	Very cloudy	Normal School.
Nismes, Normal School	30.02	762.6	30.23	767.7	61.2	16.2	85	N	.....	.....	8	.....	0	.....	.....	0	0	Clear	Boyer, Director.
Orleans, Normal School	29.97	761.1	30.36	771.1	56.8	13.8	40	W	.....	.....	2	.....	8	.....	NW	0	0	Very cloudy	Bernard, Director.
Paris, Observatory	30.21	767.3	30.45	773.4	55.4	13.0	48	NNW	.....	.....	1	.....	9	.....	.....	0	0	Almost cov'd	National Observatory.
Privas	29.31	744.4	30.39	771.8	56.3	13.5	65	NW	.....	.....	4	.....	2	.....	N	0	0	Slightly cl'dy	Normal School
Rochefort, Naval Obs'y	30.47	773.8	30.50	774 6	57.9	14.4	74	E	.....	.....	2	.....	1	.....	E	0	0	Clear	Lt. Decante, Director.
Rouen, Normal School	30.37	771 5	30.46	773.7	55.4	13.0	62	W	.....	.....	2	.....	8	.....	NNW	0	0	Very cloudy	F. Lucard, Director.
Tarbes, Normal School	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	T. Hugues, Director.
Villefranche	29.73	755.2	30.46	773.7	54.1	12.3	78	WNW	.....	.....	3	.....	5	.....	N	0	0	Cloudy	Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.78	756.4	29.81	757.1	80.6	27	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.47	12.	.....	L'Abbé Marchési.
Marseilles, Observatory	.....	.....	30.13	765.3	65.7	18.7	38	N	.....	.....	2	.....	0	.....	.....	0	0	.....	The Staff.
Mont-Louis	25.13	638.4	30.45	773.4	61.0	16.1	22	NNE	3.7	1.67	.....	.....	5	.....	W	0	0	.....	Mr. Falguère.
Nice	.....	.....	30.10	764.4	63.5	17.5	72	Calm	.....	.....	0	.....	1	.....	W	0	0	Clear	Dr. A. Niepce.
Paris, Montsouris Obs'y	30.16	766.0	30.43	773.0	55.2	12.9	62	NNW	.....	.....	2-3	.....	10	.....	NW	0	0	.....	Marié Davy, Director.
Perpignan	.....	.....	30.29	769.4	63.0	17.7	47	NW	5.6	2.50	.....	.....	1	.....	WNW	0	0	.....	Dr. Fines.
Pic du Midi, (Summit,) H. P.	21.54	547.0	.....	.....	44.6	7.0	.....	N	.....	.....	2	.....	5	.....	.....	.....	.....	Fair	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.81	579.4	.....	.....	50.4	10.2	.....	N	.....	.....	2	.....	5	.....	.....	0	0	Clear	Gen'l de Nansouty.
Saint Maur, (near Paris)	30.28	769.1	30.45	773.3	55.9	13.3	53	NW	.....	.....	2	.....	10	.....	.....	0	0	.....	E. Renou.
Toulouse, Observatory	29.71	754.5	30.44	773.1	56.8	13.8	51	NNW	.....	.....	2	.....	1	.....	.....	0	0	.....	The Staff.
Tours	30.27	768.8	30.47	773.8	56.5	13.6	67	W	.....	.....	1	.....	10	.....	WNW	0	0	.....	C. Marquet.
Versailles, (near Paris)	.....	.....	30.45	773.5	55.4	13.0	52	NW	.....	.....	1	.....	10	.....	.....	0	0	Covered	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.02	762 4	30.04	763.0	51.3	10.7	77	SE	10.3	4.6	.....	10ck	0	W	.....	0	0	Covered	Marc Dechevrens, S. J.
.....																			
.....																			
.....																			

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m.; local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; for Montsouris, the barometer reduced to freezing but not to sea-level. At Mirecourt the cloud direction is apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,363 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

GERMAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Berlin	29.71	754.6	29.88	758.9	50.4	10.2	71	SW	.....	.....	7	.....	8	.....	.....	0.124	3.15	Raining	Prof. Arndt.
Breslau	29.41	747.1	29.94	760.5	46.6	8.1	76	W	.....	.....	3	.....	10	.....	.....	0.052	1.31	Raining	Royal University Obs'y.
Carlsruhe	29.85	758.2	30.29	769.3	53.2	11.8	58	SW	.....	.....	5	.....	9	.....	.....	0	0	.....	Albert Senz.
Cassel	29.57	751.0	30.18	766.5	51.1	10.6	67	NW	.....	.....	8	.....	6	WNW	.....	0.054	1.36	.....	Dr. H. Möhl.
Crefeld	30.09	764.3	30.25	768.4	53.8	12.1	66	N	.....	.....	5	.....	7	.....	.....	0	0	.....	Director Lose.
Emden	30.12	765.0	30.15	765.9	52.2	11.2	96	NW	.....	.....	6	.....	10	.....	.....	0	0	.....	Prof. Prestel.
Frankfort on the Main	29.96	760.9	30.33	770.4	51.1	10.6	.....	NNW	.....	.....	2	.....	7	.....	.....	Inap.	Inap.	.....	Physical Society.
Friedrichshafen	28.92	734.6	30.38	771.7	51.1	10.6	63	WNW	.....	.....	5	.....	8	WNW	.....	0	0	.....	M. Wilhelm.
Hamburg	29.89	759.3	29.97	761.3	49.5	9.7	86	NW	.....	.....	7	.....	8kn	.....	.....	0.114	2.9	Hy. squalls.	Captain F. Hegemann.
Kiel	29.89	759.2	29.91	759.6	50.2	10.1	76	WNW	.....	.....	7	.....	7.	.....	.....	0.172	4.36	....	Prof. G. Karsten.
Königsberg, (Prussia)	29.49	749.0	29.57	751.1	44.6	7.0	85	SW	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Köslin	.....	.....	29.60	751.8	47.5	8.6	.....	SSW	.....	.....	4	.....	4	.....	.....	0.591	15.0	Cloudy	Prof. E. Luther.
Leipsic, Observatory	29.65	753.2	30.08	764.0	49.6	9.8	69	W	.....	.....	4	.....	8	NNW	.....	0.094	2.4	Stormy	H. Müller.
Memel, Naval School	29.41	747.1	29.46	748.3	48.2	9.0	77	WSW	.....	.....	6–7	.....	10n	.....	.....	.....	.....	.....	Prof. Bruhns.
Neufahrwasser	29.59	751.5	29.60	751.9	44.1	6.7	98	WNW	.....	.....	6	.....	9	.....	.....	0.252	6.4	Raining	Reinbrecht von Skalweit.
Posen	29.32	744.7	29.62	752.3	46.8	8.2	91	W	.....	.....	3–4	.....	10	.....	.....	.....	.....	Covered	A. Lothes.
Strassburg Obs., (in Alsace	29.84	758.0	30.40	772.2	53.4	11.9	53	WNW	.....	.....	3	.....	10	WNW	.....	0.057	1.46	.....	Dr. Magener.
Stuttgart	29.35	745.5	30.31	769.8	50.9	10.5	57	W	.....	.....	2	.....	8	NW	.....	Blank	Blank	.....	Dr. Schur.
Treves, (Trier)	29.71	754.6	30.24	768.0	52.7	11.5	59	W	.....	.....	4	.....	7	.....	.....	0	0	.....	Prof. Schoder.
Weissenburg, (Bavaria)	28.72	729.5	30.26	768.6	46.9	8.3	61	W	11.	5.	.....	.....	9k	W	.....	0	0	.....	Prof. Flesch.
Wustrow, Naval School	29.77	756.1	29.81	757.2	47.5	8.6	84	NNW	.....	.....	5	.....	8	.....	.....	.....	.....	Cloudy	Dr. Von Bebber.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	E. F. Schütz.
German Naval Series.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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NOTE.—The elevation of Friedricasnafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4; Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

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

Athens	29.63	752.6	30.02	762.5	64.8	18.2	.....	E	.....	.....	.....	.....	.....	.....	.....	.....	.....	Cloudy	D. J. F. J. Schmidt.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

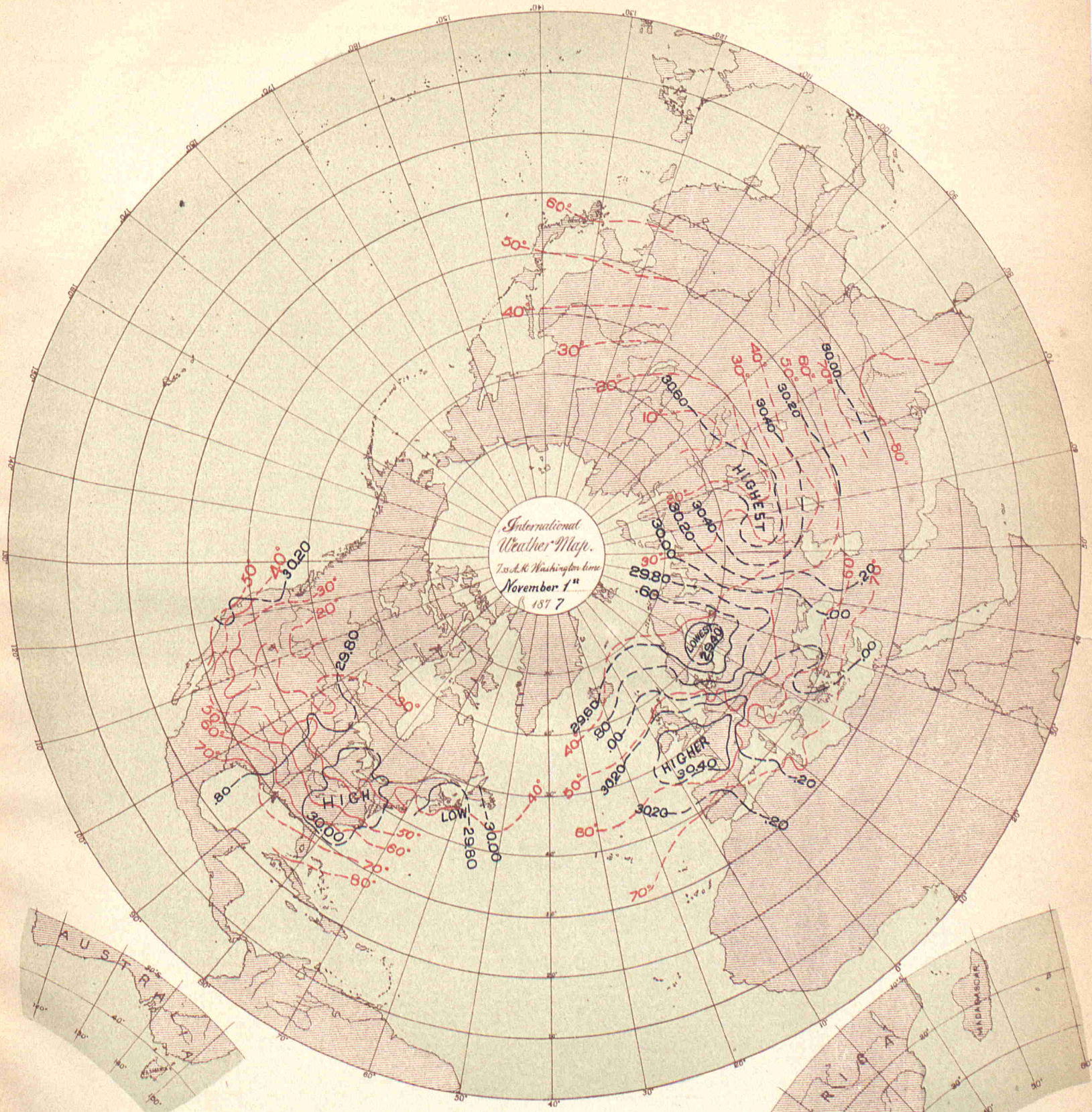
NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and wind-force. They omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

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

Kurrachee	29.92	760.1	29.98	761.4	84.6	29.2	57	WSW	20.0?	8.9?	.....	.....	0	.....	.....	0	0	Blue sky	.....
Deesa	29.50	749.2	29.97	761.2	87.7	30.9	32	Calm	.....	.....	.....	.....	0	.....	.....	0	0	Blue sky	.....
Bombay	29.83	757.7	29.87	758.8	84.5	29.2	69	NW	16.0	7.2	.....	.....	0	.....	.....	0	0	Blue sky	.....
Poona	27.90	708.8	29.90	759.5	80.8	27.1	46	E	.....	.....	.....	.....	4	.....	.....	0	0	D. clouds	.....
Lahore	29.24	742.6	29.99	761.7	77.9	25.5	39	Calm	1.9	0.8	.....	.....	0	.....	.....	0	0	Blue sky	.....
Belgaum	27.36	694.9	29.91	759.6	74.7	23.7	75	Calm	.....	.....	.....	.....	8	.....	E	0	0	D. clouds	.....
Bangalore	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Roorkee	29.02	737.1	29.93	760.1	78.6	25.9	31	NW	1.8	0.8	.....	.....	0	.....	.....	0	0	.....	.....
Agra	29.38	746.4	29.95	760.8	82.7	28.2	35	N	.....	.....	.....	.....	.....	.....	.....	0	0	.....	.....
Trichinopoly	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Nagpur	28.88	733.6	29.93	760.3	77.6	25.3	57	Calm	2.9	1.3	.....	.....	2	.....	.....	0	0	D. clouds	.....
Madras	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Lucknow	29.58	751.3	29.96	760.8	78.3	25.7	39	NW	2.2	1.0	.....	.....	0	.....	.....	0	0	Blue sky	.....
Allahabad	29.62	752.4	29.94	760.3	76.2	24.6	57	Calm	0.8	0.4	.....	.....	0	.....	.....	0	0	Blue sky	.....
Patna	29.76	755.9	29.94	760.6	80.3	26.8	47	E	0.8	0.4	.....	.....	6	E	E	0	0	D. clouds	.....
Hazaribagh	27.93	709.5	29.97	761.1	74.6	23.7	62	NW	3.6	1.6	.....	.....	1	.....	.....	0	0	Blue sky	.....
Cuttack	29.85	758.3	29.94	760.4	78.0	25.6	83	Calm	0.3	0.1	.....	.....	4	.....	.....	0.03	0.8	D. clouds	.....
Calcutta (Alipore)	29.93	760.1	29.95	760.8	78.9	26.1	73	N	6.0	2.7	.....	.....	3	.....	.....	0	0	D. clouds	.....
Goalpara	29.54	750.4	29.94	760.4	75.7	24.3	85	Calm	0.6	0.3	.....	.....	3	.....	.....	0	0	D. clouds	.....
Chittagong	29.87	758.7	29.96	761.0	77.9	25.5	86	Calm	4.3	1.9	.....	.....	10	.....	.....	0	0	Lightning	.....
Sibsagar	29.62	752.5	29.97	761.1	73.0	22.8	90	ENE	1.1	0.5	.....	.....	10	W	W	0	0	D. clouds	.....
Rangoon	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Jubbulpore	28.59	726.2	29.97	761.2	78.0	25.6	45	E	3.9	1.7	.....	.....	0	.....	.....	0	0	Blue sky	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

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



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

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

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

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

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

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

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

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	22.30	566.4	30.20	767.0	40.1	4.5	23	NW	.....	.....	6	.....	0	.....	.....	0	0	.....	Ab. Dom. Mongini.
Stelvio	22.30	566.3	30.24	768.2	32.2	0.1	.....	NW	.....	.....	2	.....	0	.....	.....	0	0	.....	Signora Ernesta Manfredi.
Udine	29.64	752.8	30.06	763.4	62.4	16.9	32	NE	3.1	1.4	.....	.....	0	.....	.....	0	0	.....	Prof. Giovanni Clodig.
Padua	29.95	760.6	30.06	763.5	61.5	16.4	46	NNW	3.1	1.4	.....	.....	0	.....	.....	0	0	.....	Prof. Dott. Lorenzoni.
Vicenza	29.87	758 7	30.07	763.7	62.4	16.9	40	NW	0	0	.....	.....	0	.....	.....	0	0	.....	Conte Alm. Da Schio.
Verona	29.84	757.8	30.05	763.3	64.6	18.1	59	NE	9.4	4.2	.....	.....	3	.....	.....	0	0	.....	Dott. B. Bertoncelli.
Bergamo	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Trionfini Carlo.
Domodossola	29.07	738.4	30.12	765.0	59.7	15.4	50	S	.....	.....	4	.....	0	.....	.....	0	0	.....	Prof. Giuseppe Calza
Milan	29.03	752.6	30.16	766.1	49.6	9.8	.....	WSW	.....	.....	1	.....	3	.....	.....	0.020	0.5	.....	Ab. Gio. Capelli.
Pavia	29.80	756.8	30.15	765.8	46.8	8.2	92	SW	.....	.....	1	.....	10	.....	.....	0	0	.....	Prof. Gio. Cantoni.
Moncalieri	29.22	742.1	30.15	765.7	55.8	13.2	73	ESE	1.3	0.6	.....	.....	1	.....	.....	0	0	.....	Prof. P. F. Denza.
Mondovi	28.23	717.0	30.17	766.2	62.6	17.0	34	W	.....	.....	2	.....	0	.....	.....	0	0	.....	Prof. D. C. Bruno.
Porto Maurizio	29.90	759.5	30.12	765.1	64.2	17.9	72	SW	.....	.....	2	.....	0	.....	.....	0	0	.....	Prof. L. Vassallo.
Genoa	29.91	759.6	30.08	763.9	68.0	20.0	50	SW	1.3	0.6	.....	.....	0	.....	.....	0	0	.....	Prof. G. M. Garibaldi.
Piacenza	29.87	758.8	30.13	765.4	49.3	9.6	89	NW	8.1	3.6	.....	.....	2	.....	.....	0	0	.....	Dott. G Manzi.
Parma	29.81	757.1	30.13	765.3	58.3	14.6	66	NW	.....	.....	2	.....	0	.....	.....	0	0	.....	Prof. P. Pigorini.
Florence	29.82	757.3	30.08	764.0	64.4	18.0	50	N	.....	.....	2	.....	0	.....	.....	0	0	.....	Cav. F Meucci.
Leghorn	30.00	762.0	30.09	764.2	64.0	17.8	60	NW	5.6	2.5	.....	.....	0	.....	.....	0	0	.....	Prof. P. Monte.
Siena	28.87	733.2	30.09	764.2	62.1	16.7	49	SSW	0	0	.....	.....	0	.....	.....	0	0	.....	Prof. L. Toscani.
Urbino	28.55	725.2	30.13	765.3	57.6	14.2	74	ENE	.....	.....	2	.....	3	.....	.....	0	0	.....	Prof. P. Serpieri.
Pesaro	30.05	763.2	30.10	764.5	55.9	13.3	78	N	26.2	11.7	.....	.....	0	.....	.....	0	0	.....	Prof. Luigi Guidi.
Ancona	29.98	761.6	30.10	764.4	58.3	14.6	72	NW	.....	.....	4	.....	1	.....	.....	0	0	.....	Prof. F. DeBosis.
Grosseto	29.98	761.5	30.10	764.4	66.2	19.0	61	WNW	.....	.....	2	.....	3	SE	.....	0	0	.....	Avv. P. Ponticelli.
Rome	29.90	759 5	30.08	764.0	62.8	17.1	65	N	0	0	.....	.....	1	.....	.....	0	0	.....	Prof. P. A Secchi.
Naples, O. U	29.85	758.2	30.06	763.4	67.6	19.8	60	S	.....	.....	2	.....	7	NW	.....	0	0	.....	Prof. L. Palmieri.
Lecce	.....	.....	.....	.....	61.5	16.4	74	NW	9.4	4.2	.....	.....	8	.....	.....	0	0	.....	Prof. C. De Giorgi.
Cosenza	29.20	741.6	30.10	764.6	66.7	19.3	55	NE	0	0	.....	.....	3	ESE	.....	0	0	.....	Prof. F. D. Conti.
Cagliari	29.78	756.5	29.98?	761.4?	66.2	19.0	59	NW	.....	.....	4	.....	10	NW	.....	0	0	.....	Prof. A. Pacinotti.
Riposto, (Sicily)	29.97	761.3	30.02	762.5	66.2	19.0	66	E	.....	.....	2	.....	0	.....	.....	0	0	.....	Prof. F. Cafiero.
Palermo	29.78	756.5	30.04	763.0	63.5	17.5	60	NE	5.6	2.5	.....	.....	1	.....	.....	0	0	.....	Prof. G. Cacciatore.
Caltanissetta	28.07	712.9	30.02	762.6	61.5	16.4	54	WSW	.....	.....	1	.....	0	.....	.....	0	0	.....	Prof. A. Pagani.
Syracuse	29.98	761.4	30.05	763.3	64.4	18.0	64	SW	.....	.....	1	.....	1	.....	.....	0	0	.....	Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.55	750.5	30.10	764.6	64.6	18.1	51	NE	0.7	0.3	.....	.....	8	.....	.....	0	0	.....	Prof. F. Brioschi.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,543.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo, 379.0 m., or 1,243.3 ft.; Mondovi, 559 m., or 1,824.2 ft; Siena, 348.5 m., or 1,143.3 ft.; Urbino, 461 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft.

JAPANESE SERIES.

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

Tokei (Yeddo)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	The Observatory.
Tokei (Yeddo) University	29.89	759.2	29.99	761.7	50	10.0	93	N	1	0.4	.....	.....	.....	.....	.....	1.06	26.9	Clear	Prof. P. V. Veeder.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

MEXICAN SERIES.

By authority of the Secretary of Public Works.

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

Aguascalientes	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	I. N. Marin, M. D.
Córdoba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	C. Peña, M. D.
Cuernavaca	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	L. Castillo, A. E.
Guadalajara	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. L. Perez.
Guanajuato	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. V. Fernandez.
Leon	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. M. Leal.
Mexico	23.06	585.8	30.19	766.9	56.1	13.4	89	Calm	0	0	.....	0	10k	.....	.....	0	0	Covered	Central Observatory.
Orizaba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	N. N.
Orizaba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	I. Orozco, M. D.
Pabellon, (Aguascalts)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. V. de Leon, M. E.
Puebla	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. B. Gonzalez.
Toluca	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. C. Velazquez.
Tlacotalpam	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. F. R. Bayly.
San Luis Potosí	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	G. Barroeta, M. D.
Vera-Cruz	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. J. Rossell.
Zacatecas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. A. Bonilla, M. E.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,290 m., or 7,512.9 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft; San Luis Potosí, 1,853 m. or 5,210.4 ft.; Zacatecas, 2,445 m., or 8,188.6 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

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

Flushing	30.37	771.5	30.37	771.5	53.6	12.0	.....	WNW	.....	.....	4	.....	.....	.....	.....	0	0	.....	
Groningen	30.12	765.1	30.18	766.5	51.3	10.7	.....	NW	.....	.....	4	.....	.....	.....	.....	0.028	0.7	.....	
Helder	30.25	768.3	30.25	768.3	52.7	11.5	.....	WNW	.....	.....	4	.....	.....	.....	.....	0	0	.....	
Hellevoetsluis	.....	.....	30.32	770.1	54.0	12.2	76	NW	.....	.....	5	.....	.....	.....	.....	.....	.....	.....	
Utrecht	30.26	768.5	30.30	769.7	54.1	12.3	66	WNW	.....	.....	4	.....	5	.....	.....	0	0	Cloudy	H. v.d Brink.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

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

NORWEGIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	29.80	756.9	29.85	758.3	45.0	7.2	98	NNW	7.4	3.3	.....	.....	4	.....	.....	0.457	11.6	.....	.....
Brönö	29.56	750.7	29.60	751.7	42.8	6.0	85	S	9	4	.....	.....	9	.....	.....	0	0	.....	.....
Christiania	29.54	750.2	29.68	753.9	48.7	9.3	46	N	7	3	.....	.....	0	.....	.....	0.315	8.0	.....	.....
Tromsö	29.46	748.2	29.50	749.3	37.4	3.0	87	Calm	0	0	.....	.....	9	.....	.....	0.055	1.4	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

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

PORTUGUESE SERIES.

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

Angra, (Azores)	29.90	759.4	30.09	764.2	65.5	18.6	94	SE	1.3	0.6	.....	.....	3	.....	.....	1.693	43.0	.....	Dr. J. A. Sampaio.
Campo Major	29.16	740.7	30.16	766.1	72.9	22.7	40	Calm	0	0	.....	.....	5	.....	.....	0	0	.....	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.00	762.1	30.09	764.3	73.4	23.0	58	SW	4.3	1.9	.....	.....	0	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.81	757.1	30.16	766.6	71.6	22.0	49	NE	4.9	2.2	.....	.....	6	SE	.....	0	0	.....	The Staff.
Ponta Delgada, (Azores)	30.01	762.3	30.08	764.1	65.5	18.6	86	E	0.7	0.3	.....	.....	10	.....	.....	0.921	23.4	Raining	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

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

Naval Series. Vessels.	Sea or swell. Height scale 0–9	Sea or swell. Direction from—	
S. S. India.			A. D. Pedroso, Com'd't. Lt. S. A. P. de Mirando.
.....	.....	.....	.....
.....	.....	.....	.....

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

RUSSIAN SERIES.

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

Warsaw	29.38	746.2	29.81	757.1	45.0	7.2	87	WSW	22	10	.....	.....	9	.....	.....	.....	.....	.....	Astronomical Obs.
Wilna	29.21	742.0	29.63	752.6	47.5	8.6	79	SSW	7	3	.....	.....	5	.....	.....	.....	.....	.....	Astronomical Obs.
Dorpat	29.15	740.3	29.39	746.4	46.8	8.2	78	S	13	6	.....	.....	7	.....	.....	.....	.....	.....	Prof. Dr. Weihrauch.
St. Petersburg	29.50	749.4	29.52	749.8	40.5	4.7	90	SE	22	10	.....	.....	10	.....	.....	.....	.....	Raining	Central Physical Obs.
Kuopio	29.15	740.4	29.47	748.6	39.6	4.2	100	SE	18	8	.....	.....	10	.....	.....	.....	.....	Raining	Ch. Forsten.
Kieff	29.18	741.1	29.82	757.3	46.8	8.2	78	NW	9	4	.....	.....	10	.....	.....	.....	.....	.....	Physical Cabinet.
Nikolaiev	29.85	758.3	29.93	760.1	52.5	11.4	79	W	4	2	.....	.....	9	.....	.....	.....	.....	.....	Kurdakof.
Kertch	29 91	759.7	29.93	760.2	54.3	12.4	99	ENE	7	3	.....	.....	10	.....	.....	.....	.....	Raining	Lagorio.
Moscow	29.37	746.0	29.93	760.2	42.1	5.6	69	S	11	5	.....	.....	8	.....	.....	.....	.....	.....	Meteorological Obs.
Lugan	29.73	755.1	29.93	760.3	53.2	11.8	78	SE	13	6	.....	.....	9	.....	.....	Blank	Blank	.....	Meteorological Obs.
Archangel	29.83	757.6	29.85	758.1	36.0	2.2	93	SE	22	10	.....	.....	10	.....	.....	.....	.....	.....	Ogorodnikof.
Tiflis	28.80	731.4	30.22	767.6	55.2	12.9	82	SE	4	2	.....	.....	10	.....	.....	.....	.....	.....	Physical Observatory.
Astrakhan	30.41	772.4	30.33	770.3	49.1	9.5	72	E	18	8	.....	.....	2	.....	.....	.....	.....	.....	Sebastianof.
Kasan	30.14	765.5	30.42	772.6	36.7	2.6	63	SSE	2	1	.....	.....	9	.....	.....	.....	.....	.....	Physical Cabinet.
Orenburg	30.34	770.6	30.75	781.0	23.2	— 4.9	64	NE	13	6	.....	.....	0	.....	.....	.....	.....	.....	Tschernischef.
Ekaterinburg	29.44	747.7	30.43	772.8	35.1	1.7	50	WSW	13	6	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Nukuss	30.02	762.5	30.26	768.6	39.9	4.4	50	NE	11	5	.....	.....	0	.....	.....	.....	.....	.....	.....
Kasaly	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Bobrof.
Tashkend	28.49	723.7	30.23	767.7	49.6	9.8	89	Calm	0	0	.....	.....	10	.....	.....	.....	.....	Raining	Michelson.
Barnaul	30.61	762.2	30.58	776.8	11.8	—11.2	79	NW	4	2	.....	.....	0	.....	.....	.....	.....	.....	Meteorological Obs.
Yeniseisk	30.28	769.2	30.64	778.3	9.5	—12.5	85	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Marks.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Usolzef.
Oorga	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Mossin.
Peking, (China)	29.83	757.7	29.97	761.3	64.7	12.6	51	N	18	8	.....	.....	8	.....	.....	.....	.....	.....	Physical Observatory.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Nikolaievsk, on the Amoor	.....	.....	.....	.....	31.6	— 0.2	85	Calm	0	0	.....	.....	5n	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Ekaterinburg, 306. 4? m., or 1,005.2? ft.; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.: Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft.

SPANISH SERIES.

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

Barcelona, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Ar.tonio Rave, Director.
Bilbao, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Manuel de Na veran.
Burgos, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Domingo Martin y Perez.
Madrid, Royal Observatory	28.00	711.3	30.17	766.2	74.8	23.8	20	NE	10.4	4.66	.....	0	5	.....	.....	0	0	Cloudy	The Staff.
Murcia, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Olayo Diaz, Director.
Santiago, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.88	758.9	29.94	760.6	78.3	25.7	92	Calm	0	0	.....	0	1k	.....	.....	0	0	Clear	Benito Vines, S. J.
San Fernando, Naval Obs'y.	30.04	763.0	30.14	765.5	79.9	26.6	41	E	19.9	8.9	.....	1	2	E	E	0	0	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.	.....	.....	29.87	758.6	80.2	26.8	88	SE	0	0	.....	4cs	3ks	E	SE	0	0	D. clouds	Leonardo de Tejeda, Chief of Engineers.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. tead of 8:19 a m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.52	749.9	29.56	750.9	37.2	2.9	.....	E	.....	.....	2	.....	5	.....	.....	0.433	11.0	.....	
Umea	29.45	747.9	29.50	749.2	40.3	4.6	97	NNE	.....	.....	2	.....	10	.....	.....	0	0	.....	
Hernosand	29.44	747.7	29.49	749.0	40.6	4.8	90	N	.....	.....	4	.....	9	.....	.....	0.421	10.7	.....	
Stockholm	29.10	739.2	29.28	743.7	42.8	6.0	97	NNW	.....	.....	4	.....	10	.....	.....	0.331	8.4	Raining	
Wisby	29.25	742.9	29.31	744.4	42.8	6.0	100	NW	.....	.....	8	.....	10	.....	.....	0.429	10.9	Raining	
Sub-Series.																			
Upsala	29.27	743.5	29.35	745.4	41.7	5.4	99	NNW	22.8	10.2	.....	.....	10	.....	.....	0.075	1.90	Raining	Dr. Hildebrandsson.

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

SWISS SERIES.

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

Geneva	28.97	735.8	30.40	772.2	52.0	11.1	47	NE	.....	.....	3	.....	0	.....	.....	0	0	Clear	The Observatory.
Zurich	28.74	730.0	30.39	771.9	50.5	10.3	59	W	.....	.....	1	.....	5	.....	.....	0	0	Cloudy	The Observatory.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—For Geneva the corresponding departures from the normal values are: Barometer, +9.7 mm; Thermometer, +1.6 cent.; Relative Humidity, —28 per cent.

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

TURKISH SERIES.

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

Constantinople	.....	.....	30.01	762.3	54.5	12.5	88	N	6	2.5	.....	.....	10	.....	NNW	0.197	5.0	.....	The Observatory.
Fao, (Persian Gulf)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	B. Stefanidès.
Salonica	.....	.....	29.97	761.3	74.8	23.8	.....	SE	.....	.....	1	.....	0	.....	.....	.....	.....	.....	A. Bertrand.
Valona	.....	.....	30.06	763.5	62.2	16.8	.....	W	.....	.....	1	.....	2	.....	.....	0	0	Slightly cl'dy	Imperial Observatory.
Varna	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.86	758.4	29.98	761.5	77.9	25.5	51	SW	.....	.....	1	.....	2c	.....	.....	0	0	D. clouds	Prof. C. V. A. Van Dyck

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

CANADIAN SERIES.

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

Bathurst, N. B	29.76	755.9	29.83	757.7	32.8	0.4	97	Calm	0	0	.....	8	.....	.....	.....	0	0	.....	Hon. J. Ferguson.
Brockville, Ontario	.....	.....	30.00	762.0	34	1.1	.....	Calm	0	0	.....	.....	8s	.....	W	0.32	8.1	Cloudy	W. R. Bigg.
*Chatham, N. B	.....	.....	29.81	757.2	32	0.0	94	Calm	0	0	.....	.....	10s	.....	Calm	0.07	1.8	Cloudy	G. A. Blair.
Charlottetown, P. E. Island	.....	.....	29.74	755.4	37	2.8	92	NE	6	2.7	.....	.....	10n	.....	Calm	0.410	10.41	Light rain	H. J. Cundall, C. E.
Cornwall, Ontario	29.74	755.4	29.94	760.5	38.5	0.8	97	SW	.....	.....	1	1cs	0	NW	.....	0	0	Fair	James Smith, M. A.
Dalhousie, N. B	29.80	756.9	29.84	757.9	34	1.1	92	Calm	.....	.....	0	.....	.....	.....	.....	0	0	Threatening	H. A. Johnson.
Esquimault, B. C	30.04	763.0	30.08	764.0	37.1	2.8	100	NE	.....	.....	.....	0	0	.....	.....	0	0	Clear	W. H. Bevis.
*Father Point, Quebec	.....	.....	29.80	756.9	37	2.8	90	E	1	0.4	.....	.....	10n	.....	S	0.07	1.8	Threatening	J. McWilliams.
Fredericton, N. B	29.80	756.9	29.87	758.7	35.0	1.7	90	Calm	1	0.4	.....	0?	0?	.....	.....	0.090	2.29	Cloudy ?	Prof. Harrison.
*Fort Garry, Manitoba	.....	.....	29.82	757.4	31	— 0.6	98	E	11	4.9	.....	.....	10n	.....	Calm	0.060	1.52	Cloudy	James Stewart.
Goderich, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	H. J. Strang, M. A
Granton, Ontario	28.91	734.3	30.05	763.3	35	1.7	80	SW	.....	.....	1	1cs	0	NW	.....	0	0	Clear	James Grant.
*Halifax, N. S	29.51	749.5	29.64	752.8	40	4.4	92	N	14	6.3	.....	.....	10n	.....	N	0.690	17.53	Light rain	F. Allison, M. A.
Hamilton, Ontario	29.70	754.4	30.08	764.0	39.9	4.4	80	W	.....	.....	2	10ck	.....	SW	.....	0	0	Cloudy	Geo. Dickson, M. A
Heart's Content, N. F	30.02	762.5	30.05	763.3	30	3.9	82	SE	.....	.....	2	.....	10	.....	.....	0	0	Overcast	E. Weedon.
*Kingston, Ontario	29.67	753.6	30.02	762.5	34	1.1	90	Calm	0	0	.....	10k	0	W	.....	0.49	12.4	Cloudy	S. Woods, M. A.
Little Glace Bay, N. S	29.55	750.6	29.60	751.8	41.5	5.3	100	SE	14	6.3	.....	.....	10n	.....	.....	0.63	16.0	Raining	C. H. Rigby.
*Montreal, Quebec	29.71	754.6	29.92	760.0	36	2.2	90	W	12	5.4	.....	0	2ks	.....	SW	0.17	4.3	Clear	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.30	744.2	30.02	762.5	35	1.7	90	NW	8	1.3	.....	5k	2ks	W	W	0.14	3.6	Fair	Rev. R. Mosley.
Peterboro, Ontario	29.21	741.9	29.90	761.7	32.2	0.1	95	SW	.....	.....	1	.....	10ks	.....	.....	Blank	Blank	Frost	J. F. Jeffers, B. A.
Port Dover, Ontario	29.34	745.2	30.05	763.3	38	0.6	80	NW	4	1.8	.....	0	0	.....	.....	0.02	0.5	Clear	H. Morgan.
Port Hastings, N. S	29.52	749 8	29.57	751.1	42.1	5.6	.....	E	20	8.9	.....	.....	.....	.....	.....	0.10	2.5	Raining	Peter Grant.
Port Stanley, Ontario	29.39	746.5	30.06	763.5	32	0.0	90	NW	5	2.2	.....	2k	0	Calm	.....	0.02	0.5	Clear	M. Payne.
*Quebec, Quebec	29.52	749.8	29.85	758.2	38	3.3	91	SW	7	3.1	.....	.....	10n	.....	SW	0.25	6.3	Cloudy	Capt. Ashe, R. N
*Rockliffe, Ontario	29.51	749.5	29.99	761.7	33	0.6	95	W	5	2.2	.....	.....	8s	.....	NW	Inap.	Inap.	Cloudy	W. H. McIntyre.
St. John, N. B	29.65	753.1	29.82	757.4	37	2.8	90	NW	9	4.0	.....	.....	10n	.....	.....	0.09	2.3	Cloudy	G. Murdock, C. E.
*Saugeen, Ontario	29.33	745.0	30.04	763.0	41	5.0	76	NW	4	1.8	.....	.....	8n	.....	.....	Inap.	Inap.	Cloudy	K. Stewart.
Stayner, Ontario	.....	.....	30.01	762.2	38	3.3	82	W	4	1.8	.....	5k	5n	NW	NW	0.06	1.5	Cloudy	R. J. Cole.
Stratford, Ontario	28.72	729.5	30.04	763.0	35.0	1.7	80	SW	2.5	1.1	.....	.....	10s	.....	.....	0	0	Cloudy	C. J. MacGregor, M. A.
*Sydney, C. B	29.61	752 1	29.64	752.8	40	4.4	100	NE	10	4.5	.....	.....	10n	.....	.....	0.37	9.4	Light rain	T. C. Hill.
*Toronto, Ontario	29.64	752.8	30.04	763.0	38	3.3	81	W	6	2.7	.....	.....	10ks	.....	W	Inap.	Inap.	Cloudy	Magnetic Observatory.
Windsor, N S	29.64	752.8	29.73	755.1	38.0	3.3	90	N	14	6.3	.....	.....	10n	.....	.....	0.85	21.6	Raining	Prof. John E. Oram.
Woodstock, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Montgomery.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	41.0	5.0	91	S	.....	.....	.....	Fog	Fog	.....	.....	0	0	Foggy	John Delany.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

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

UNITED STATES SERIES.

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

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.74	755.4	29.98	761.5	38	3.3	80	Calm	0	0		0	0			0.50	12.7	Clear.	
Alpena, Michigan	29.34	745.2	30.01	762.2	35	1.7	90	W	4	1.8		0	5s		W	0.04	1.0	Fair.	
Atlantic City, New Jersey	30.06	763.5	30.08	764.0	43	6.1	83	NW	5	2.2		0	0			0.23	5.8	Clear.	
Augusta, Georgia	29.85	758.2	30.04	763.0	59	15.0	85	Calm	0	0		Haze	Sm'e	Calm	Calm	0	0	Clear.	
Baltimore, Maryland	30.05	763.3	30.10	764.5	44	6.7	67	NW	1	0.4		Haze	Sm'e	Calm	Calm	0.04	1.0	Fair	
Barnegat, New Jersey	30.03	762.7	30.05	763.3	45	7.2	76	NW	10	4.5		0	0			0.12	3.0	Clear.	
Bismarck, Dakota	27.97	710.4	29.63	753.4	34	1.1	90	NW	12	5.4			10s		W	Inap.	Inap.	Cloudy	
Boise City, Idaho	27.29	693.2	30.02	762.5	28	— 2.2	77	Calm	0	0		0	0			0	0	Clear	
Boston, Massachusetts	29.79	756.7	29.95	760.7	39	3.9	82	W	8	3.6		0	Haze			0.66	16.8	Clear	
Brackettville, Texas	28.56	725.4	29.56	750.8	66	18.9	78	SE	2	0.9			10s		Calm	0.25	6.3	Cloudy	
Breckenridge, Minnesota	28.66	728.0	29.68	753.9	29	— 1.7	89	W	8	3.6			10s		Calm	0	0	Cloudy	
Brownsville, Texas	29.71	754.6	29.77	756 1	78	25.6	86	SE	12	5.4		5c	0	Calm		0.05	1.3	Fair	
Buffalo, New York	29.30	742.2	30.01	762.2	42.0	5.6	74	W	6	2.7		5c	2s	W	W	0.40	10.2	Fair	
Burlington, Vermont	29.68	753.9	29.94	760.5	43	6.1	75	W	5	2.2		2c	8s	Calm	NW	0.75	19.1	Cloudy	
Cairo, Illinois	29.55	750.6	29.94	760.5	47	8.3	55	NE	10	4.5			10s		Calm	0	0	Cloudy	
Camp Grant, Arizona	25.19	639.8	29.99	761.7	59	15.0	23	E			1	0	0			0	0	Clear	
Camp Verde, Arizona	26.81	681.0	30.30	769.6	30	— 1.1	68	NW				0	0			0	0	Clear	
Campo, California																			
Cape Hatteras, N. Carolina	29.98	761.5	29.99	761.7	61	16.1	55	NE	16	7.2		0	0			0.46	11.7	Clear	
Cape Henry, Virginia	30.01	762.2	30.03	762.7	56	13.3	81	NE	18	8.0		0	0			Inap	Inap.	Clear	
Cape Lookout, N. Carolina	30.04	763.0	30.05	763.3	63	17.2	57	NE	24	10.7		2c	0	NW		0.12	3.0	Fair	
Cape May, New Jersey	30.04	763.0	30.07	763.8	48	8.9	64	N	7	3.1		0	0			0.30	7.6	Clear.	
Charleston, South Carolina	29.96	761.0	30.03	762.7	64	17.8	89	N	10	4.5		0	2s		E	0.06	1.5	Fair	
Cheyenne, Wyoming	23.95	608.3	29.89	759.2	26	— 3.3	88	NW	12	5.4			10n		Calm	0.02	0.5	Light snow.	
Chicago, Illinois	29.26	743.2	29.97	761.2	36	2.2	80	NW	3	1.3		2k	Fog	NW	Calm	0	0	Fair	
Cincinnati, Ohio	29.36	745.7	30.02	762.5	41	5.0	74	E	1	0.4			Fog		E	Inap	Inap.	Dense fog	
Cleveland, Ohio	29.35	745.5	30.10	764.5	37	2.8	71	S	4	1.8		5k	2s	Calm	Calm	0	0	Fair	
Concho, Texas	27.82	706.6	29.63	752.6	58	14.4	93	NW	4	1.8		8cs	0	NW		0.60	15.2	Cloudy	
Corsicana, Texas	29.21	741.9	29.66	753.4	64	17.8	100	S	12	5.4			10s		Calm	0.75	19.1	Cloudy	
Davenport, Iowa	29.29	744.0	29.94	760.5	39	3.9	63	Calm	0	0			10s		Calm	0	0	Cloudy	
Denison, Texas	28.90	734.0	29.67	753.6	58	14.4	100	SE	6	2.7			10n		Calm	1.85	47.0	Heavy rain.	
Denver, Colorado	24 75	628.6	29.97	761.2	32	0.0	69	Calm	0	0			10s		Calm	0.10	2.5	Cloudy	
Detroit, Michigan	29.35	745.5	30.05	763.3	33	0.6	79	NW	3	1.3		5cs	Sm'e	SW	Calm	0	0	Fair	
Dodge City, Kansas	27.18	690.4	29.48	748.8	38	3.3	80	NW	18	8.0		0	5s		NW	0.01	0.3	Fair	
Dubuque, Iowa	29.19	741.4	29.90	759.4	36	2.2	80	SW	1	0.4			10s		Calm	0	0	Cloudy	
Duluth, Minnesota	28.99	736.3	29.67	753.6	39	3.9	63	S	3	1.3			10ks		SW	0	0	Cloudy	
Eagle Pass, Texas	28.92	734.6	29.64	752.8	64	17.8	100	SE	4	1.8			10s		Calm	0.15	3.8	Cloudy	
Eastport, Maine	29.74	755.4	29.81	757.2	39	3.9	81	NW	9	4.0		8k	2s	NW	NW	0.25	6.3	Cloudy	
Erie, Pennsylvania	29.30	744.2	30.02	762.5	44	6.7	75	Calm	0	0		10k	Sm'e	W		0.22	5.6	Cloudy	
Escanaba, Michigan	29.26	743.2	29.93	760.2	34	1.1	71	Calm	0	0		0	8s		Calm	Inap.	Inap.	Cloudy	
Florence, Arizona	28.51	724.1	30.11	764.8	37	2.8	54	Calm				0	0			0	0	Clear	
Fort Bayard, New Mexico	23.95	608.3	29.95	760.7	27	— 2.8	55	NE	4	1.8		0	0			0	0	Clear	
Fort Craig, New Mexico	25.41	645.4			38	3.3	45	W	20	8.9		0	0			0	0	Clear	
Fort Gibson, Indian Ter	29.16	740.7	29.68	753.9	54	12.2	93	N	2	0.9			10n		Calm	0.70	17.8	Light rain	
Fort Griffin, Texas	28.48	723.4	29.75	755.6	52	11.1	93	Calm	0	0			10n		Calm	3.85	97.8	Light rain	
Fort St. Michael, Alaska																			
Fort Sill, Indian Territory	28.53	724.6	29 62	752.3	49	9.4	100	NW	8	3.6			10n		N	0.96	24.4	Light rain	
Galveston, Texas	29.76	755.9	29.80	756.9	73	22.8	98	S	8	3.6		0	8ks		S	0.04	1.0	Cloudy	
Grand Haven, Michigan	29.33	745.0	30.00	762.0	36	2.2	85	SE	6	2.7			10s		Calm	0	0	Cloudy	
Indianapolis, Indiana	29.21	741.9	30.01	762.2	37	2.8	80	NE	1	0.4			10s; fg		Calm	0	0	Cloudy	
Indianola, Texas	29.75	755.6	29.78	754.6	75	23.9	100	S	12	5.4		10k	0	S		0.27	6.9	Cloudy	
Jacksboro, Texas																			
Jacksonville, Florida	29.95	760.7	29.97	761.2	64	17.8	83	W	4	1.8		0	0			0.11	2.8	Clear	
Keokuk, Iowa	29.26	743.2	29.88	758.9	39	3.9	80	E	8	3.6			10n		Calm	0.03	0.8	Light rain	
Key West, Florida	29.91	759.7	29.95	760.7	80.0	26.7	78	NE	7	3.1		5k	0	NE		0.01	0.3	Fair	
Kittyhawk, North Carolina	30.06	763.5	30.08	764.0	59	15.0	59	NE	18	8.0		0	0			0.10	2.5	Clear	
Knoxville, Tennessee	29.02	737.1	30.04	763.0	46	7.8	85	Calm	0	0		0	Sm'e			Inap.	Inap.	Smoky	
La Crosse, Wisconsin	29.09	738.9	29.84	757.9	39	3.9	64	S	6	2.7			10s		S	0	0	Cloudy	
La Mesilla, New Mexico	26.02	660.9	30.17	766.3	38	3.3	54	SW	7	3.1		2c	0	Calm		0	0	Fair	
Laredo, Texas					66	18.9	100	Calm	0	0			Fog		Calm	0.13	3.3	Foggy	
Leavenworth, Kansas	28.90	734.0	29.74	755.4	42	5.6	83	SE	6	2.7			10n		Calm	0.35	8.9	Light rain	
Los Angeles, California	29.79	756.7	30.14	765.5	48	8.9	71	NE	7	3.1		0	0			0	0	Clear	
Louisville, Kentucky	29.42	747.3	29.99	761.7	41	5.0	82	NE	6	2.7		5ck	5s	W	Calm	0	0	Cloudy	
Lynchburg, Virginia	29.41	747.0	30.10	764.5	49	9.4	64	Calm	0	0		0	Sm'e		NE	0	0	Smoky	
Maricopa Wells, Arizona					31	— 0.6	69	E				0	0			0	0	Clear	
Marquette, Michigan	29.19	741.4	29.90	759.4	36	2.2	70	S	4	1.8			10s		Calm	0	0	Cloudy	
Mason, Texas	28.07	713.0	29.74	755.4	68	20.0	90	SW	16	7.2			10s		SW	0.09	2.3	Cloudy	
Memphis, Tennessee	29.60	751.8	29.91	759.7	53	11.7	68	NE	4	1.8			10n		Calm	Inap.	Inap.	Light rain	
Milwaukee, Wisconsin	29.29	744.0	30.00	762.0	34	1.1	79	SW	6	2.7		5cs	Sm'e			0	0	Fair	
Mobile, Alabama	29.94	760.5	29.99	761.7	63.5	17.5	86	N	4	1.8			10s		S	0	0	Cloudy	
Montgomery, Alabama	29.75	755.6	29.98	761.5	55	12.8	93	Calm	0	0		10cs	Fog	W	Calm	0	0	Cloudy	
Morgantown, West Virginia	29.01	736.8	30.09	764.3	40	4.4	72	Calm	0	0			Fog			0	0	Foggy	
Mt. Washington, N. H.	23.50	596.9	29.86	758.4	20	— 6.7	100	NW	57	25.5			Fog		NW	0.65	16.5	Foggy	
Nashville, Tennessee	29.44	747.8	29.98	761.5	48	8.9	70	E	4	1.8		5cs	5s	N	Calm	0	0	Cloudy	
New Haven, Connecticut	29.87	758.7	29.99	761.7	41	5.0	83	N	8	3.6		Haze	Fog		Calm	0.40	10.2	Clear	
New London, Connecticut	29.96	761.0	30.00	762.0	44	6.7	76	NW	8	3.6		0	0			0.26	6.6	Clear.	
New Orleans, Louisiana	29.87	758.7	29.93	760.2	66	18.9	89	E	5	2.2		10k	0	S		Inap.	Inap.	Cloudy	
Newport, Rhode Island	29.92	760.0	29.97	761.2	45	7.2	76	NW	14	6.3		0	0			0.58	14.7	Clear.	
New York, New York	29.88	758.9	30.06	763.5	44	6.7	67	NW	8	3.6		0	Fog			0.34	8.6	Clear.	
Norfolk, Virginia	30.05	763.3	30.11	764.8	51	10.6	78	NE	3	1.3		0	Haze			0.02	0.5	Clear.	
North Platte, Nebraska	26.95	684.5	29.55	750.6	35	1.7	90	NW	20	8.9			10n		NW	0.08	2.0	Light rain	
Olympia, Washington Ter.	30.08	764.0	30.12	765.0	31	— 0.6	89	S	3	1.3			Fog		Calm	0	0	Foggy	
Omaha, Nebraska	28.67	728.2	29.75	755.6	43	6.1	91	S	5	2.2			10n		S	0.09	2.3	Light rain	
Oswego, New York	29.68	753.9	30.00	762.0	45	7.2	71	Calm	0	0		5k	0	W		0.14	3.6	Fair	
Pembina, Dakota	28.92	734.6	29.76	755.9	33.5	0.8	90	N	8	3.6			10s		Calm	0.01	0.3	Cloudy	
Philadelphia, Pennsylvania	30.04	763.0	30.10	764.5	45	7.2	68	NW	8	3.6			Fog		Calm	0.04	1.0	Clear	
Phœnix, Arizona					43	6.1	43	Calm				0	0			0	0	Clear	
Pike's Peak, Colorado	17.51	444.7	29.72	754.9	0	—17.8	70	NE	24	10.7		5k	0	NE		0.10	2.5	Fair	
Pioche, Nevada	24.11	612.4	29.88	758.9	24	— 4.4	80	SW	1	0.4		0	0			Inap.	Inap.	Clear	
Pittsburg, Pennsylvania	29.22	742.2	30.06	763.5	35	1.7	90	NW	3	1.3		0	Fog		Calm	Inap.	Inap.	Foggy	
Port Huron, Michigan	29.31	745.2	30.02	762.5	34	1.1	80	W	6	2.7		0	2ks		Calm	Inap.	Inap.	Clear	
Portland, Maine	29.84	757.9	29.90	759.4	41	5.0	82	W	2	0.9		1k	Fog	Calm		0.41	10.4	Clear.	
Portland, Oregon	30.11	764.8	30.21	767.3	34	1.1	100	Calm	0	0			Fog		Calm	0	0	Foggy	
Prescott, Arizona	24.84	630.9	30.20	767.1	25	— 3.9	60	Calm				0	0			0	0	Clear	
Punta Rassa, Florida	29.96	761.0	29.98	761.5	74	23.3	85	NW	8	3.6		0	0			0	0	Clear	
Red Bluff, California	29.81	757.2	30.19	766.8	40	4.4	82	NW	5	2.2		0	0			0	0	Clear	
Rochester, New York	29.38	746.2	30.01	762.2	38	3.3	80	W	5	2.2		8k	0	W		0.13	3.3	Fair	
Roseburg, Oregon	29.61	752.1	30.21	767.3	32	0.0	100	Calm	0	0		0	Fog		Calm	0	0	Foggy	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	BAROMETER. Corrected for instrum'tal error and temperature. Inches.	BAROMETER. Corrected for instrum'tal error and temperature. Millimeters.	BAROMETER. Reduced to sea-level. Inches.	BAROMETER. Reduced to sea-level. Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Upper. From—	CLOUDS. Direction. Lower. From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	WEATHER.	OBSERVER.
Sacramento, California	30.10	764.5	30.18	766.6	41.5	5.3	79	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.	
St. Louis, Missouri	29.35	745.5	29.93	760.2	44	6.7	68	E	12	5.4	.....	.....	10s	.....	Calm	0.01	0.3	Cloudy	
St. Marks, Florida	29.98	761.5	29.99	761.7	61	16.1	94	N	4	1.8	.....	0	0	.....	.....	0.43	10.9	Clear	
St. Paul, Minnesota	28.85	732.8	29.67	753.6	42	5.6	58	S	9	4.0	.....	.....	10s	.....	SE	0	0	Cloudy	
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salt Lake City, Utah	25.75	654.0	30.08	764.0	35	1.7	80	Calm	0	0	.....	.....	10s	.....	Calm	Inap.	Inap.	Cloudy	
San Antonio, Texas	29.03	737.3	29.59	751.6	72	22.2	100	S	6	2.7	.....	.....	10n	.....	S	0.15	3.8	Light rain	
San Diego, California	30.08	764.0	30.15	765.8	50	10.0	64	NE	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Sandusky, Ohio	29.38	746.2	30.08	764.0	37	2.8	80	SW	6	2.7	.....	1c	1ks	Calm	Calm	0	0	Fair	
Sandy Hook, New Jersey	30.04	763.0	30.06	763.5	46	7.8	61	NW	16	7.2	.....	0	0	.....	.....	0.08	2.0	Clear	
San Francisco, California	30.10	764.5	30.17	766.3	50	10.0	89	W	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Santa Fé, New Mexico	23.08	586.2	29.62	752.3	34	1.1	35	N	14	6.3	.....	Haze	1s	.....	Calm	0.03	0.8	Clear	
Savannah, Georgia	29.92	760.0	30.01	762.2	62	16.7	94	NW	4	1.8	.....	0	0	.....	.....	0.01	0.3	Clear	
Shreveport, Louisiana	29.55	750.6	29.77	756.1	61	16.1	100	S	8	3.6	.....	.....	10s	.....	Calm	0.40	10.2	Cloudy	
Smithville, North Carolina	30.03	762.7	30.06	763.5	63	17.2	78	NE	11	4.9	.....	.....	10s	.....	NE	0.07	1.8	Cloudy	
Springfield, Massachusetts	29.80	756.9	29.93	760.2	44	6.7	67	NE	4	1.8	.....	0	0	.....	.....	0.33	8.4	Clear	
Stanwix, Arizona	.....	.....	.....	.....	38	3.3	45	NW	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Stockton, Texas	26.80	680.7	29.80	756.9	51	10.6	100	NW	8	3.6	.....	.....	10s	.....	NW	0.03	0.8	Cloudy	
Thatcher's Island, Mass.	29.88	758.9	29.94	760.5	42	5.6	83	NW	16	7.2	.....	0	0	.....	.....	0.58	14.7	Clear	
Toledo, Ohio	29.36	745.7	30.05	763.3	39	3.9	63	Calm	0	0	.....	5c	Haze	Calm	Calm	0	0	Fair	
Tucson, Arizona	27.64	702.0	30.20	767.1	39	3.9	26	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Tybee Island, Georgia	29.96	761.0	29.99	761.7	70	21.1	84	NE	8	3.6	.....	1k	0	E	.....	0.05	1.3	Clear	
Umatilla, Oregon	29.92	760.0	.....	.....	23	—5.0	72	SE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Vicksburg, Mississippi	29.66	753.4	29.92	760.0	59	15.0	88	SE	8	3.6	.....	.....	10s	.....	S	0	0	Cloudy	
Virginia City, Montana	24.34	618.2	29.82	757.4	20	—6.7	70	SE	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Visalia, California	29.84	757.9	30.23	767.8	38	3.3	71	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Washington, D. C.	30.00	762 0	30.11	764.8	41	5.0	82	N	1	0.4	.....	.....	Fog	.....	N	0.04	1.0	Foggy	
Wickenburg, Arizona	.....	.....	.....	.....	29	—1.7	24	NW	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Wilmington, N. Carolina	29.98	761.5	30.06	763.5	58	14.4	87	NE	5	2.2	.....	0	5s	.....	NW	Inap.	Inap.	Fair	
Winnemucca, Nevada	25.73	653.5	30.09	764.3	22	— 5.6	72	W	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Wood's Holl, Mass.	29.92	760.0	29 98	761.5	45	7.2	76	NW	12	5.4	.....	0	0	.....	.....	0.60	15.2	Clear	
Yankton, Dakota	28.51	724.1	29.80	756.9	40	4.4	86	NW	6	2.7	.....	.....	10n	.....	Calm	0.01	0.3	Light rain	
Yuma, Arizona	30.02	762.5	30.19	766.8	60	10.0	32	N	14	6.3	.....	0	0	.....	.....	0	0	Clear	
SUB-SERIES.																			
York Factory, B. A.	29.84	757.9	29.90	759.4	29.0	—1.7	94	NW	15	6.7	.....	3k	6s	N	N	Inap.	Inap.	Threatening	J. Fortescue, W. Wood
Havana, Cuba, W. I.	29.90	759.4	29.92	760.0	81	27.2	78	SE	2.4	1.1	.....	0	0	.....	.....	0	0	Clear	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.07	763.8	30.08	764.0	79	26.1	82	Calm	0	0	.....	2c	0	Calm	.....	0	0	.....	James Gall.
Navassa, W. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. M. Everett.
St. Thomas, W. I.	.....	.....	.....	.....	80	26.7	82	E	1	0.4	.....	2c	5ks	NE	.....	0.70	17.8	Clearing	G. O. Gellich.
Paramaribo, D. Guiana, S. A.	.....	.....	30.00	762.0	83	28.3	79	SE	.....	.....	2	5k	7ks	E	.....	0	0	Fair	C. J. Hering.
Batavia, Dutch Guiana, S. A.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Dr. H. Groot.
Medellin, Colombia, S. A.	25.18	639.6	.....	.....	65.0	18.3	88	Calm	.....	.....	0	4ck;cs	3ks	.....	.....	0.06	1.5	Cloudy	Thomas Herran.
Honolulu, Oahu, H. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Daniel Smith.
Makawao, Maui, H. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,509 (?) ft., or 1,066.6 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 m., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.5 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Ploche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fe, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Ploche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in. Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

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

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

STATIONS AND VESSELS.	BAROMETER. As reported.* Inches.	BAROMETER. As reported.* Millimeters.	BAROMETER. Attached Thermometer. Fahrenheit.	BAROMETER. Attached Thermometer. Centigrade.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Up'er From—	CLOUDS. Direction. Low'r From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	SEA-SWELL. Character.	SEA-SWELL. Direction from—	WEATHER.	OBSERVER.
Navy Yard Mare Island, Cal.	30.15	765.8	49	9.4	46	7.8	69	N	1	0.4	....	.....	3ks	.....	Calm	0	0	.....	.....	Clear.....	
Navy Yard, Pensacola, Fla.	30.10	764.5	.....	.....	66	18.9	84	NE	5	2.2	....	.....	10	.....	.....	0	0	.....	.....	D. clouds....	
Navy Yard, Portsmouth, N.H	29.85	758.2	57	13.9	39	3.9	73	Calm	0	0	.....	.....	0	.....	.....	0.1	3.	.....	.....	Clear	
Naval Hospital, Yokohama, Japan.....	29.85	758.2	58	14.4	52.5	11.4	90	NNW	.....	.....	1	.....	4k	.....	NW	1.23	30.2	.....	.....	Fair.....	
Adams, Montevideo, Uruguay.....	30.01	762.2	65	18.3	65	18.3	73	NE	.....	.....	1	.....	3	.....	E	0	0	Light	E	D. clouds.....	
Alert, Nagasaki, Japan.....	30.12†	765.0†	63	17.2	64	17.8	78	Calm	.....	.....	0	.....	0	.....	.....	.....	.....	Smooth	.....	Hazy.....	
Alliance, Constantinople, Turkey.	30.14	765.5	63	17.2	58	14.4	94	N	.....	.....	1	.....	10	.....	N	.....	.....	.....	.....	Overcast.....	
Ashuelot, Tientsin, China.....	30.02	762.5	59	15.0	52	11.1	66	S&W	.....	.....	1-2	.....	8	.....	.....	.....	.....	.....	.....	Hazy.....	
Canonicus, New Orleans, La.....	29.95	760.7	49	9.4	67	19.4	89	E	.....	.....	2	.....	7	.....	S&E	.....	.....	.....	.....	Cloudy.....	
Colorado, New York, N. Y.....	30.11	764.8	63	17.2	46	7.8	69	NW	11	4.9	.....	.....	3	.....	NW	0.25	6.3	.....	.....	Clear.....	
Despatch, Constantinople, Turkey.	30.09	764.3	60	15.6	58	14.4	88	NE	.....	.....	1	.....	10	.....	N&E	.....	.....	.....	.....	Rainy.....	
Franklin, Norfolk, Va.....	30.19	766.8	66	18.9	55	12.8	80	NE	1.2	0.5	.....	.....	1	.....	NE	0	0	.....	.....	Clear.....	
Gettysburg, Off Port Augusta, Sicily.	29.91‡	759.7‡	.....	.....	70	21.1	95	SE	.....	.....	3	.....	0	.....	.....	0	0	Light	SE	Blue sky.....	
Guard, Off Faulkners Id., Long Island Sound..	30.08	764.0	58	14.4	48	8.9	85	NNW	.....	.....	4	.....	1	.....	.....	.....	.....	.....	.....	Hazy.....	
Lackawana, Port Townsend, W. T....	30.17	766.3	.....	.....	44	6.7	92	Calm	.....	.....	0	.....	0	.....	.....	.....	.....	.....	.....	Foggy	
Marion, Smyrna, Turkey.....	29.97	761.2	69	20.6	64	17.8	48	W	.....	.....	3	.....	8	.....	Calm	0	0	Smooth	.....	D. clouds.....	
Michigan, Erie, Pa.....	29.55	750 6	55	12.8	45	7.2	68	S	.....	.....	1	.....	10	.....	SW	.....	.....	.....	.....	Cloudy.....	
Monocacy, Yokohama, Japan.....	29.84	757.9	57	13.9	54	12.2	87	N	.....	.....	2	.....	3	.....	N	Blank	Blank	.....	.....	D. clouds.....	
Monongahela, Gibraltar, Spain.....	30.27	768.8	71	21.7	71	21.7	71	E	.....	.....	1	.....	ks	.....	.....	.....	.....	Smooth	.....	D. clouds.....	
New Hampshire, Port Royal, S.C.....	30.17	766.3	.....	.....	67	19.4	95	NE	18	8.0	.....	.....	10	.....	.....	0	0	.....	.....	Squally	
Omaha, S. 20° 20′, W. 77° 15′.....	30.12	765.0	67	19.4	65.5	18.6	66	SE	13	5.8	.....	.....	10	.....	SE	0	0	Moderate.	SE	Cloudy	
Onward, Callao, Peru.....	30.04	763.0	70	21.1	67.5	19.7	87	SSE	.....	.....	1	.....	10	.....	.....	.....	.....	Long	W	Hazy.....	
Ossipee, Hampton Roads, Va.....	30.13	765.3	64	17.8	56	13.3	63	NE	.....	.....	4	.....	1	.....	NE	.....	.....	.....	.....	D. clouds. ...	
Palos, Shanghai, China.....	30.13	765.3	67	19.4	62	16.7	77	ESE	.....	.....	3-4	.....	10	.....	S&E	.....	.....	.....	.....	Cloudy.....	
Pensacola, Mare Island, Cal.....	30.02	762.5	.....	.....	51	10.6	86	Calm	.....	.....	0	.....	1	.....	.....	0	0	.....	.....	Clear	
Plymouth, Norfolk, Va.....	30.09	764.3	66	18.9	54	12.2	87	NE	.....	.....	0-1	.....	0	.....	.....	.....	.....	.....	.....	Misty.....	
Ranger, Shanghai, China.....	30.18	766.6	.....	.....	65	18.3	84	SSE	.....	.....	2	.....	7	.....	SE	.....	.....	.....	.....	Pleasant.....	
Rio Bravo, Brownsville, Texas.....	29.80	756.9	.....	.....	79	26.1	95	SSE	.....	.....	2	.....	3	.....	WSW	.....	.....	.....	.....	D. clouds.....	
Santee, Annapolis, Md.....	30.13	765.3	56	13.3	45	7.2	76	NW	.....	.....	2	.....	0	.....	.....	0	0	.....	.....	Hazy.....	
Saratoga, Hampton Roads, Va.....	30.46†	773.7†	.....	.....	57	13.9	100	NNE	.....	.....	4	.....	1	.....	Calm	Blank	Blank	.....	.....	Fair	
St. Louis, League Island, Pa	29.95	760.7	43	6.1	42	5.6	91	NW	5	2.2	.....	.....	0	.....	.....	0	0	.....	.....	Clear.....	
Swatara, Hampton Roads, Va.....	30.10	764.5	.....	.....	56	13.3	69	NE	.....	.....	2	.....	1	.....	.....	.....	.....	.....	.....	D. clouds.....	
Tennessee, Yokohama, Japan.....	30.07	763.8	68	20.0	53	11.7	93	WNW	2	0.9	.....	.....	6	.....	NW	1.5	38.	None	.....	D. clouds.....	
Trenton, Villefranche, France.....	30.18	766.6	70	21.1	66	18.9	79	Calm	0	0	.....	.....	1	.....	Calm	0	0	.....	.....	D. clouds.....	
Vandalia, Villefranche, France.,...	30.16	766.1	67	19.4	67	19.4	79	S	.....	.....	1	.....	0	.....	.....	.....	.....	.....	.....	Blue sky.....	
Wabash, Boston, Mass.....	29.95	760.7	54	12.2	41	5.0	91	WNW	4	1.8	.....	.....	0	.....	.....	0.47	11.9	.....	.....	Hazy.....	
Wyoming, Washington, D. C.....	30.35†	770.9†	56	13.3	44	6.7	.....	W	.....	.....	1	.....	0	.....	.....	.....	.....	.....	.....	Hazy.....	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. ‡ Barometer corrected for instrumental error and reduced to sea-level.

UNITED STATES MARINE SERIES.

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

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	OBSERVER.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.	Character.	Direction from—		
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—				
PACIFIC MAIL S. S. CO. MARINE SERIES. Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			
N. 32° 05′ 12″, W. 119° 42′ 45″			30.01	762.2	62	16.7	83	NNW			4		2		NW	Moderate.	NW	Clear	Capt. Howard.
S. S. City of Peking, Yokohama, Japan			30.07*	763.8*	53	11.7	100	NNW			2		3		NNW	Smooth		Showery	Lt. Z. L. Tanner, U.S.N.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio																			Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

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

WHITE STAR LINE MARINE SERIES.

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

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

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

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

S. S. Belgic, N. 30° 34′, W. 163° 10′			30.12†	765.0†				Var.			3				NW	Long	NW	Fine	Capt. John Metcalf.
S. S. Gaelic																			Capt. W. H. Kidley.
S. S. Oceanic																			Capt. H. Parsell.

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

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

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

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig																			Capt. K. Undütsch.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio																			
Weser River			30.25	768.3	51.0	10.6	86	WNW			6		ks		WNW			Hazy	Capt. G. Meyer.

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

UNITED STATES MARINE SERIES.—Continued.

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

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Lo'wr.	Upper.	Lower.	Character	Direction From—		
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second	0—10.	0—10.	0—10.	From—	From—				
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, Philadelphia, Pa			30.02*	762.5*	59	10.6	72	NW			5		8?		NNW			Clear?	Captain Sargent.
S. S. Ohio, Philadelphia, Pa			30.12	765.0	44	6.7	88	WNW			1		0					Fair	Captain Morrison.
S. S. Pennsylvania, Queenstown, Ireland			30.42†	772.7†	54	12.2	87	WSW			2		2		SW	Smooth	WSW	Clear.	Captain Harris.

NOTE.—The originals give the barometer as read off; the wind-force by the scale 0 to 12. *Aneroid; correction for elevation applied, instrumental error not known. †Corrected for temperature and elevation, instrumental error not known.

RED STAR LINE MARINE SERIES.

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

S. S. Nederland																			Capt. Randle.
S. S. Switzerland, N. 49° 42′, W. 20° 32′			30.24*	768.1*	56	13.3		S	20	8.9			10		S	Cross	Var.	Misty.	Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

* Aneroid; regulated to standard at Antwerp.

ALLAN LINE MARINE SERIES.

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

S. S. Hibernian																			Capt. W. Richardson.
S. S. Scandinavian																			

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, Hyannis, Mass.			29.85	758.2	50	10.0	77	NW	10	4.5			0					Clear	Capt. James Jorgensen.

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

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

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

Albert J. Myer

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

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON NOVEMBER 2, 1877.

7:35 A. M. WASHINGTON mean time.

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

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

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

ALGERIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours	.....	.....	30.14	765.6	70.7	21.5	75	N	.....	.....	1	.....	4	.....	.....	.....	.....	Cloudy	Michel.
Algiers	.....	.....	30.11	764.8	68.0	20.0	88	SSE	.....	.....	1	.....	0	.....	.....	0	0	Clear	Peter.
La Calle	.....	.....	30.16	766.1	71.8	22.1	71	N	.....	.....	1	.....	5	.....	.....	0	0	Cloudy	Fleury.
Tunis	.....	.....	30.20	767.0	68.5	20.3	61	N	.....	.....	3	.....	4	.....	.....	0.024	0.6	Cloudy	Jacques.
Sfax	.....	.....	30.18	766.5	64.4	18	.....	NW	.....	.....	2	.....	8	.....	.....	0	0	Very cloudy	Husson.
Saida	.....	.....	30.19	766.8	75.7	24.3	30	Calm	.....	.....	0	.....	1	.....	.....	.....	.....	Very fair	Millot.
Tebessa	.....	.....	30.17	766.2	.....	.....	.....	NW	.....	.....	2	.....	0	.....	.....	0	0	Clear	Bourgeois.
Geriville	.....	.....	30.17	766.2	69.8	21.0	57	SW	.....	.....	2	.....	2	.....	.....	0	0	Fair	Lemaillot.
Laghouat	.....	.....	30.21	767.3	73.4	23.0	31	W	.....	.....	2	.....	0	.....	.....	0	0	Clear	Guyot.
Biskra	.....	.....	30.21	767.4	76.6	24.8	27	NW	.....	.....	2	.....	0	.....	.....	0	0	Clear	Kuntz.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

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

AUSTRIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Agram	29.66	753.3	30.22	767.6	52.9	11.6	40	NE	.....	.....	2	.....	6	.....	.....	0	0	.....	Prof. Ivan Stozir
Cracow, I. R. Observatory	29.41	747.0	30.20	767.0	45.3	7.4	70	W	.....	.....	3	.....	10	.....	.....	0.118	3.0	.....	Dr. Wierzbiski.
Eperies	29.22	742.2	30.12	765.1	43.9	6.6	74	NW	.....	.....	2	.....	10k;s	.....	Calm	0.043	1.10	.....	Julius Mikolik.
Gratz	28.98	736.1	30.24	768.2	51.3	10.7	36	WNW	.....	.....	5	.....	1	.....	.....	0.012	0.3	.....	Andreas Rospini.
Hermannstadt	28.61	726.6	30.05	763.2	46.4	8 0	58	NNW	.....	.....	3	.....	6	.....	.....	0	0	.....	Prof. Reissenberger.
Kremsmünster	28.93	734.8	30.30	769.7	46.8	8.2	70	NW	.....	.....	2	.....	3	.....	.....	0	0	.....	Prof. C. Wagner.
Lemberg	29.02	737.1	30.03	762.7	44.8	7.1	86	NW	.....	.....	1	.....	10	.....	.....	Blank	Blank	.....	Dr. T. Stanecki.
Pola	30.18	765.3	30.24	768.2	58.8	14.9	42	WSW	.....	.....	1	.....	0	.....	.....	0	0	.....	I.R.Hydrographic Office.
Szathmar	29.64	752.9	30.12	765.0	45.7	7.6	79	N	.....	.....	2	.....	9	.....	.....	0	0	.....	Johann Tamas, S. J.
Szegedin	29.78	756.4	30.07	763.6	51.4	10.8	67	NW	.....	.....	4	.....	3	.....	.....	0	0	.....	Karl Stancel.
Trieste	30.18	766.5	30.28	769.1	56.1	13.4	75	Calm	.....	.....	0	.....	0	.....	.....	0	0	Clear	P. Busin.
Vienna	29.55	750.6	30.26	768.6	50.4	10.2	58	NNW	.....	.....	3	.....	10	.....	.....	0	0	.....	I. R. Central Met. Obs'y.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time, and at Trieste at 7 a. m. of the following day. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 388.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Arlon	28.75	730.2	30.30	769.6	43.9	6.6	86	S	.....	.....	2	.....	1	.....	.....	0	0	.....	Prof. M. Passau.
Brussels	30.04	763.0	30.24	768.2	52.3	11.3	65	SW	.....	.....	2	.....	1	.....	SSW	0.004	0.10	.....	Royal Observatory.
Furnes	30.19	766.8	30.21	767.4	52.9	11.6	72	SW	.....	.....	4	.....	2	.....	.....	0.008	0.2	.....	M. E. de Cae.
Maeseyck	30.16	766.0	30.29	769.3	53.1	11.7	83	SSW	.....	.....	2	.....	5	.....	.....	0	0	.....	M. Pierrot.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

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

BRITISH SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Aberdeen	29.67	753.6	29.77	756.1	52.2	11.2	.....	SSW	25	11.2	.....	.....	9	.....	.....	0.060	2.03	Squally.....	W. Boswell.
Ardrossan	29.79	756.7	29.81	757.2	52	11.1	.....	SSW	.....	.....	6	.....	10	.....	.....	.....	.....	Raining.....	William McNeil.
Armagh, Observatory	.....	.....	29.81	757.2	50.3	10.2	.....	S	18	8.0	.....	.....	10	.....	.....	.....	.....	Raining.....	S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)	.....	.....	30.01	762.2	49.8	9.6	.....	S	13	5.8	.....	.....	10	.....	.....	.....	.....	Overcast.....	John Hartnup.
Birr Castle, (Parsonstown)	.....	.....	29.83	757.7	52.0	11.1	.....	SSE	.....	.....	1	.....	10	.....	.....	.....	.....	Raining.....	J. Dreyer.
Bradford, Yorkshire	29.60	751.8	29.99	761.7	50.1	10.1	.....	NW	.....	.....	3	.....	10	.....	.....	0	0	Overcast.....	J. McLandsborough.
Bridgetown, (Barbados)	29.83	757.7	29.86	758.4	82.0	27.8	.....	NE	.....	.....	1	.....	3	.....	.....	.....	.....	D. clouds.....	Pvt. G. W. Roberts, A.
Cambridge, Observatory	.....	.....	30.12	765.0	52.0	11.1	.....	S	.....	.....	1	.....	10	.....	.....	Blank	Blank	Overcast.....	H. Todd. [H.C.
Cardington	.....	.....	30.11	764.8	53.0	11.7	.....	S	.....	.....	1	.....	9	.....	.....	.....	.....	Overcast.....	John McLaren.
Chatham, School M. E	30.03	762.7	30.16	766.1	52.2	11.2	.....	S	.....	.....	2	.....	6	.....	.....	.....	.....	Blue sky.....	Lt. Col. C.M.Martin, R.E.
Dartmoor	28.56	725.4	30.03	762.7	51.2	10.7	.....	SW	.....	.....	3	.....	6	.....	.....	.....	.....	Gloomy.....	Alexander Watt.
Davos Platz, (Switzerland)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Francis Redford, M. A.
Donaghadee	29.80	756.9	29.83	757.7	52	11.1	.....	SW	.....	.....	2	.....	10	.....	.....	.....	.....	Raining.....	J. Mac Gowan.
Dover	30.15	765.8	30.18	766.6	52	11.1	.....	SSW	.....	.....	3	.....	3	.....	.....	.....	.....	¾ clouded...	J. Costello.
Eccles, (near Manchester)	.....	.....	30.02	762.5	50.0	10.0	.....	SW	2.0	0.9	.....	.....	10	.....	.....	.....	.....	Gloomy.....	Thomas Mackereth.
Falmouth, Observatory	29.83	757.7	30.06	763.5	53.0	11.7	.....	S	.....	.....	4	.....	10	.....	.....	.....	.....	Overcast.....	The Staff.
Fort Napier, (Natal)	27.71	703.8	29.93	760.2	65.4	18.6	.....	E	.....	.....	3	.....	5	.....	.....	.....	.....	D. clouds.. ..	Pvt. G. Salmon, A.H. C.
Free Town, (Sierra Leone)	.....	.....	29.94	760.5	83.0	28.3	.....	W	.....	.....	0	.....	4	.....	.....	.....	.....	D. clouds.....	
Galway, Queen's College	.....	.....	.....	.....	53	11.7	.....	SW	.....	.....	3	.....	5	.....	.....	.....	.....	D. clouds.....	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	30.05	763.3	30.10	764.5	68.6	20.3	.....	NE	.....	.....	4	.....	8	.....	.....	.....	.....	Overcast.....	Corpl. C. Aitken, A.H.C.
Glasgow, Observatory	29.61	752.1	29.81	757.2	50.0	10.0	.....	SSW	.....	.....	5	.....	10	.....	.....	.....	.....	Raining.....	D. G. Maclean.
Great Yarmouth	30.13	765.3	30.14	765.5	52	11.1	.....	SSW	.....	.....	3	.....	5	.....	.....	.....	.....	D. clouds.....	G. T. Watson.
Greenwich, Royal Obs'y	29.97	761.2	30.15	765.8	53.2	11.8	.....	SSW	.....	.....	2	.....	8	.....	.....	.....	.....	D. clouds.....	The Staff, for G. B. Airy.
Guernsey	29.86	758.4	30.08	764.0	52.5	11.4	.....	SE	.....	.....	3	.....	7	.....	.....	.....	.....	D. clouds.....	Dr. S. E. Hoskins, F.R.S.
Helston	.....	.....	30.06	763.5	55	12.8	.....	SE	.....	.....	4	.....	10n	.....	.....	0	0	Overcast.....	M. P. Moyle.
Holyhead	29.85	758.2	29.91	759.7	52	11.1	.....	SSW	.....	.....	6	.....	10	.....	.....	.....	.....	Misty	John Tilston.
Jersey	29.86	758.4	30.16	766.1	51.5	10.8	.....	SE	.....	.....	4	.....	8	.....	.....	.....	.....	Gloomy.....	J. Fisher.
Kew, Observatory	.....	.....	30.15	765.8	52.0	11.1	.....	S	18	8.0	.....	.....	8k	.....	.....	.....	.....	D. clouds.....	The Staff.
Kingstown	29.59	759.2	29.92	760.0	53	11.7	.....	S	.....	.....	3	.....	10	.....	.....	.....	.....	Overcast.....	George Mitchell.
Leicester, Museum	.....	.....	30.08	764.0	50.2	10.1	.....	S	.....	.....	1	.....	10	.....	.....	.....	.....	Overcast.....	Wm. J. Harrison, F.G.S
Malta, (Mediterranean)	29.94	760.5	30.02	762.5	69.6	20.9	.....	N	.....	.....	3	.....	2	.....	.....	.....	.....	D. clouds.....	S'gt. C. Arbelter. A.H.C.
Nairn	29.57	751.1	29.66	753.4	50	10.0	.....	Calm	.....	.....	0	.....	5	.....	.....	.....	.....	½ clouded...	W. D. Penny.
Nassau, (Bahamas)	.....	.....	29.98	761.5	81.2	27.3	.....	NE	.....	.....	1	.....	2	.....	.....	.....	.....	Blue sky.....	C. S. Duncombe.
Nottingham, Observatory	29.87	758.7	30.06	763.5	51.3	10.7	.....	S	.....	.....	3	.....	10k	.....	SSW	0	0	Overcast.....	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.53	750.0	30.06	763.5	49.0	9.4	.....	S	.....	.....	3	.....	10	.....	.....	.....	.....	Overcast.....	Rev. Stephen Whitty
Oxford, Radcliffe Obs'y	.....	.....	30.10	764.5	53	11.7	.....	S	.....	.....	1	.....	10	.....	.....	.....	.....	Overcast.....	F. Lucas
Plymouth	30.00	762.0	30.07	763.8	53.2	11.8	.....	SSE	.....	.....	4	.....	10	.....	.....	.....	.....	Gloomy... ..	John Merrifield.
Roche's Point	29.85	758.2	29.90	759.4	54	12.2	.....	SSW	.....	.....	6	.....	10	.....	.....	.....	.....	Raining.....	W. Kennedy.
Saint Ann's Head	29.84	757.9	30.00	762.0	51	10.6	.....	S	.....	.....	5	.....	10	.....	.....	.....	.....	Overcast.....	John C. Walker.
Sandwick Manse, (Orkneys)	.....	.....	29.61	752.1	51.9	11.1	.....	S	24	10.7	.....	.....	10	.....	.....	.....	.....	Overcast.....	Rev. C. Clouston, LL. D
Scutari, Cemetery, (Turkey)	.....	.....	29.86	758.4	53.7	12.1	.....	NNE	.....	.....	2	.....	10	.....	.....	.....	.....	Raining.....	Sergt. W. H. Lyne.
Sheffield	29.79	756.7	30.04	763.0	51.0	10.6	.....	SW	.....	.....	2	.....	9	.....	.....	0.09	2.3	Overcast.....	W. F. Cooper.
Silloth Rectory	29.87	758.7	29.90	759.4	52.3	11.3	79	SW	.....	.....	6	.....	10	.....	.....	0.585	14.86	Overcast.....	Rev. F. Redford, M. A.
Stonyhurst, Observatory	.....	.....	.....	.....	48.8	9.3	.....	SW	.....	.....	3	.....	10	.....	.....	.....	.....	Misty.....	Rev. S. J. Perry.
Stornoway, Lews C., (Hebr.)	.....	.....	29.57	751.1	49	9.4	.....	W	.....	.....	2	.....	10	.....	.....	.....	.....	Raining.....	John Smith.
Straifield Turgiss	29.93	760.2	30.15	765.8	52.6	11.4	.....	S	.....	.....	1	.....	8	.....	.....	.....	.....	D clouds....	Rev. C. H. Griffith, F.M.S.
Thurso	.....	.....	29.60	751.8	53	11.7	.....	SSW	.....	.....	3	.....	8	.....	.....	.....	.....	Gloomy.....	John Trotter.
Truro, Royal Institution	.....	.....	29.97	761.2	54	12.2	.....	SE	.....	.....	6	.....	10	.....	.....	.....	.....	Gloomy.....	W. Newcombe.
Valencia, Observatory	.....	.....	29.84	757.9	53.4	11.9	.....	S	14	6.3	.....	.....	10	.....	.....	.....	.....	D. clouds....	The Staff.
SUB-SERIES.																			
Calf of Man, (Isle of Man)	.....	.....	.....	.....	50	10.0	.....	SSW	.....	.....	7	.....	5	.....	.....	0	0	.....	Henry Mercer.
Cape Good Hope, Obs'y	29.82	757.4	29.86	758.4	65.0	18.3	76	NW	13	5.8	.....	10	10	.....	.....	.....	.....	.....	The Staff, for E. J. Stone.
Hobart Town, (Tasmania)	.....	.....	29.06	738.1	45.0	7.2	81	N	.....	.....	3	.....	8kn	.....	.....	0.33	8.4	Cloudy.....	Francis Abbott, F.R.A.S
Leith, Restalrig Park	.....	.....	29.87	758.7	53.0	12.2	.....	W	.....	.....	3	.....	10k	.....	.....	0.02	0.5	Cloudy.....	Andrew Gibb.
Mauritius, Observatory	29.80	756.9	29.99	761.7	78.8	26.0	76	E	13.5	6.0	.....	4	5	NW	E	0.96	24.4	Cloudy.....	C. Meldrum.
Melbourne, Observatory	29.53	750.0	29.62	752.3	49.6	9.8	64	NW	28	12.5	.....	.....	10	.....	.....	0.16	4.1	Squally.....	R. L. J. Ellery.
Monach L't-house, (Hebrides)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Youngclause.
North Unst, (Shetland Is.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Robert Burnet.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Holston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,1057 ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m. *Rain-fall during the month.

MARINE SERIES. VESSELS.	Sea or swell. Height scale 0–9	Sea or swell. Direction from—	Weather	Observer.
S. S. Algeria, N. 47° 58′, W. 36° 8′	*10	W; S	Showery.....	Capt. W. Watson.
S. S. Batavia	.....	.....	.....	Capt. J. E. Monland.
Ship Camperdown	.....	.....	.....	Capt. A. T. Miller.
Brig Catherine, N. 49° 35′, W. 19° 20′	3	SW	Blue sky....	Capt. Adam Smith.
Barque Celeste	.....	.....	.....	Capt. D. F. McKechnie
S. S. Hibernia	.....	.....	.....	Capt. W. R. Cato.
Barque Maroon	.....	.....	.....	Capt. A. T. Brown.
Ship Mikado	.....	.....	.....	Capt. C. C. Prehn.
S. S. Seine	.....	.....	.....	Capt. H. Manning.
Barque Sorata	.....	.....	.....	Capt. Jas. J. Price.
Schooner Traveller, N. 50° 25′, W. 7° 15′	4; 3	WSW; S	D. clouds.....	Capt. Alex Simpson.
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....

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

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

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

STATIONS.	BAROMETER. Corrected for instrum'tal error and temperature. Inches.	BAROMETER. Corrected for instrum'tal error and temperature. Millimeters.	BAROMETER. Reduced to sea-level. Inches.	BAROMETER. Reduced to sea-level. Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Upper. From—	CLOUDS. Direction. Lower. From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	WEATHER.	OBSERVER
San José	26.19	665.2			67.1	19.5	86	S			1	2c		E		0	0		Federico Maison.

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

DANISH SERIES.

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

Copenhagen	30.03	762.8	30.08	764.0	49.6	9.8	86	NW			2		8						
Fanöe	30.09	764.3	30.11	764.8	50.2	10.1	87	SW			2		9						
Godthaab, (Greenland)	29.72	754.9	29.76	756.0	19.2	—7.1	81	NNE			4		8						
Stykkisholm, (Iceland)	29.18	741.2	29.22	742.3	36.5	2.5	96	NE			7		10						Raining.
Thorshavn, (Faröe)	29.28	743.7	29.32	744.6	47.7	8.7	80	WSW			5		10						
Vestervig	29.88	759.0	30.05	763 3	47.3	8.5	91	W			4		7						

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

FRENCH SERIES.

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

Alençon, Normal School	29.69	754.2	30.24	768.2	55.4	13	77	SW			1		5		E	0	0	Cloudy	Collignon, Director.
Amiens, Normal School	30.18	766.6	30.30	769.5	51.8	11.0	75	W			1		0			0	0	Very clear	Bonvarne, Director.
Avignon, Normal School	30.14	765.5	30.22	767.5	62.2	16.8	47	N			2		0			0	0	Slightly cl'dy	Mr. Giraud, Director.
Bar-sur-Seine	29.66	753.3	30.23	767.8	55.8	13.2	44	S			1	2c				0	0		C. Saillard.
Beaumette Obs'y (Angers)	29.92	760.0	30.09	764.2	57.0	13.9	53	SSE	2.9	1.3					S	0	0	Slightly cl'dy	Albert Cheux.
Beauvais	29.94	760.5	30.23	767.9	50.2	10.1	69	ENE			1		2			0	0	Slightly cl'dy	Normal School.
Besançon	29.35	745.6	30.27	768.8	51.8	11	65	E			2		0			0	0	Clear	Normal School.
Bourg-en-Bresse	29.40	746.7	30.32	770.2	47.7	8.7	91	SW			1	5c		SW		0.047	1.2	Cloudy	Normal School.
Bourges, Normal School	29.77	756.1	30.35	771.0	55.0	12.8	77	ENE			4		2		E	0	0	Slightly cl'dy	A. Wagner, Director.
Brest, Naval Observatory	29.81	757.1	30.03	762.7	52.0	11.1	77	SSW			4		9ks		SSW	0	0		The Staff.
Carcassonne, Normal School	29.71	754.5	30.12	765.0	62 2	16.8	72	W			4		1		W	0	0	Clear	Vateau, Director.
Caen	30.08	764.0	30.15	765.8	54.9	12.7	70	NNW			4		5		NE	0	0	Cloudy	Normal School.
Chartres, Normal School	29.61	752.0	30.17	766.4	55.4	13	75	SE			1		3		SE	0	0		Lequin, Director.
Châlons-sur-Marne, N. Sch'l	29.93	760.2	30.25	768.3	56.7	13.7	58	W			2	2c				0	0	Slightly cl'dy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.79	731.2	30.13	765.4	59.0	15.0	48	SE			1					0	0	Hazy	Allnard, Director.
Commercy, Normal School	29.40	746.8	30.31	769.8	47.5	8.6	73	E			2		1		E	0	0	Clear	Dr. Goulet, Director.
Commune de Gréasque*	29.11	739.3	30.25	768.3	66.7	19.3	38	E			4		2		E	0	0	¼ covered	C. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	29.91	759.6	30.13	765.2	56.5	13.6	78	NE			1		8		NE	0	0	Very cloudy	Mouillot, Director.
Le Mans, Normal School	29.85	758.3	30.17	766.2	53.2	11.8	65	SSE			2		5		E	0	0	Cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.31	744.5	30.24	768.2	46 2	7.9	92	S			2		0			0	0	Clear	Pin, Director.
Lorient, Naval Observatory	30.04	763.1	30.14	765.6	57.2	14.0	67	E			2		2		E	0	0	¼ covered	T. Carré, Director.
Mâcon, Normal School	29.70	754.3	30.39	772.0	45.5	7.5	89	Calm			0		0			0	0	Clear	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	29.24	742.7	30.23	767.7	46.8	8.2	48	W					2		E	0	0	Slightly cl'dy	Normal School
Nismes, Normal School	30.02	762.5	30.22	767.6	65.5	18.6	59	E			2		0			0	0	Clear	Boyer, Director.
Orleans, Normal School	29.88	759.0	30.26	768.6	53.2	11.8	57	E			2		2		NE	0	0	Slightly cl'dy	Bernard, Director.
Paris, Observatory	29.98	761.5	30.22	767.6	53.2	11.8	63	SSE			1		3ck		W	0	0	Slightly cl'dy	National Observatory.
Privas	29.17	741.0	30.24	768.2	55.4	13	57	NW			2		1		N	6	0	Clear	Normal School
Rochefort, Naval Obs'y	30.10	764.4	30.13	765.2	55.4	13.0	81	E			4		2		SE	0	0	¼ covered	Lt. Decante, Director.
Rouen, Normal School	30.08	764.0	30.17	766.2	52.7	11.5	68	SSE			1		0			0	0	Clear	F. Lucard, Director.
Tarbes, Normal School																			T. Hugues, Director.
Villefranche	29.56	750.9	30.28	769.2	55.8	13.2	77	SW			2					0	0	Hazy	Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.77	756.1	29.80	756.8	82.4	28										0	0		L'Abbé Marchési.
Marseilles, Observatory			30.17	766.3	70.2	21.2	45	S			0–1		0			0	0		The Staff.
Mont-Louis	25.04	635.9	30.35	770.9	59.0	15.0	13	SSW	14 9	6.66			0			0	0		Mr. Falguère.
Nice			30.22	767.5	62.6	17.0		E					1		E	0	0	Clear	Dr. A. Niepce.
Paris, Montsouris Obs'y	29.93	760.1	30.20	767.1	55.6	13.1	60	SE			3	9c		WNW		0	0		Marié Davy, Director.
Perpignan			30.19	766.9	59 0	15.0	52	E	3.7	1.67			0			0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.	21.42	544.1			45.3	7.4		NW			2		1					Clear	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.70	576.6			52.3	11.3		NW			2		0			0	0	Clear	Gen'l de Nansouty.
Saint Maur, (near Paris)	30.05	763.3	30.22	767.5	55.6	13.1	53	SE			1		0			0	0	Clear	E. Renou.
Toulouse, Observatory	29.42	747.2	30.14	765.6	62.6	17.0	35	SE			3		1			0	0		The Staff.
Tours	29.93	760.2	30.13	765.2	55.8	13.2		SE			3		3		S	0	0		C. Marquet.
Versailles, (near Paris)			30.20	767.1	54.7	12.6	57	SSE			2		5			0	0	Fair	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.12	765.0	30.15	765.7	51.6	10.9	94	N	2.9	1.3			5k			0.413	10.5	Cloudy	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; for Montsouris, the barometer reduced to freezing but not to sea-level. At Mirecourt the cloud direction is apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,365 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

GERMAN SERIES.

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

STATIONS.	Barometer: Corrected for instru-m'tal error and temperature. Inches.	Barometer: Corrected for instru-m'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Berlin	30.06	763.5	30.23	767.8	51.6	10.9	48	NW			1		10			0.140	3.56	Raining	Prof. Arndt.
Breslau	29.71	754.6	30.24	768.2	46.0	7.8	82	WNW			3		10			0.100	2.53		Royal University Obs'y.
Carlsruhe	29.84	757.9	30.24	768.0	53.6	12.0	55	NE			1		0			0	0		Albert Senz.
Cassel	29.75	755.7	30.37	771.3	49.6	9.8	74	SSE			1		7	W		0	0		Dr. H. Möhl.
Crefeld	30.11	764.7	30.27	768.8	53 6	12.0	74	W			1		9			0	0		Director Lose.
Emden	30.21	767.4	30.25	768.3	51.8	11.0	86	SW			2		10			0	0		Prof. Prestel.
Frankfort on the Main	30.00	762.0	30.37	771.5	51.4	10.8		SSW			1		7			0	0		Physical Society.
Friedrichshafen	28.85	732.7	30.30	769.7	51.4	10.8	55	NW			4		0			0	0		M. Wilhelm.
Hamburg	30.16	766.0	30.23	767.8	51.8	11.0	77	WNW			2		6k			0.012	0.3	Fair	Captain F. Hegemann.
Kiel	30.16	766.0	30.17	766.4	50.5	10.3	76	W			4		6			0	0		Prof. G. Karsten.
Königsberg, (Prussia)	29.92	760.0	30.00	762.0	46.0	7.8	75	NW										Clear	Prof. E. Luther.
Köslin			30.08	764.0	46.6	8.1		Calm			0		3			0	0		H. Müller.
Leipsic, Observatory	29.90	759.4	30.33	770.3	49.6	9.8	64	W			3		9	W		0.079	2.0		Prof. Bruhns.
Memel, Naval School	29.89	759.1	29.93	760.3	45.3	7.4	73	NW			6		9ks						Reinbrecht von Skalweit.
Neufahrwasser	30.04	762.9	30.05	763.3	49.1	9.5	72	NW			3		2	W		0.024	0.6		A. Lothes.
Posen	29.91	759.7	30.21	767.3	46.6	8.1	67	NW			6–7		10					Covered	Dr. Magener.
Strassburg Obs., (in Alsace	29.74	755.5	30.31	769.8	50.5	10.3	67	NE			1		1			0.017	0.42		Dr. Schur.
Stuttgart	29.35	745.4	30.30	769.7	50.9	10.5	57	S			1		2	W		0	0		Prof. Schoder.
Treves, (Trier)	29.67	753.7	30.20	767.1	42.4	5.8	92	NE			1		10			0	0	Dense fog	Prof. Flesch.
Weissenburg, (Bavaria)	28.78	730.9	30.31	769.9	48.2	9.0	60	W	2	1			6k	W	W	0	0		Dr. Von Bebber.
Wustrow, Naval School	30.19	766.8	30.22	767.6	47.5	8.6	84	NNW			3		4					Fair	E. F. Schütz.
German Naval Series.																			

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

GREEK SERIES.

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

Athens	29.43	747.5	29.83	757.6	54.5	12.5		NE										Light rain	D. J. F. J. Schmidt.

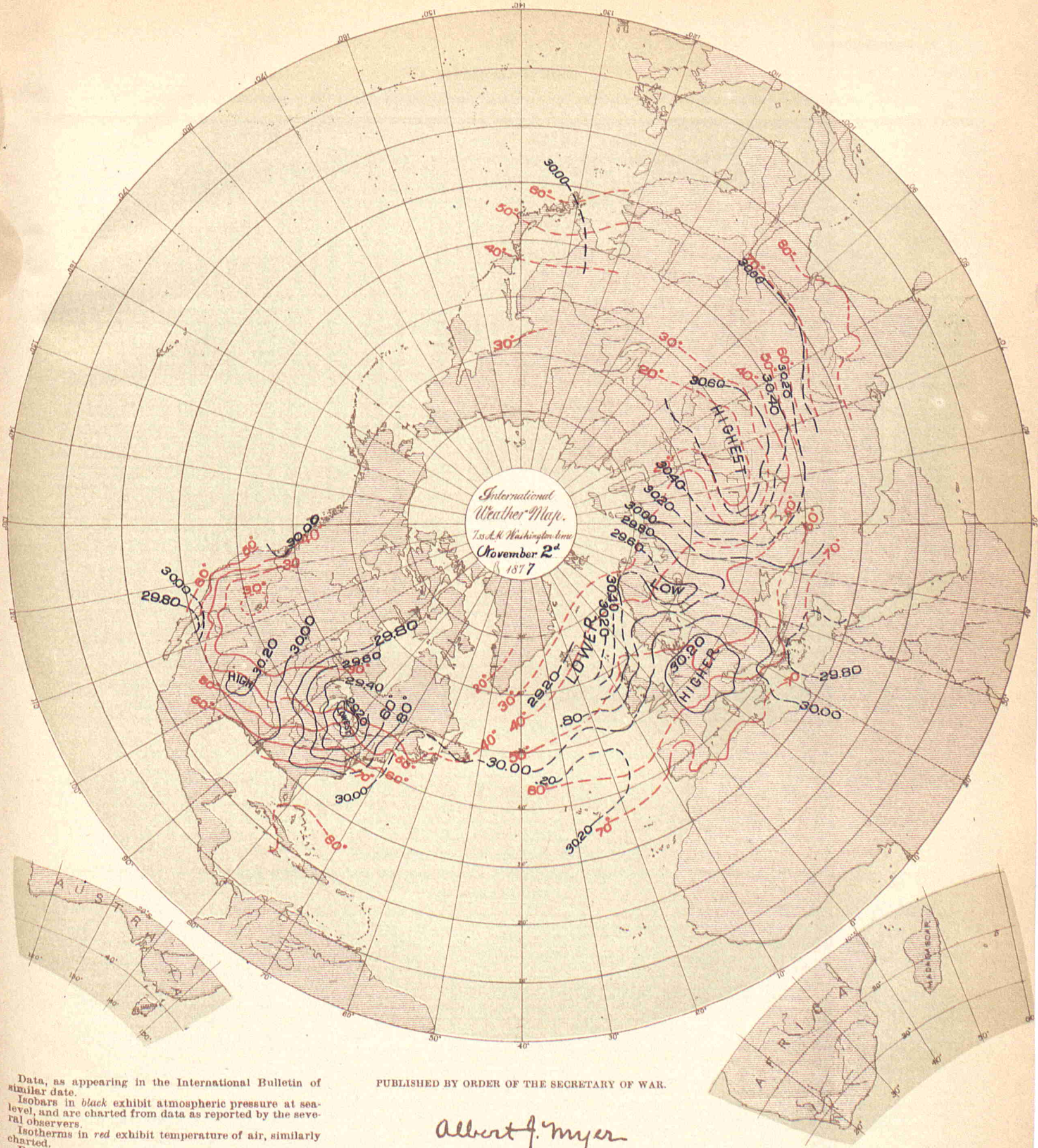
Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and wind-force. They omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

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

Kurrachee	29.87	758.7	29.92	760.0	82.8	28.2	69	WSW	22.0?	9.8?			0			0	0	Blue sky	
Deesa	29.45	748.1	29.93	760.1	86.8	30.4	24	Calm					0			0	0	Blue sky	
Bombay	29.81	757.1	29.85	758.1	84.4	29.1	68	NW	16.0	7.2			0			0	0	Blue sky	
Poona	27.91	708.8	29.91	759.6	80.7	27.1	57	E					4		S	0	0	D. clouds	
Lahore	29.17	740.9	29.92	760.0	73.8	23.2	47	Calm	1.2	0.5			2			0	0	Blue sky	
Belgaum	27.34	694.3	29.88	759.0	74.8	23.8	68	E	2.0	0.9			7	WNW	E	0	0	D. clouds	
Bangalore																			
Roorkee	28.98	736.2	29.89	759.2	77.4	25.2	41	Calm	1.3	0.6			0			0	0		
Agra	29.38	746.3	29.95	760.8	80.2	26.8	29	W								0	0		
Trichinopoly																			
Nagpur	28.85	732.8	29.90	759.4	78.1	25.6	49	Calm	3.2	1.4			3			0	0	D. clouds	
Madras																			
Lucknow	29.52	749.9	29.90	759.5	75.3	24.1	48	NW	0.9	0.4			0			0	0	Blue sky	
Allahabad	29.58	751.2	29.89	759.2	75.5	24.2	49	NW	0.7	0.3			0			0	0	Blue sky	
Patna	29.71	754.6	29.89	759.3	79.5	26.4	58	SE	0.9	0.4			8	W	W	0	0	D. clouds	
Hazaribagh	27.88	708.2	29.92	760.0	73.0	22.8	55	Calm	4.1	1.8			10			0	0	Overcast	
Cuttack	29.78	756.5	29.87	758.6	77.9	25.5	79	NE	3.3	1.5			0			0	0	Blue sky	
Calcutta (Alipore)	29.85	758.3	29.88	758.8	76.7	24.8	82	NE	0.5	0.2			3			0	0	D. clouds	
Goalpara	29.60	749.2	29.89	759.1	77.2	25.1	80	E	3.3	1.5			0			0	0	Blue sky	
Chittagong	29.81	757.2	29.90	759.6	81.4	27.4	81	Calm	0.7	0.3			10			0	0	Overcast	
Sibsagar	29.58	751.3	29.92	760.0	74.1	23.4	81	ENE	1.3	0.6			10	W	W	0	0	D. clouds	
Rangoon																			
Jubbulpore	28.54	725.0	29.91	759.8	79.9	26.6	45	NE	2.6	1.2			5	SW		0	0	D. clouds	

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



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

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

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

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

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

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

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

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instru-m'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Low'r 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Valdobbia	22.36	567.9	30.26	768.5	37.9	3.3	49	NW			2		0			0	0		Ab. Dom. Morgini.
Stelvio	22.32	566.8	30.26	768.7	30.6	— 0.8		ENE			1		0			0	0		Signora Ernesta Manfredi.
Udine	29.82	757.3	30.23	767.9	57.4	14.1	36	S	0.7	0.3			0			0.008	0.2		Prof. Giovanni Clodig.
Padua	30.10	764.6	30.22	767.5	60.6	15.9	38	SSE	7.4	3.3			0			0	0		Prof. Dott. Lorenzoni.
Vicenza	30.01	762.1	30.20	767.1	60.8	16.0	25	S	4.3	1.9			0			0	0		Conte Alm. Da Schio.
Verona	30.01	762.1	30.23	767.9	62.8	17.1	41	SW	0	0			0			0	0		Dott. B. Bertoncelli.
Bergamo																			Prof. Trionfini Carlo.
Domodossola	29.96	761.4	30.24	768.0	58.1	14.5	42	S			4		2			0	0		Prof. Giuseppe Calza
Milan	29.72	755.0	30.26	768.5	55.6	13.1		S			1		0			0	0		Ab. Gio. Capelli.
Pavia	29.89	759.3	30.25	768.3	51.8	11.0	75	N			1		0			0	0		Prof. Gio. Cantoni.
Moncalieri	29.33	745.0	30.26	768.6	56.3	13.5	59	NNW	0.7	0.3			0			0	0		Prof. P. F. Denza.
Mondovi	28.30	718.9	30.24	768.1	56.5	13.6	39	N			2		0			0	0		Prof. D. C. Bruno.
Porto Maurizio	30.04	763.1	30.27	768.8	62.2	16.8	55	E			2		1			0	0		Prof. L. Vassallo.
Genoa	30.07	763.7	30.24	768.0	66.9	19.4	38	SW	4.9	2.2			0			0	0		Prof. G. M. Garibaldi.
Piacenza	30.00	761.9	30.26	768.5	53.4	11.9	73	SW	2.5	1.1			0			0	0		Dott. G. Manzi.
Parma	29.89	759.3	30.22	767.5	61.5	16.4	51	ENE			4		0			0	0		Prof. P. Pigorini.
Florence	29.98	761.6	30.25	768.3	63.5	17.5	26	NW			2		0			0	0		Cav. F. Meucci.
Leghorn	30.15	765.9	30.24	768.1	61.9	16.6	46	W	5.6	2.5			0			0	0		Prof. P. Monte.
Siena	29.01	736.8	30.23	767.8	60.1	15.6	23	ENE	1.3	0.6			0			0	0		Prof. L. Toscani.
Urbino	28.70	729.0	30.28	769.1	54.5	12.5	39	ENE			2		0			0	0		Prof. P. Serpieri.
Pesaro	30.21	767.4	30.26	768.7	56.7	13.7	59	E	13.0	5.8			0			0	0		Prof. Luigi Guidi.
Ancona	30.15	765.7	30.26	768.5	60.4	15.8	37	ESE			4		0			0	0		Prof. F. DeBosis.
Grosseto	30.13	765.2	30.24	768.1	64.0	17.8	39	SSE			2		2	S		0	0		Avv. P. Ponticelli.
Rome	30.00	762.0	30.18	766.5	64.8	18.2	24	N	13.0	5.8			1			0	0		Prof. P. A. Secchi.
Naples, O. U.	29.96	761.0	30.17	766.2	63.7	17.6	23	NNE			6		2			0	0		Prof. L. Palmieri.
Lecce					58.8	14.9	53	N	24.8	11.1			3	N		0.276	7.0		Prof. C. De Giorgi.
Cosenza	29.20	741.6	30.10	764.6	60.3	15.7	66	NW	6.3	2.8			4			0	0		Prof. F. D. Conti.
Cagliari	29.95	760.6	30.14	765.5	66.0	18.9	66	S			2		0			0	0		Prof. A. Pacinotti.
Riposto, (Sicily)	29.95	760.6	29.99	761.8	65.7	18.7	44	N			6		2			0	0		Prof. F. Cafiero.
Palermo	29.81	757.2	30.07	763.7	63.5	17.5	49	NNE	10.5	4.7			1			0	0		Prof. G. Cacciatore.
Caltanissetta	28.08	713.1	30.03	762.8	60.4	15.8	41	N			6		1			0	0		Prof. A. Pagani.
Syracuse	29.92	760.0	30.00	761.9	64.4	18.0	65	NE			4		5	SW		0	0		Prof. V. Giuliano.
SUB-SERIES.																			
Naples, S. R.	29.63	752.5	30.18	766.6	59.5	15.3	24	SW	8.1	3.6			2			0	0		Prof. F. Brioschi.

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,548.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo, 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft; Siena, 348.5 m., or 1,143.3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft.

JAPANESE SERIES.

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

STATIONS.	Bar. corr. Inches.	Millimeters.	Red. Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	Wind From—	Miles per hour.	Meters per second.	Force.	Clouds Upper.	Lower.	Dir. Upper.	Dir. Lower.	Rain Inches.	Millimeters.	Weather.	Observer.
Tokei (Yeddo)																			The Observatory.
Tokei (Yeddo) University	29.80	756.9	29.90	759.5	48	89	92						3s			0	0	Clear	Prof. P. V. Veeder.

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

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

STATIONS.	Bar. corr. Inches.	Millimeters.	Red. Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	Wind From—	Miles per hour.	Meters per second.	Force.	Clouds Upper.	Lower.	Dir. Upper.	Dir. Lower.	Rain Inches.	Millimeters.	Weather.	Observer.
Aguascalientes																			I. N. Marin, M. D.
Córdoba																			C. Peña, M. D.
Cuernavaca																			L. Castillo, A. E.
Guadalajara																			Prof. L. Perez.
Guanajuato																			Prof. V. Fernandez.
Leon																			Prof. M. Leal.
Mexico	23.10	586.6	30.24	768 0	58.1	14.5	68	Calm	0	0		0	0			0	0	Fair	Central Observatory.
Orizaba																			N. N.
Orizaba																			I. Orozco, M. D.
Pabellon, (Aguascalts)																			M. V. de Leon, M. E.
Puebla																			Prof. B. Gonzalez.
Toluca																			Prof. C. Velazquez.
Tlacotalpam																			Prof. F. R. Bayly.
San Luis Potosí																			G. Barroeta, M. D.
Vera-Cruz																			Prof. J. Rossell.
Zacatecas																			J. A. Bonilla, M. E.

NOTE.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,290 m., or 7,512.9 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,921.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosí, 1,893 m. or 5,210.1 ft.; Zacatecas, [illegible] m., or 8,188.6 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

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

STATIONS.	Bar. corr. Inches.	Millimeters.	Red. Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	Wind From—	Miles per hour.	Meters per second.	Force.	Clouds Upper.	Lower.	Dir. Upper.	Dir. Lower.	Rain Inches.	Millimeters.	Weather.	Observer.
Flushing	30.20	768.5	30.26	768.5	52.5	11.4		S			3					0	0		
Groningen	30.17	766.3	30.23	767.7	50.7	10.4		SW			2					0.024	0.6		
Helder	30.19	766.8	30.19	766.8	52.9	11.6		WSW			2					0	0		
Hellevoetsluis			30.23	767.8	54.3	12.4	76	SSW			3								
Utrecht	30.21	767.2	30.25	768.4	54.1	12.3	70	SW			2		5			0	0	Cloudy	H. v d Brink.

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

NORWEGIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	29.85	758.2	29.91	759.6	47.5	8.6	87	S	16.3	7.3	.....	.....	10	.....	.....	0.937	23.8	.....	
Brönö	29.67	753.5	29.71	754.5	42.1	5.6	85	WSW	9	4	.....	.....	9	.....	.....	0.661	16.8	.....	
Christiania	29.77	756.1	29.92	759.9	44.5	7.1	69	W	0	0	.....	.....	5	.....	.....	0	0	.....	
Tromsö	29.56	750.8	29.60	751.9	36.9	2.7	74	Calm	0	0	.....	.....	10	.....	.....	0.177	4.5	Raining.....	
.....																			

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

PORTUGUESE SERIES.

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

Angra, (Azores)	30.06	763.5	30.25	768.3	64.8	18.2	90	E	8.7	3.9	.....	.....	4	.....	.....	0	0	.....	Dr. J. A. Sampaio.
Campo Major	29.13	739.8	30.12	765.1	74.3	23.5	49	ENE	4.3	1.9	.....	.....	8	.....	.....	0	0	.....	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.00	762.1	30.09	764.3	74.8	23.8	54	SW	5.6	2.5	.....	.....	0	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.79	756.7	30.15	765.7	68.9	20.5	73	SW	4.9	2.2	.....	.....	9	S	.....	0	0	Solar halo...	The Staff.
Ponta Delgada, (Azores)	30.15	765.7	30.22	767.5	65.8	18.8	83	NE	4.9	2.2	.....	.....	3	.....	.....	0.035	0.9	.....	
.....																			
.....																			

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

Naval Series. Vessels.	Sea or swell. Height scale 0–9	Sea or swell. Direction from—		
S. S. India.				A. D. Pedroso, Com'd't. Lt. S. A. P. de Mirando.
.....				
.....				

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

RUSSIAN SERIES.

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

Warsaw	29.64	752.8	30.07	763.7	45.3	7.4	69	WNW	13	6	.....	.....	4	.....	.....	.....	.....	.....	Astronomical Obs.
Wilna	29.44	747.7	29.86	758.5	43.9	6.6	96	NW	4	2	.....	.....	10	.....	.....	.....	.....	Raining.....	Astronomical Obs.
Dorpat	29.35	745.4	29.59	751.6	42.6	5.9	94	WNW	7	3	.....	.....	10	.....	.....	.....	.....	.....	Prof. Dr. Weihrauch.
St. Petersburg	29.64	752.9	29.66	753.3	42.4	5.8	84	SE	13	6	.....	.....	10	.....	.....	.....	.....	Light rain...	Central Physical Obs.
Kuopio	29.27	743.4	29.59	751.6	40.5	4.7	97	S	13	6	.....	.....	10	.....	.....	.....	.....	Raining.....	Ch. Forsten.
Kieff	29.32	744.7	29.96	760.9	47.7	8.7	76	WNW	4	2	.....	.....	8	.....	.....	.....	.....	.....	Physical Cabinet.
Nikolaiev	29.95	760.8	30.02	762.6	50.0	10.0	73	NE	4	2	.....	.....	10	.....	.....	.....	.....	.....	Kurdakof.
Kertch	29.95	760.7	29.97	761.2	54.0	12.2	94	N	4	2	.....	.....	10	.....	.....	.....	.....	.....	Lagorio.
Moscow	29.43	747.6	29.99	761.8	43.2	6.2	97	S	7	3	.....	.....	10	.....	.....	.....	.....	Light rain....	Meteorological Obs.
Lugan	29.72	755.0	29.93	760.2	52.5	11.4	87	SE	4	2	.....	.....	10	.....	.....	Blank	Blank	.....	Meteorological Obs.
Archangel	29.73	755.1	29.75	755.6	36.3	2.4	96	S	18	8	.....	.....	10	.....	.....	.....	.....	.....	Ogorodnikof.
Tiflis	28.71	729.2	30.13	765.2	57.4	14.1	77	Calm	0	0	.....	.....	9	.....	.....	.....	.....	.....	Physical Observatory.
Astrakhan	30.33	770.4	30.25	768.3	45.7	7.6	64	E	16	7	.....	.....	7	.....	.....	.....	.....	.....	Sebastianof.
Kasan	30.11	764.9	30.39	772.0	37.4	3.0	50	SSE	4	2	.....	.....	6	.....	.....	.....	.....	.....	Physical Cabinet.
Orenburg	30.26	768.6	30.67	779.0	20.5	— 6.4	66	N	7	3	.....	.....	5	.....	.....	.....	.....	.....	Tschernischef.
Ekaterinburg	29.49	749.1	30.48	774.1	36.5	2.5	46	W	4	2	.....	.....	3	.....	.....	.....	.....	.....	Meteorological Obs.
Nukuss	30.13	765.3	30.37	771.5	37.4	3.0	50	NE	9	4	.....	.....	1	.....	.....	.....	.....	.....	
Kasaly	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Bobrof.
Tashkend	28.71	729.2	30.50	774.6	39.9	4.4	82	S	2	1	.....	.....	10	.....	.....	.....	.....	.....	Michelson.
Barnaul	30.09	764.3	30.67	779.0	12.7	—10.7	76	SW	4	2	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Yeniseisk	30.20	767.0	30.55	776.0	12.4	—10.9	89	Calm	0	0	.....	.....	10	.....	.....	.....	.....	Snowing.....	Marks.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Usolzef.
Oorga	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Mossin.
Peking, (China)	30.05	763.3	30.19	766.9	42.1	5.6	52	Calm	0	0	.....	.....	2	.....	.....	.....	.....	.....	Physical Observatory.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nikolaievsk, on the Amoor	.....	.....	.....	.....	37.4	3.0	95	Calm	0	0	.....	.....	10n	.....	.....	.....	.....	Raining.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Ekaterinburg, 306.4? m., or 1,005.2? ft.; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft.

SPANISH SERIES.

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

Barcelona, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Rave, Director.
Bilbao, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Manuel de Na veran.
Burgos, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Domingo Martin y Pérez.
Madrid, Royal Observatory	27.93	709.3	30.09	764.2	72.1	22.3	49	SE	2.2	1.00	.....	0	2	.....	.....	0	0	Cloudy.....	The Staff.
Murcia, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Olayo Diaz, Director.
Santiago, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.90	759.5	29.97	761.2	75.8	24.3	88	Calm	0	0	.....	0	1k;s	.....	.....	0	0	Clear.....	Benito Vines, S. J.
San Fernando, Naval Obs'y.	30.05	763.4	30.15	765.8	75.6	24.2	55	ESE	19.0	8.5	.....	0	10	.....	SW	0	0	.....	Capt. C. Pajazon, R. N., Dir.
San Juan de Porto Rico, W. I.	.....	.....	29.86	758.5	79.9	26.6	91	S	0	0	.....	5cs	2kn	Calm	E	0.138	3.50	D. clouds.....	Leonardo de Tejeda, Chief of Engineers.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. m. instead of 8:19 a. m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.58	751.2	29.61	752.2	33.1	0.6	.....	N	.....	.....	2	.....	6	.....	.....	0.118	3.0	.....	
Umea	29.62	752.4	29.67	753.7	38.1	3.4	87	NW	.....	.....	2	.....	1	.....	.....	0.102	2.6	.....	
Hernosand	29.70	754.4	29.75	755.7	44.2	6.8	63	WNW	.....	.....	4	.....	0?	.....	.....	0.008	0.2	Raining?	
Stockholm	29.64	752.9	29.82	757.4	44.2	6.8	63	NNW	.....	.....	4	.....	2	.....	.....	0.276	7.0	.....	
Wisby	29.82	757.3	29.86	758.5	43.5	6.4	76	NW	.....	.....	6	.....	0	.....	.....	0.465	11.8	.....	
Sub-Series.																			
Upsala	29.76	755.9	29.81	757.8	44.1	6.7	70	NW	8.5	3.8	.....	.....	5	NW	.....	0.004	0.11	.....	Dr. Hildebrandsson.

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

SWISS SERIES.

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

Geneva	28.83	732.3	30.26	769.0	48.4	9.1	63	N	.....	.....	1	.....	1	.....	.....	0	0	Vapory	The Observatory.
Zurich	28.64	727.5	30.30	769.5	49.1	9.5	65	NE	.....	.....	1	.....	1	.....	.....	0	0	Clear	The Observatory.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—For Geneva the corresponding departures from the normal values are: Barometer, +6.2 mm; Thermometer, —0.2 cent.; Relative Humidity, —12 per cent.

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

TURKISH SERIES.

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

Constantinople	.....	.....	29.94	760.5	54.3	12.4	80	N	13	6.0	.....	.....	10	.....	NE	1.142	29.0	.....	The Observatory.
Fao, (Persian Gulf)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salonica	.....	.....	30.00	762.0	58.6	14.8	.....	NE	.....	.....	6	.....	10	.....	.....	Blank	Blank	.....	B. Stefanidès.
Valona	.....	.....	29.93	760.2	58.3	14.6	.....	NW	.....	.....	8	.....	2	.....	.....	0	0	Slightly cl'dy	A. Bertrand.
Varna	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Imperial Observatory.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'ty	29.81	757.2	29.93	760.1	76.5	24.7	56	SW	.....	.....	8	.....	10cs;n	.....	SW	0	0	D. clouds	Prof. C. V. A. Van Dyck

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

CANADIAN SERIES.

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

Bathurst, N. B	30.01	762.2	30.08	764.0	30.1	— 1.1	95	SW	4.5	2.0	.....	10	.....	.....	.....	0	0	.....	Hon. J. Ferguson.
Brockville, Ontario	.....	.....	29.55	750.6	40	4.4	.....	E	1	0.4	.....	.....	10s	.....	E	0.60	15.2	Light rain	W. R. Bigg.
*Chatham, N. B	.....	.....	30.10	764.5	30	— 1.1	96	Calm	0	0	.....	2ks	Haze	SW	Calm	0	0	Hazy	G. A. Blair.
Charlottetown, P. E. Island	.....	.....	30.14	765.5	37	2.8	96	Calm	0	0	.....	.....	10s	.....	Calm	0.055	1.40	Cloudy	H. J. Cundall, C. E.
Cornwall, Ontario	29.38	746.2	29.58	751.3	41.3	5.2	76	NE	.....	.....	3	.....	10n	.....	.....	0.752	19.10	Raining	James Smith, M. A.
Dalhousie, N. B	30.04	763.0	30.07	763.8	.....	.....	.....	E	.....	.....	1	.....	.....	.....	.....	0	0	Threatening	H. A. Johnson.
Esquimault, B. C	29.95	760.7	30.00	762.0	40.1	4.5	100	Calm	.....	.....	.....	.....	10	.....	.....	0.08	2.0	Cloudy	W. H. Bevis.
*Father Point, Quebec	.....	.....	30.00	762.0	35	1.7	90	S	6	2.7	.....	5k	5s	S	S	0	0	Threatening	J. McWilliams.
Fredericton, N. B	30.07	763.8	30.14	765.5	31.5	— 0.3	93	E	4	1.8	.....	0	8	.....	.....	0	0	Cloudy	Prof. Harrison.
*Fort Garry, Manitoba	.....	.....	29.91	759.7	24	— 4.4	95	N	9	4.0	.....	5k	5n	N	N	0	0	Cloudy	James Stewart.
Goderich, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	H. J. Strang, M. A
Granton, Ontario	28.00	711.2	29.08	738.6	47	8.3	85	SE	.....	.....	2	.....	10n	.....	.....	0.71	18.0	Cloudy	James Grant.
*Halifax, N. S	30.01	762.2	30.16	765.8	36	2.2	95	Calm	0	0	.....	.....	Fog	.....	.....	Inap.	Inap.	Foggy	F. Allison, M. A.
Hamilton, Ontario	28.80	731.5	29.16	740.7	52.5	11.4	81	SW	.....	.....	3	10ck	.....	SW	.....	0.50	12.7	Cloudy	Geo. Dickson, M. A
Heart's Content, N. F	29.92	760.0	29.95	760.7	38	3.3	76	NW	.....	.....	4	0	2ks	.....	NW	0.44	11.2	Fine	E. Weedon.
*Kingston, Ontario	29.10	739.1	29.43	747.5	43	6.1	89	SE	5	2.2	.....	.....	10n	.....	SE	0.31	7.9	Heavy rain	S. Woods, M. A.
Little Glace Bay, N. S	30.05	763.3	30.10	764.5	38.0	3.3	94	W	3	1.3	.....	4c	.....	W	.....	0	0	Fair	C. H. Rigby.
*Montreal, Quebec	29.50	749.3	29.70	754.4	40	4.4	73	SE	12	5.4	.....	.....	10n	.....	Calm	0	0	Cloudy	C. H. McLeod, C. E.
*Parry Sound, Ontario	28.55	725.2	29.24	742.7	34	1.1	95	E	16	7.2	.....	.....	10n	.....	E	0.50	12.7	Sleeting	Rev. R. Mosley.
Peterboro, Ontario	28.56	725.4	29 30	744.2	43.7	6.5	92	E	.....	.....	2	.....	10n	.....	.....	0.33	8.4	Raining	J. F. Jeffers, B. A.
Port Dover, Ontario	28.48	723.4	29.15	740.4	52	11.1	100	S	28	12.5	.....	.....	10n	.....	S	0.54	13.7	Light rain	H. Morgan.
Port Hastings, N. S	30.10	764.5	30.15	765.8	40.2	4.6	.....	W	4	1.8	.....	.....	.....	.....	.....	0.60	15.2	Fine	Peter Grant.
Port Stanley, Ontario	28.51	724.1	29.14	740.1	53	11.7	88	SW	36	16.1	.....	.....	10n	.....	SW	0.88	22.4	Cloudy	M. Payne.
*Quebec, Quebec	29.60	751.8	29.93	760.2	36	2.2	55	E	11	4.9	.....	.....	10n	.....	E	0.01	0.3	Cloudy	Capt. Ashe, R. N
*Rockliffe, Ontario	29.00	736.6	29.46	748.3	35	1.7	90	E	18	8.0	.....	.....	10n	.....	.....	0.10	2.5	Sleeting	W. H. McIntyre.
St. John, N. B	29.97	761.2	30.14	765.5	34	1.1	89	Calm	0	0	.....	.....	10s	.....	.....	1.26	32.0	Cloudy	G. Murdock, C. E.
*Saugeen, Ontario	28.41	721.6	29.11	739.4	40	4.4	91	E	10	4.5	.....	.....	10s	.....	.....	0.76	19.3	Light rain	K. Stewart.
Stayner, Ontario	.....	.....	29.12	739.6	42	5.6	100	SE	13	5.8	.....	.....	10n	.....	SE	0.63	16.0	Heavy rain	R. J. Cole.
Stratford, Ontario	27.86	707.6	29.12	739.6	42	5.6	99	SE	4.0	1.8	.....	.....	10n	.....	.....	.....	.....	Raining	C. J. MacGregor, M. A.
*Sydney, C. B	30.12	765.0	30.15	765.8	40	4.4	91	W	1	0.4	.....	5c	2s	NW	.....	0.20	5.1	Fair	T. C. Hill.
*Toronto, Ontario	28.80	731.5	29.17	740 9	46	7.8	96	E	14	6.3	.....	.....	10n	.....	E	0.70	17.8	Heavy rain.	Magnetic Observatory.
Windsor, N S	.....	.....	.....	.....	36.0	2.2	91	SW	0	0	.....	cs	10n	.....	.....	0	0	Fair	Prof. John E. Oram.
Woodstock, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Montgomery.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	37.5	3.1	76	SW	.....	.....	.....	5k	5s	.....	.....	0.30	7.6	Fair	John Delany
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

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

1877.—November 2.

UNITED STATES SERIES.

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

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

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.61	749.5	29.74	755.4	44	6.7	100	S	10	4.5	.....	.....	10n	.....	Calm	0.08	2.0	Light rain...	
Alpena, Michigan	28.59	726.2	29.22	742.2	30	3.9	100	SE	10	4.5	.....	.....	10n	.....	SE	0.73	18.5	Light rain...	
Atlantic City, New Jersey	29.72	754.9	29.74	755.4	58	14.4	87	S	29	13.0	.....	.....	10n	.....	S	0.03	0.8	Light rain...	
Augusta, Georgia	29.57	751.1	29.75	755.6	69	20.6	90	S	11	4.9	.....	.....	10s	.....	SW	0	0	Threatening	
Baltimore, Maryland	29.55	750.6	29.60	751.8	58	14.4	93	SE	22	9.8	.....	.....	10n	.....	SE	0.19	4.8	Light rain...	
Barnegat, New Jersey	29.73	755.1	29.75	755.6	56	13.3	90	SE	38	17.0	.....	.....	10n	.....	SE	0.10	2.5	Light rain...	
Bismarck, Dakota	28.11	714.0	29.84	757.9	25	— 3.9	88	NW	13	5.8	.....	.....	10s	.....	N	0.02	0.5	Cloudy.....	
Boise City, Idaho	27.26	692.4	29.99	761.7	28	— 2.2	77	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.....	
Boston, Massachusetts	29.78	756.4	29.94	760.5	47	8.3	70	SE	15	6.7	.....	.....	10s	.....	SW	0	0	Cloudy.....	
Brackettville, Texas	29.05	737.9	30.09	764.3	54	12.2	73	SW	9	4.0	.....	.....	10s	.....	Calm	0	0	Cloudy.....	
Breckenridge, Minnesota	28.82	732.0	29.85	758.2	26	— 3.3	83	N	10	8.5	.....	.....	10ks	.....	NW	0.04	1.0	Cloudy.....	
Brownsville, Texas	30.09	764.3	30.15	765.8	64	17.8	52	N	11	4.9	.....	.....	10n	.....	Calm	0.82	20.8	Light rain...	
Buffalo, New York	28.46	722.9	29.13	739.9	50.0	10.0	86	SE	17	7.6	.....	.....	10n	.....	SW	0.15	3.8	Light rain...	
Burlington, Vermont	29.53	750.0	29.79	756.7	43	6.1	59	S	6	2.7	.....	.....	10s	.....	Calm	0	0	Cloudy.....	
Cairo, Illinois	29.47	748.5	29.87	758.7	46	7.8	76	W	9	4.0	.....	1k	0	N	.....	0.72	18.3	Clear	
Camp Grant, Arizona	25.26	641.6	30.06	763.5	50	10.0	13	N	.....	.....	2	0	0	.....	.....	0	0	Clear.	
Camp Verde, Arizona	26.91	683.5	30.40	772.1	30	— 1.1	57	W	.....	.....	.....	0	0	.....	.....	0	0	Clear.	
Campo, California	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Cape Hatteras, N. Carolina	29.80	756.9	29.81	757.2	70	21.1	75	SE	25	11.2	.....	5k	5s	SW	SW	0	0	Cloudy.....	
Cape Henry, Virginia	29.73	755.1	29.75	755.6	67	19.4	79	SE	32	14.3	.....	.....	10s	.....	S	Inap.	Inap.	Cloudy.....	
Cape Lookout, N. Carolina	29.86	758.4	29.88	758.9	73	22.8	85	S	34	15.2	.....	.....	10ks	.....	SW	0	0	Cloudy.....	
Cape May, New Jersey	29.68	753.9	29.71	754.6	60	15.6	81	SE	36	16.1	.....	.....	10s	.....	SE	0.08	2.0	Threatening	
Charleston, South Carolina	29.80	756.9	29.87	758.7	74	23.3	95	S	12	5.4	.....	2cs	8s	W	S	0	0	Cloudy.....	
Cheyenne, Wyoming	24.01	609.8	29.95	760.7	22	— 5.6	72	NW	4	1.8	.....	0	0	.....	.....	0	0	Clear.....	
Chicago, Illinois	28.76	730.5	29.45	748.0	36	2.2	90	W	14	6.3	.....	.....	10s	.....	Calm	1.02	25.9	Cloudy.....	
Cincinnati, Ohio	28.86	733.0	29.48	748.8	48	8.9	78	NW	10	4.5	.....	0	9ks	.....	W	0.40	10.2	Cloudy.....	
Cleveland, Ohio	28.58	725.9	29.27	743.4	51	10.6	64	SW	32	14.3	.....	.....	10s	.....	SW	0.05	1.3	Cloudy.....	
Concho, Texas	28.26	717.8	29.98	761.5	46	7.8	68	NE	6	2.7	.....	8c	0	NE	.....	0	0	Cloudy.....	
Corsicana, Texas	29.67	753.6	30.16	766.1	47	8.3	85	N	3	1.3	.....	Haze	8s	Calm	N	0.60	15.2	Cloudy.....	
Davenport, Iowa	28.94	735.1	29.57	751.1	37	2.8	80	W	16	7.2	.....	.....	10s	.....	Calm	0.32	8.1	Cloudy.....	
Denison, Texas	29.34	745.2	30.16	766.1	42	5.6	91	NW	6	2.7	.....	.....	10ks	.....	NW	0.47	11.9	Cloudy.....	
Denver, Colorado	24.81	630.2	30.03	762.7	25	— 3.9	88	S	4	1.8	.....	0	0	.....	.....	0	0	Clear.	
Detroit, Michigan	28.53	724.6	29.17	740.9	43	6.1	83	W	16	7.2	.....	5cs	5s	W	W	0.81	20.6	Cloudy.....	
Dodge City, Kansas	27.47	697.7	29.88	758.9	28	— 2.2	88	NW	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Dubuque, Iowa	28 81	731.8	29.51	749.5	36	2.2	90	W	6	2.7	.....	.....	10n	.....	Calm	0.60	15.2	Light rain...	
Duluth, Minnesota	28.82	732.0	29.50	749.3	33	0.6	89	NE	26	11.6	.....	.....	10ks	.....	NE	0.08	2.0	Threatening	
Eagle Pass, Texas	29.43	747.5	30.18	766.6	56	13.3	62	Calm	0	0	.....	.....	10s	.....	Calm	0.05	1.3	Cloudy.....	
Eastport, Maine	30.02	762.5	30.09	764.3	42	5.6	74	E	3	1.3	.....	.....	10s	.....	Calm	0	0	Cloudy.....	
Erie, Pennsylvania	28.44	722.4	29.11	739.4	56	13.3	93	SW	16	7.2	.....	.....	10n	.....	SW	0.22	5.6	Light rain...	
Escanaba, Michigan	28.71	729.2	29.35	745.5	34	1.1	100	NW	5	2.2	.....	.....	10n	.....	Calm	0.32	8.1	Light snow..	
Florence, Arizona	28.49	723.6	30.09	764.3	40	4.4	56	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Fort Bayard, New Mexico	24.12	612.6	30.12	765.0	29	— 1.7	59	NW	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Fort Craig, New Mexico	25.68	652.3	.....	.....	25	— 3.9	75	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Fort Gibson, Indian Ter	29.54	750.3	30.10	764.5	39	3.9	81	NW	4	1.8	.....	2c	5s	W	W	0.75	19.1	Fair	
Fort Griffin, Texas	28.93	734.8	30.25	768.3	44	6.7	75	W	2	0.9	.....	.....	10s	.....	Calm	0.01	0.3	Cloudy	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	28.94	735.1	30.09	764.3	40	4.4	82	N	4	1 8	.....	.....	10s	.....	W	0.08	2.0	Cloudy.....	
Galveston, Texas	30.04	763.0	30.08	764.0	60	15.6	65	N	32	14.3	.....	5ck	5s	W	W	0.68	17.3	Cloudy.....	
Grand Haven, Michigan	28.70	729.0	29.34	745.2	37	2.8	100	N	4	1.8	.....	.....	10n	.....	Calm	0.70	17.8	Light rain...	
Indianapolis, Indiana	30.15	765.8	30.18	766.6	59	15.0	62	N	26	11.6	.....	10k	0	N	.....	0.49	12.4	Cloudy	
Indianola, Texas	28.80	731.5	29.57	751.1	41	5.0	73	W	14	6.3	.....	.....	10s	.....	W	0.66	16.8	Threatening	
Jacksboro, Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Jacksonville, Florida	29.90	759.4	29.92	760.0	72	22.2	90	SW	8	3.6	.....	0	Haze	.....	SW	0	0	Clear.	
Keokuk, Iowa	29.04	737.6	29.65	753.1	39	3.9	71	W	12	5.4	.....	.....	10s	.....	W	0.30	7.6	Cloudy	
Key West, Florida	29.93	760.2	29.96	761.0	78.5	25.8	77	E	3	1.3	.....	5k	0	E	.....	0.02	0.5	Fair	
Kittyhawk, North Carolina	29.80	756.9	29.82	757.4	67	19.4	84	S	36	16.1	.....	.....	10s	.....	SW	0	0	Cloudy.....	
Knoxville, Tennessee	28.66	728.0	29.62	752.3	58	14.4	75	SW	16	7.2	.....	.....	10ks	.....	SW	2.09	53.1	Cloudy.....	
La Crosse, Wisconsin	28.75	730.2	29.48	748.8	38	3.3	91	W	5	2.2	.....	.....	10n	.....	W	0.21	5.3	Light rain...	
La Mesilla, New Mexico	26.21	665.7	30.36	771.1	28	— 2.2	43	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Laredo, Texas	.....	.....	.....	.....	59	15.0	76	NW	4	1.8	.....	10ck	0	S	.....	0	0	Cloudy.....	
Leavenworth, Kansas	29.06	738.1	29.92	760.0	38	3.3	71	NW	11	4.9	.....	0	0	.....	.....	Inap.	Inap.	Clear	
Los Angeles, California	29.68	753.9	30.02	762.5	55	11.7	43	N	7	3.1	.....	0	0	.....	.....	0	0	Clear	
Louisville, Kentucky	29.10	739.1	29.65	753.1	47	8.3	76	SW	24	10.7	.....	.....	10s	.....	W	0.59	15.0	Cloudy.....	
Lynchburg, Virginia	28.88	733.5	29.52	749.8	64	17.8	83	SW	14	6.3	.....	.....	10ks	.....	SW	0.67	17.0	Cloudy.....	
Maricopa Wells, Arizona	.....	.....	.....	.....	33	0.6	52	N	.....	.....	.....	0	0	.....	.....	0	0	Clear.....	
Marquette, Michigan	28.62	726.7	29.31	744.5	35	1.7	80	W	2	0.9	.....	.....	10n	.....	Calm	0.02	0.5	Light snow..	
Mason, Texas	28.54	724.9	30.39	771.9	46	7.8	69	NW	4	1.8	.....	.....	10s	.....	.....	0	0	Cloudy.....	
Memphis, Tennessee	29.65	753.1	29 97	761.2	47	8.3	77	W	9	4.0	.....	5c	2ks	SW	SW	1.21	30.7	Fair	
Milwaukee, Wisconsin	28.78	731.0	29.47	748.5	33	0.6	100	W	14	6.3	.....	.....	10n	.....	.....	0.62	15.7	Light snow..	
Mobile, Alabama	29.88	758.9	29.92	760.0	66	18.9	90	NW	6	2.7	.....	.....	10s	.....	NW	0.31	7.9	Cloudy.....	
Montgomery, Alabama	29.62	752.3	29.85	758.2	64	17.8	81	NW	12	5.4	.....	.....	10s	.....	NW	0.32	8.1	Cloudy.....	
Morgantown, West Virginia	28.31	719.1	29.30	744.2	58	14.4	93	SW	9	4.0	.....	.....	10n	.....	SW	0.62	15.7	Light rain..	
Mt. Washington, N. H.	23.51	597.1	29.87	758.7	30	— 1.1	100	S	75	33.5	.....	.....	10n	.....	S	0.03	0.8	Light snow..	
Nashville, Tennessee	29.29	744.0	29.82	757.4	52	11.1	66	W	12	5.4	.....	.....	10s	.....	W	1.70	43.2	Cloudy.....	
New Haven, Connecticut	29.65	753.1	29.76	755.9	54	12.2	79	SE	20	8.9	.....	.....	10s	.....	SE	0	0	Cloudy.....	
New London, Connecticut	29.86	758.4	29.90	759.4	52	11.1	86	SE	32	14.3	.....	.....	10n	.....	S	Inap.	Inap.	Light rain...	
New Orleans, Louisiana	29.90	759.4	29.96	761.0	64	17.8	73	N	20	8.9	.....	.....	9ks	.....	N	0.91	23.1	Cloudy.....	
Newport, Rhode Island	29.89	759.2	29.94	760.5	52	11.1	73	SE	14	6.3	.....	.....	10s	.....	SE	0	0	Threatening	
New York, New York	29.59	751.6	29.76	755.9	53	11.7	86	SE	22	9.8	.....	.....	10n	.....	SE	0.11	2.8	Light rain ..	
Norfolk, Virginia	29.67	753.6	29.73	755.1	65	18.3	89	S	26	11.6	.....	.....	10s	.....	S	0	0	Threatening	
North Platte, Nebraska	27.12	688 8	29.83	757.7	22	— 5.6	85	NW	12	5.4	.....	0	0	.....	.....	Inap	Inap.	Clear.....	
Olympia, Washington Ter.	29.91	759.7	29.94	760.5	40	4.4	91	Calm	0	0	.....	.....	Fog	.....	Calm	0	0	Foggy	
Omaha, Nebraska	28.78	731.0	29.88	758.9	36	2.2	70	NW	20	8.9	.....	Haze	2s	Calm	NW	0.20	5.1	Clear.	
Oswego, New York	29.08	738.6	29.39	746.5	45	7.2	84	SE	26	11.6	.....	.....	10n	.....	Calm	0.21	5.3	Light rain...	
Pembina, Dakota	29.03	737.3	29.90	759.4	25	— 3.9	68	NW	12	5.4	.....	.....	10s	.....	Calm	0	0	Cloudy.....	
Philadelphia, Pennsylvania	29.63	752.6	29.68	753.9	54	12.2	93	SE	25	11.2	.....	.....	10n	.....	SE	0.08	2.0	Light rain...	
Phœnix, Arizona	.....	.....	.....	.....	36	2.2	53	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear.	
Pike's Peak, Colorado	17.67	448.8	29.88	758.9	4	—15.6	48	N	50	22.4	.....	0	0	.....	.....	0	0	Clear	
Pioche, Nevada	24.13	612.9	29.90	759.4	28	— 2.2	89	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Pittsburg, Pennsylvania	28.47	723.1	29.22	742.2	59	15.0	94	S	10	4.5	.....	.....	10n	.....	SW	0.30	7.6	Light rain...	
Port Huron, Michigan	28.49	723.6	29.13	739.9	44	6.7	92	W	12	5.4	.....	.....	10ks	.....	W	0.72	18.3	Threatening	
Portland, Maine	29.93	760.2	29.98	761.5	50	10.0	72	SE	9	4.0	.....	8cs;k	2s	Calm	Calm	0	0	Cloudy.....	
Portland, Oregon	29.98	761.5	30.08	764.0	42	5.6	91	Calm	0	0	.....	.....	10s	.....	Calm	0	0	Cloudy.....	
Prescott, Arizona	24.95	633.7	30.31	769.9	27	— 2.8	76	SE	.....	.....	.....	0	0	.....	.....	0	0	Clear.	
Punta Rassa, Florida	29.97	761.2	29.98	761.5	75	23.9	85	W	4	1.8	.....	0	0	.....	.....	0	0	Clear.	
Red Bluff, California	29.74	755.4	30.10	764.5	50	10.0	65	N	6	2.7	.....	.....	10n	.....	.....	Inap.	Inap.	Light rain...	
Rochester, New York	28.66	728.0	29.24	742.7	47	8.3	85	S	28	12.5	.....	.....	10n	.....	S	0.27	6.9	Heavy rain..	
Roseburg, Oregon	29.47	748.5	30.04	763.0	46	7.8	96	Calm	6	0	.....	.....	10n	.....	Calm	0.07	1.8	Light rain...	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	BAROMETER. Corrected for instrum'tal error and temperature. Inches.	Millimeters	Reduced to sea-level. Inches.	Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	Low'r 0—10.	Direction. Upper. From—	Lower. From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	Millimeters.	WEATHER.	OBSERVER.
Sacramento, California	30.01	762.2	30.09	764.3	44	6.7	75	NW	2	0.9	.....	0	0	.....	.....	0	0	Clear	
St. Louis, Missouri	29.16	741.2	29.76	755.9	42	5.6	74	W	21	9.4	.....	0	5s	.....	W	1.13	28.7	Fair	
St. Marks, Florida	29.87	758.7	29.88	758.9	74	23.3	95	SW	8	3.6	.....	0	8s	.....	SW	0	0	Fair	
St. Paul, Minnesota	28.72	729.5	29.56	750.8	33	0.6	89	NW	16	7.2	.....	.....	10n	.....	NW	0.34	8.6	Light snow	
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salt Lake City, Utah	25.76	654.3	30.09	764.3	35	1.7	70	E	4	1.8	.....	0	0	.....	.....	0	0	Clear	
San Antonio, Texas	29.50	749.3	30.10	764.5	54	12.2	67	N	1	0.4	.....	5ck	0	NW	.....	0.04	1.0	Fair	
San Diego, California	29.97	761.2	30.04	763.0	63	11.7	48	NE	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Sandusky, Ohio	28.63	727.2	29.28	743.7	47	8.3	85	W	26	11.6	.....	.....	10ks	.....	W	0.42	10.7	Cloudy	
Sandy Hook, New Jersey	29.72	754.9	29.74	755.4	55	12.8	93	SE	24	10.7	.....	.....	10n	.....	SE	0.10	2.5	Light rain	
San Francisco, California	30.01	762.2	30.08	764.0	52	11.1	86	Calm	0	0	.....	0	Sm'e	.....	.....	0	0	Smoky	
Santa Fé, New Mexico	23.32	592.3	29.86	758.4	27	— 2.8	67	NE	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Savannah, Georgia	29.78	756.4	29.87	758.7	72	22.2	90	SW	9	4.0	.....	.....	10ks	.....	SW	0	0	Threatening	
Shreveport, Louisiana	29.91	759.7	30.13	765.3	51	10.6	72	N	6	2.7	.....	.....	10s	.....	S	0.71	18.0	Cloudy	
Smithville, North Carolina	29.83	757.7	29.86	758.4	73	22.8	85	S	18	8.0	.....	8ck	0	SW	.....	0	0	Cloudy	
Springfield, Massachusetts	29.66	753.4	29.79	756.7	46	7.8	76	SE	4	1.8	.....	.....	10s	.....	SE	lnap	lnap.	Cloudy	
Stanwix, Arizona	.....	.....	.....	.....	31	— 0.6	41	NE	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Stockton, Texas	27.12	688.8	30.12	765.0	42	5.6	75	S	4	1.8	.....	.....	10s	.....	S	0	0	Cloudy	
Thatcher's Island, Mass	29.91	759.7	29.97	761.2	50	10.0	78	S	24	10.7	.....	10cs;k	0	SW;S	.....	0	0	Threatening	
Toledo, Ohio	28.62	726.9	29.27	743.4	45	7.2	76	W	20	8.9	.....	.....	10s	.....	W	0.82	20.8	Cloudy	
Tucson, Arizona	27.60	701.0	30.15	765.8	35	1.7	52	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Tybee Island, Georgia	29.83	757.7	29.86	758.4	72	22.2	90	S	12	5.4	.....	5ck	5ks	W	SW	0	0	Cloudy	
Umatilla, Oregon	29.78	756.4	.....	.....	24	— 4.4	72	SW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Vicksburg, Mississippi	29.81	757.2	30.07	763.8	54	12.2	80	NW	12	5.4	.....	5c	0	W	.....	2.50	63.5	Fair	
Virginia City, Montana	24.30	617.2	29.78	756.4	22	— 5.6	72	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Visalia, California	29.75	755.6	30.14	765.5	35	1.7	80	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Washington, D. C.	29.46	748.3	29.55	750.6	60	15.6	97	S	3	1.3	.....	.....	10n	.....	S	0.41	10.4	Light rain	
Wickenburg, Arizona	.....	.....	.....	.....	31	— 0.6	38	W	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Wilmington, N. Carolina	29.76	755.9	29.84	757.9	73	22.8	85	SW	16	7.2	.....	2ck	2s	W	SW	0	0	Fair	
Winnemucca, Nevada	25.70	652.8	30.06	763.5	21	— 6.1	71	N	7	3.1	.....	0	0	.....	.....	0	0	Clear	
Wood's Holl, Mass	29.94	760.5	30.00	762.0	51	10.6	93	SE	12	5.4	.....	.....	10s	.....	SE	0	0	Cloudy	
Yankton, Dakota	28.65	727.7	29.99	761.7	30	— 1.1	89	NW	14	6.3	.....	0	5s	.....	NW	0.04	1.0	Fair	
Yuma, Arizona	29.91	759.7	30.08	764.0	49	9.4	37	NE	1	0.4	.....	0	0	.....	.....	0	0	Clear	
SUB-SERIES.																			
York Factory, B. A.	29.81	757.2	29.86	758.4	22.5	— 5.3	93	N	21	9.4	.....	.....	10n	.....	.....	0.07	1.8	Snowing	J. Fortescue, W. Wood
Havana, Cuba, W. I.	29.91	759.7	29.93	760.2	78	25.6	82	SE	24	1.1	.....	0	0	.....	.....	0	0	Clear	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.07	763.8	30.08	764.0	78	25.6	82	Calm	0	0	.....	2c	2s	SE	SE	0.17	4.3	.....	James Gall.
Navassa, W. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. M. Everett.
St. Thomas, W. I.	.....	.....	.....	.....	82	27.8	79	NE	1	0.4	.....	5c	4k	E	.....	0	0	Cloudy	G. O. Gellich.
Paramaribo, D. Guiana, S. A.	.....	.....	30.01	762.2	82	27.8	83	E	.....	.....	2	5ck	5ck	E	.....	0	0	Fair	C. J. Hering.
Batavia, Dutch Guiana, S. A.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Dr. H. Groot.
Medellin, Colombia, S. A.	25.17	639.3	.....	.....	67.0	19.4	84	Calm	.....	.....	0	.....	10ks	.....	.....	0	0	Cloudy	Thomas Herran.
Honolulu, Oahu, H. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Daniel Smith.
Makawao, Maui, H. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,000 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,295 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.8 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.93 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in. Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observaion.

UNITED STATES NAVAL SERIES.

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

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

STATIONS AND VESSELS.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard Mare Island, Cal.	30.06	763.5	49	9.4	49	9.4	63	E	7	3.1	.....	.....	8	.....	S&E	0	0	.....	.....	Threatening	
Navy Yard, Pensacola, Fla.	29.99	761.7	.....	.....	70	21.1	95	NW	7	3.1	.....	.....	9	.....	NW	0.42	10.7	.....	.....	D. clouds	
Navy Yard, Portsmouth, N.H	29.87	758.7	63	17.2	48	8.9	85	S	5	2.2	.....	.....	10	.....	.....	0	0	.....	.....	Cloudy	
Naval Hospital, Yokohama, Japan	29.84	757.9	57	13.9	51	10.6	86	Calm	.....	.....	0	.....	5k	.....	WSW	0	0	.....	.....	Clearing	
Adams. S. 37° 47′ 26″, W. 56° 36′ 13″	29.84	757.9	67	19.4	59	15 0	94	WNW	.....	.....	1	.....	1	.....	W	Light	Light	Light	NW	D. clouds	
Alert, Obru Channel, Japan	30.11†	764.8†	63	17.2	63	17.2	78	NNE	.....	.....	2	.....	0	.....	.....	.....	.....	Smooth	.....	Blue sky	
Alliance, Constantinople, Turkey.	30.01	762.2	61	16.1	56	13.3	??	NE	.....	.....	1–2	.....	10	.....	NE	.....	.....	.....	.....	Overcast	
Ashuelot. Tientsin, China	30.25	768.3	50	10.0	44	6.7	68	SSE	.....	.....	1	.....	1	.....	Calm	.....	.....	Smooth	.....	D. clouds	
Canonicus, New Orleans, La	29.97	761.2	49	9.4	63	17.2	72	NW	.....	.....	4	.....	8	.....	N&W	.....	.....	.....	.....	Cloudy	
Colorado, New York, N. Y.	29.85	758 2	70	21.1	54	12.2	87	S	18	8.0	.....	.....	10	.....	SSW	0.01	0.3	.....	.....	Raining	
Despatch, Constantinople, Turkey.	30.08	764.0	88	31.1	57	13.9	81	NE	.....	.....	3	.....	10	.....	N&E	.....	.....	.....	.....	Rainy	
Franklin, Norfolk, Va	29.85	758.2	64	17.8	68	20.0	79	SSE	19.5	8.7	.....	.....	8	.....	SSE	0.5	13.	.....	.....	Raining	
Gettysburg, Syracuse, Sicily	29.89‡	759.2‡	.....	.....	69	20.6	100	NNE	.....	.....	2	.....	2	.....	Calm	0	0	.....	.....	D. clouds	
Guard, N. 41° 05′, W. 70° 48′	30.10	764.5	58	14.4	53	11.7	80	SSE	.....	.....	5	.....	10	.....	S	.....	.....	Moderate.	SSE	D. clouds	
Lackawana, Port Townsend, W. T.	30.00	762.0	.....	.....	48	8.9	78	S	.....	.....	0–1	.....	8	.....	.....	.....	.....	.....	.....	Showery	
Marion, Smyrna, Turkey	29.81	757.2	65	18.3	63	17.2	94	S&E	.....	.....	1–2	.....	7	.....	Calm	Heavy	Heavy	Smooth	.....	D. clouds	
Michigan, Erie, Pa	28.66	728.0	56	13.3	56	13.3	57	SSW	.....	.....	6	.....	10	.....	SW	.....	.....	.....	.....	Raining	
Monocacy, Yokohama, Japan	29.83	757.7	57	13.9	53	11.7	86	NW	.....	.....	2	.....	4	.....	NW	.....	.....	.....	.....	D. clouds	
Monongahela, Gibraltar, Spain	30.22	767.6	70	21.1	70	21.1	80	WNW	.....	.....	1–2	.....	k	.....	.....	.....	.....	Smooth	.....	D. clouds	
New Hampshire, Port Royal, S.C.	30.04	763.0	.....	.....	73	22.8	95	SSW	29	13.0	.....	.....	8	.....	SW	0	0	.....	.....	D. clouds	
Omaha, S. 18° 20′, W. 77° 35′	30.10	764.5	69	20.6	67.5	19.7	97	E	12	5.4	.....	.....	10	.....	E	0	0	Smooth	.....	Cloudy	
Onward, Callao, Peru	30.04	763.0	70	21.1	68	20.0	84	SE	.....	.....	2	.....	10	.....	.....	.....	.....	Long	W	Hazy	
Ossipee, Hampton Roads, Va	29.76	755.9	68	20.0	67	19.4	79	S	.....	.....	6–7	.....	10	.....	SSW	.....	.....	.....	.....	Squally	
Palos, Shanghai, China	30.14	765.5	61	16.1	57	13.9	94	NNE	.....	.....	2	.....	4	.....	Calm	.....	.....	.....	.....	Cloudy	
Pensacola, Mare Island, Cal.	30.17	766 3	.....	.....	52	11.1	66	Var.	.....	.....	1	.....	2	.....	.....	0	0	.....	.....	.....	
Plymouth, Norfolk, Va	29.78	756.4	67	19.4	66	18.9	94	SSE	.....	.....	3–5	.....	10	.....	SE	.....	.....	.....	.....	Squally	
Ranger, Shanghai, China	30.24	768.1	.....	.....	59	15.0	94	E	.....	.....	1	.....	10	.....	Calm	.....	.....	.....	.....	Cloudy	
Rio Bravo, Brownsville, Texas	30.02	762.5	.....	.....	60	15.6	76	NNW	.....	.....	3	.....	10	.....	S	.....	.....	.....	.....	Raining	
Santee, Annapolis, Md.	29.67	753.6	59	15.0	59	15.0	100	SE	.....	.....	7	.....	10	.....	S&E	0.32	8.1	.....	.....	Raining	
Saratoga, Hampton Roads, Va	30.31†	769.9†	.....	.....	68	20.0	84	SE	.....	.....	5	.....	5	.....	SE	Blank	Blank	.....	.....	Cloudy	
St. Louis, League Island, Pa	29.65	753.1	53	11.7	51	10.6	93	SE	23	10.3	.....	.....	10	.....	SE	0.05	1.3	.....	.....	Raining	
Swatara, Hampton Roads, Va	29.76	755.9	.....	.....	67	19.4	84	S	.....	.....	6	.....	10	.....	S	.....	.....	.....	.....	D. clouds	
Tennessee, Yokohama, Japan	29.94	760.5	65	18.3	56	13.3	87	N	2	0.9	.....	.....	8	.....	N&W	0	0	None	.....	Hazy	
Trenton, Villefranche, France	30.29	769.4	70	21.1	70	21.1	70	E	7	3.1	.....	.....	1	.....	E	0	0	.....	.....	D. clouds	
Vandalia, Villefranche, France.	30.28	769.1	67	19.4	67	19.4	55	ESE	.....	.....	1	.....	0	.....	.....	.....	.....	.....	.....	Blue sky	
Wabash, Boston, Mass.	29.94	760.5	50	10.0	49	9.4	78	S	11	4.9	.....	.....	7	.....	S	0	0	.....	.....	D. clouds	
Wyoming, Washington, D. C.	30.14†	765.5†	60	15.6	60	15 6	.....	SE	.....	.....	4	.....	10	.....	N	.....	.....	.....	.....	Drizzling	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the hourly. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. ‡ Barometer corrected for instrumental error and reduced to sea-level.

UNITED STATES MARINE SERIES.

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

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Character.	Direction from—		
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama, N. 29° 03′ 11″, W. 116° 46′ 15″			29.81	757.2	66	18.9	84	NNE			4		6		NE	Light	NW	Fine	Capt. Howard.
S. S. City of Peking, Yokohama, Japan			30.01*	762.2*	54	12.2	87	NNW			3		5		NE	Smooth		Lightning	Lt. Z. L. Tanner, U.S.N.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio																			Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

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

WHITE STAR LINE MARINE SERIES.

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

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

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

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

S. S. Belgic, N. 30° 38′, W. 168° 13′			30.14†	765.5†				E			3		c		SW	Long	WNW	Fine	Capt. John Metcalf.
S. S. Gaelic																			Capt. W. H. Kidley.
S. S. Oceanic																			Capt. H. Parsell

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

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

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

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig																			Capt. K. Undütsch.
S. S. Nürnberg, N. 37° 1′, W. 76° 14′			29.71	754.6	70.0	21.1	85	SSE			6		k		S	Rough	SE	Raining	Capt. A. Jaeger.
S. S. Ohio, N. 53° 53′, E. 6° 42′			30.25	768.3	52.0	11.1	100	SW			3		k		SW	Light	SW	Hazy	Capt. G. Meyer.

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

UNITED STATES MARINE SERIES.—Continued.

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

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Lo'wr	Upper.	Lower.	Character	Direction From—		
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second	0—10.	0—10.	0—10.	From—	From—				
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana. Philadelphia, Pa			29.63*	752.6*	55	12.8	80	NE			3		2		NE				Captain Sargent.
S. S. Ohio. N. 39° 42′, W. 71° 19′			29.99	761.7	59	15.0	88	SSE			5		10?		Calm	Small	S	Clear?	Captain Morrison.
S. S. Pennsylvania, N. 51° 11′, W. 15° 15′			29.85†	758.2†	53	11.7	93	NW			4		3		NW	Moderate.	WNW	Clear	Captain Harris.

Note.—The originals give the barometer as read off; the wind-force by the scale 0 to 12. *Aneroid; correction for elevation applied, instrumental error not known.
†Corrected for temperature and elevation, instrumental error not known.

RED STAR LINE MARINE SERIES.

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

S. S. Nederland																			Capt. Randle.
S. S. Switzerland, N. 49° 42′, W. 12° 57′			30.17*	766.3*	56	13.3		NNW	30	13.4			4		NNW	Moderate	S	D. clouds	Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

* Aneroid; regulated to standard at Antwerp.

ALLAN LINE MARINE SERIES.

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

S. S. Hibernian																			Capt. W. Richardson.
S. S. Scandinavian																			

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, Off Chatham, Mass			30.03	762.7	52	11.1	86	SSE	12	5.4			10s		SW	Short		Threatening	Capt. James Jorgensen.

Note.—The originals for the schooner Addie Fuller give the amount of cloudiness by the scale 0 to 4; the barometer as read off.

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

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

Albert J. Myer

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

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON NOVEMBER 3, 1877.

7:35 A. M. WASHINGTON mean time.

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

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

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

ALGERIAN SERIES.

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

STATIONS.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Barometer: Corrected for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours	.....	.....	30.14	765.5	71.6	22.0	63	NNW	.....	.....	2	.....	2	.....	.....	.....	.....	Fair	Michel.
Algiers	.....	.....	30.08	764.0	68.4	20.2	71	N	.....	.....	2	.....	6	.....	.....	0	0	Cloudy	Peter.
La Calle	.....	.....	30.11	764.7	69.8	21.0	68	E	.....	.....	2	.....	2	.....	.....	0	0	Fair	Fleury.
Tunis	.....	.....	30.18	766.5	66.9	19.4	54	NE	.....	.....	2	.....	1	.....	.....	.....	.....	Very fair	Jacques.
Sfax	.....	.....	30.18	766.5	69.8	21.0	.....	NW	.....	.....	1	.....	1	.....	.....	0	0	Very fair	Husson.
Saida	.....	.....	30.17	766.4	70.5	21.4	40	NE	.....	.....	1	.....	2	.....	.....	0	0	Fair	Millot.
Tebessa	.....	.....	30.13	765.3	.....	.....	.....	Calm	.....	.....	0	.....	0	.....	.....	0	0	Clear	Bourgeois.
Geriville	.....	.....	30.14	765.6	71.1	21.7	31	SW	.....	.....	2	.....	3	.....	.....	0	0	Pretty fair	Lemaillot.
Laghouat	.....	.....	30.19	766.8	68.0	20.0	47	W	.....	.....	2	.....	0	.....	.....	0	0	Clear	Guyot.
Biskra	.....	.....	30.20	767.1	73.2	22.9	29	SSE	.....	.....	2	.....	5	.....	.....	0	0	Cloudy	Kuntz.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

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

AUSTRIAN SERIES.

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

STATIONS.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Barometer: Corrected for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Agram	29.58	751.4	30.14	765.5	52.3	11.3	57	SE	.....	.....	2	.....	1	.....	.....	0	0	.....	Prof. Ivan Stozir
Cracow, I. R. Observatory	29.34	745.3	30.12	765.1	47.8	8.8	63	WSW	.....	.....	2	.....	3	.....	.....	0	0	.....	Dr. Wierzbicki.
Eperies	29.23	742.5	30.13	765.2	47.1	8.4	55	Calm	.....	.....	0	.....	3c	.....	Calm	0	0	.....	Julius Mikolik.
Gratz	28.85	732.9	30.13	765.4	46.6	8.1	58	S	.....	.....	3	.....	3	.....	.....	0	0	.....	Andreas Rospini.
Hermannstadt	28.67	728.2	30.13	765.2	44.6	7.0	66	N	.....	.....	2	.....	4	.....	.....	0	0	.....	Prof. Reissenberger.
Kremsmünster	28.69	728.6	30.06	763.4	43.5	6.4	79	Calm	.....	.....	0	.....	7	.....	.....	0	0	.....	Prof. C. Wagner.
Lemberg	29.13	739.8	30.14	765.5	45.0	7.2	83	NW	.....	.....	1	.....	9	.....	.....	0	0	.....	Dr. T. Stanecki.
Pola	30.00	762.1	30.11	764.9	56.8	13.8	60	W	.....	.....	2	.....	3cs	.....	.....	0	0	.....	I.R.Hydrographic Office.
Szathmar	29.60	754.2	30.17	766.3	45.9	7.7	76	NW	.....	.....	2	.....	0	.....	.....	0	0	.....	Johann Tamas, S. J.
Szegedin	29.81	757.2	30.10	764.4	49.6	9.8	66	Calm	.....	.....	0	.....	0	.....	.....	0	0	.....	Karl Stancel.
Trieste	30.06	763.5	30.16	766.1	55.6	13.1	91	SW	.....	.....	1	.....	0	.....	.....	0	0	Clear	P. Busin.
Vienna	29.37	745.9	30.07	763.7	54.0	12.2	51	S	.....	.....	2	.....	0	.....	.....	0	0	.....	I. R. Central Met. Obs'y.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time, and at Trieste at 7 a. m. of the following day. The elevation of Gratz is 343.5 meters, or 1,123.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

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

STATIONS.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Barometer: Corrected for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Arlon	28.55	725.1	30.08	764.1	45.0	7.2	86	SW	.....	.....	2	.....	9	.....	.....	0.024	0.6	.....	Prof. M. Passau.
Brussels	29.83	757.7	30.03	762.8	52.5	11.4	68	W	.....	.....	1	.....	6	.....	NNW	0.006	0.15	.....	Royal Observatory.
Furnes	30.02	762.5	30.04	763.1	53.2	11.8	73	NW	.....	.....	4	.....	5	.....	.....	0	0	.....	M. E. de Cae.
Maeseyck	29.88	758.9	30.01	762.2	51.1	10.6	92	WSW	.....	.....	2	.....	8	.....	.....	0	0	.....	M. Pierrot.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

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

BRITISH SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	29.70	754.4	29.79	756.7	48.9	9.4	.....	WSW	12	5.4	.....	.....	2	.....	.....	0	0	Blue sky.....	W. Boswell.
Ardrossan	29.88	758.9	29.90	759.4	50	10.0	.....	WNW	.....	.....	4	.....	8	.....	.....	.....	.....	Showery.....	William McNeil.
Armagh, Observatory	.....	.....	29.98	761.5	47.6	8.7	.....	SSW	10	4.5	.....	.....	.....	.....	.....	.....	.....	.....	S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)	.....	.....	30.04	763.0	49.8	9.9	.....	WSW	23	10.3	.....	.....	9	.....	.....	.....	.....	Overcast.....	John Hartnup.
Birr Castle, (Parsonstown)	.....	.....	30.04	763.0	50.8	10.4	.....	SSW	.....	.....	1	.....	10	.....	.....	.....	.....	Overcast.....	J. Dreyer.
Bradford, Yorkshire	29.55	750.6	29.94	760.5	48.6	9.2	.....	NW	.....	.....	3	.....	5	.....	.....	0.15	3.8	D. clouds.....	J. McLandsborough.
Bridgetown, (Barbados)	29.88	757.7	29.86	758.4	82.0	27.8	.....	NE	.....	.....	2	.....	3	.....	.....	.....	.....	D. clouds.....	Pvt. G. W. Roberts, A.
Cambridge, Observatory	.....	.....	30.06	763.5	52.9	11.6	.....	NW	.....	.....	1	.....	1	.....	.....	.....	.....	D. clouds.....	H. Todd. [H. C.
Cardington	.....	.....	30.07	763.8	49.0	9.4	.....	NW	.....	.....	1	.....	4	.....	.....	.....	.....	D. clouds.....	John McLaren.
Chatham, School M. E	29.94	760.5	30.07	763.8	51.2	10.7	.....	W	.....	.....	2	.....	3	.....	.....	.....	.....	Blue sky.....	Lt. Col. C.M.Martin, R.E.
Dartmoor	28.67	728.2	30.15	765.8	52.0	11.1	.....	W	.....	.....	2	.....	3	.....	.....	.....	.....	Fine.....	Alexander Watt.
Davos Platz, (Switzerland)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Francis Redford, M. A.
Donaghadee	29.94	760.5	29.97	761.2	48	8.9	.....	WSW	.....	.....	3	.....	8	.....	.....	.....	.....	D. clouds.....	J. Mac Gowan.
Dover	30.04	763.0	30.07	763.8	52	11.1	.....	N	.....	.....	3	.....	3	.....	.....	.....	.....	¼ clouded...	J. Costello.
Eccles, (near Manchester)	.....	.....	30.02	762.5	52.8	11.6	.....	WSW	4.4	2.0	.....	.....	7	.....	.....	.....	.....	D. clouds.....	Thomas Mackereth.
Falmouth, Observatory	29.95	760.7	30.18	766.6	53.2	11.8	.....	WNW	.....	.....	1	.....	9	.....	.....	.....	.....	Overcast.....	The Staff.
Fort Napier, (Natal)	27.45	697.2	29.65	753.1	77.6	25.3	.....	NE	.....	.....	1	.....	10	.....	.....	.....	.....	Overcast.....	Pvt. G. Salmon, A.H.C.
Free Town, (Sierra Leone)	.....	.....	29.91	759.7	89	31.7	.....	Calm	.....	.....	0	.....	3	.....	.....	.....	.....	Blue sky.....	
Galway, Queen's College	.....	.....	.....	.....	52	11.1	.....	SW	.....	.....	1	.....	3	.....	.....	.....	.....	D. clouds.....	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	30.04	763.0	30.09	764.3	67.8	19.9	.....	NE	.....	.....	2	.....	4	.....	.....	.....	.....	D. clouds.....	Corpl. C. Aitken, A.H.C.
Glasgow, Observatory	29.67	753.6	29.87	758.7	49.0	9.4	.....	WSW	.....	.....	5	.....	4	.....	.....	.....	.....	Blue sky.....	D. G. Maclean.
Great Yarmouth	30.01	762.2	30.01	762.2	50	10.0	.....	NW	.....	.....	3	.....	2	.....	.....	.....	.....	Hazy.....	G. T. Watson.
Greenwich, Royal Obs'y	29.92	760.0	30.10	764.5	50.7	10.4	.....	NNW	.....	.....	1	.....	4	.....	.....	.....	.....	D. clouds.....	The Staff, for G. B. Airy.
Guernsey	29.92	760.0	30.15	765.8	53.5	11.9	.....	NNW	.....	.....	2	.....	3	.....	.....	.....	.....	D. clouds.....	Dr. S. E. Hoskins, F.R.S.
Helston	.....	.....	30.17	766.3	56	13.3	.....	W	.....	.....	2	.....	3	.....	.....	0	0	D. clouds.....	M. P. Moyle.
Holyhead	30.01	762.2	30.06	763.5	50	10.0	.....	SW	.....	.....	3	.....	2	.....	.....	.....	.....	Blue sky.....	John Tilston.
Jersey	29.88	758.9	30.18	766.6	54.0	12.2	.....	N	.....	.....	3	.....	2	.....	.....	Blank	Blank	D. clouds.....	J. Fisher.
Kew, Observatory	.....	.....	30.10	764.5	51.8	11.0	.....	WNW	11	4.9	.....	.....	5	.....	.....	.....	.....	D. clouds.....	The Staff.
Kingstown	30.04	763.0	30.06	763.5	50	10.0	.....	W	.....	.....	3	.....	8	.....	.....	.....	.....	Overcast.....	George Mitchell.
Leicester, Museum	.....	.....	30.05	763.3	50.2	10.1	.....	W	.....	.....	1	.....	6	.....	.....	.....	.....	D. clouds.....	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	30.00	762.0	30.08	764.0	65	18.3	.....	N	.....	.....	3	.....	4	.....	.....	.....	.....	D. clouds.....	S'gt. C. Arbeiter, A.H.C.
Nairn	29.64	752.8	29.73	755.1	47	8.3	.....	W	.....	.....	4	.....	5	.....	.....	.....	.....	½ clouded...	W. D. Penny.
Nassau, (Bahamas)	.....	.....	30.03	762.7	80.1	26.7	.....	NE	.....	.....	1	.....	5	.....	.....	.....	.....	D. clouds.....	C. S. Duncombe.
Nottingham, Observatory	29.86	758.4	30.05	763.3	52.3	11.3	.....	SW	.....	.....	2	.....	4c;k	.....	W	0.143	3.64	D. clouds.....	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.54	750.3	30.06	763.5	49.1	9.5	.....	WNW	.....	.....	3	.....	9	.....	.....	.....	.....	D. clouds.....	Rev. Stephen Whitty
Oxford, Radcliffe Obs'y	.....	.....	30.08	764.0	51	10.6	.....	WNW	.....	.....	1	.....	7	.....	.....	.....	.....	D. clouds.....	F. Lucas
Plymouth	30.08	764.0	30.16	766.1	52.0	11.1	.....	W	.....	.....	1	.....	10	.....	.....	.....	.....	Gloomy.....	John Merrifield.
Roche's Point	30.03	762.7	30.07	763.8	52	11.1	.....	SW	.....	.....	3	.....	5	.....	.....	.....	.....	Cloudy.....	W. Kennedy.
Saint Ann's Head	29.94	760.5	30.11	764 8	52	11.1	.....	W	.....	.....	2	.....	5	.....	.....	.....	.....	D. clouds.....	John C. Walker.
Sandwick Manse, (Orkneys)	.....	.....	29.62	752.3	47.7	8.7	.....	W	37	16.5	.....	.....	6	.....	.....	.....	.....	Showery.....	Rev. C. Clouston, LL. D
Scutari, Cemetery, (Turkey	.....	.....	29.69	754.1	54.8	12.7	.....	NW	.....	.....	2	.....	10	.....	.....	.....	.....	Heavy rain.	Sergt. W. H. Lyne.
Sheffield	29.79	756.7	30.03	762.7	49.8	9.9	.....	W	.....	.....	3	.....	7	.....	.....	0	0	Misty.....	W. F. Cooper.
Silloth Rectory	29.92	760.0	29.95	760.7	50.4	10.2	75	W	.....	.....	5	.....	4	.....	.....	0	0	D. clouds.....	Rev. F. Redford, M. A.
Stonyhurst, Observatory	.....	.....	.....	.....	49.3	9.6	.....	W	.....	.....	3	.....	7	.....	.....	.....	.....	D. clouds.....	Rev. S. J. Perry.
Stornoway, Lewis C., (Hebr.)	.....	.....	29.67	753.6	44	6.7	.....	WSW	.....	.....	2	.....	10	.....	.....	.....	.....	Overcast.....	John Smith.
Stratfield Turgiss	29.87	758.7	30.09	764.3	53.1	11.7	.....	NW	.....	.....	1	.....	4	.....	.....	.....	.....	D. clouds.....	Rev. C. H. Griffith, F.M.S.
Thurso	.....	.....	29.63	752.6	50	10.0	.....	W	.....	.....	4	.....	5	.....	.....	.....	.....	D. clouds.....	John Trotter.
Truro, Royal Institution	.....	.....	30.16	766.1	57	13.9	.....	W	.....	.....	2	.....	5	.....	.....	.....	.....	D. clouds.....	W. Newcombe.
Valencia, Observatory	.....	.....	30.03	762.7	53.5	11.9	.....	SSW	29	13.0	.....	.....	8	.....	.....	.....	.....	D. clouds.....	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)	.....	.....	.....	.....	49.3	9.6	.....	W	.....	.....	6	.....	0	.....	.....	0.15	3.8	.....	Henry Mercer.
Cape Good Hope, Obs'y	29.97	761.2	30.01	762.2	71.0	21.7	63	WNW	10	4.5	.....	2	6	.....	.....	.....	.....	.....	The Staff, for E. J. Stone.
Hobart Town, (Tasmania)	.....	.....	29.92	737.1	43.5	6.4	87	W	.....	.....	3	.....	8kn	.....	.....	0.25	6.3	Showery.....	Francis Abbott, F.R.A.S.
Leith, Restalrig Park	.....	.....	29.89	759.2	49.0	9.4	.....	W	.....	.....	2	2c	.....	.....	.....	0	0	Fine.....	Andrew Gibb.
Mauritius, Observatory	29.80	756.9	29.98	761.6	79.3	26.3	65	NE	9.5	4.2	.....	6	4	NW	E	0.39	9.9	Cloudy.....	C. Meldrum.
Melbourne, Observatory	29.62	752.3	29.71	754.6	51.9	11.1	74	W	24	10.7	.....	.....	10	.....	.....	0.05	1.3	Squally.....	R. L. J. Ellery.
Monach L't-house, (Hebrides)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Youngclause.
North Unst, (Shetland Is.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Robert Burnet.
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Note.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except for Nairn and Stornoway by the scale 0 to 4. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m. *Rain-fall during the month.

Marine Series. Vessels.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. 0—10.	Clouds. Direction. From—	Sea or swell. Height scale 0—9	Sea or swell. Direction from—	Weather.	Observer.
S. S. Algeria, N. 46° 39', W. 40° 15'	.....	.....	30.13	765.3	48	8.9	.....	WNW	.....	.....	6	.....	9	W	.....	*25	NW	D. clouds.....	Capt. W. Watson.
S. S. Batavia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. J. E. Mouland.
Ship Camperdown	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. A. T. Miller.
Brig Catherine, N. 49° 45', W. 16° 10'	.....	.....	29.91	759.7	56	13.3	.....	SSW	.....	.....	6	.....	10	.....	.....	4	WSW	Overcast.....	Capt. Adam Smith.
Barque Celeste	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. D. F. McKechnie
S. S. Hibernia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. W. R. Cato
Barque Maroon	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. A. T. Brown.
Ship Mikado	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. C. C. Prehn.
S. S. Seine	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. H. Manning.
Barque Sorata	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. Jas. J. Price.
Schooner Traveller, N. 50° 0', W. 4° 50'	.....	.....	30.18	766.6	54	12.2	.....	NW	.....	.....	3	.....	8	.....	.....	3	W	D. clouds.....	Capt. Alex Simpson.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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Note.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. *Feet.

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

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

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

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

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

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

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

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Upper. 0—10.	Clouds. Amount. Low'r. 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
San José	26.19	665.2			70.7	21.5	77	NE			3		1pk			Blank	Blank		Federico Maison.

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

DANISH SERIES.

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

Copenhagen	29.63	752.6	29.68	753.8	44.4	6.9	90	SSW			6		10					Foggy	
Fanöe	29.68	753.9	29.70	754.4	48.9	9.4	79	W			6		4						
Godthaab, (Greenland)	29.73	755.2	29.78	756.3	19.8	—6.8	73	ENE			4		0						
Stykkisholm, (Iceland)	29.46	748.3	29.50	749.4	30.9	—0.6	98	NE			8		8						
Thorshavn, (Faröe)	29.35	745.5	29.39	746.4	43.7	6.5	75	WNW			3		3						
Vestervig	29.39	746.4	29.56	750.7	46.0	7.8	89	NW			7		10						

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

FRENCH SERIES.

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

Alençon, Normal School	29.60	751.9	30.15	765.9	53.6	12	67	NW			3		5		W	0	0	Cloudy	Collignon, Director.
Amiens, Normal School	29.95	760.6	30.06	763.4	57.2	14.0	75	S			1		8		NW	0	0	Very cloudy	Bonvarne, Director.
Avignon, Normal School	30.08	763.9	30.15	765.9	61.3	16.3	58	ENE			1		10		WNW	0	0	Covered	Mr. Giraud, Director.
Bar-sur-Seine	29.53	750.1	30.10	764.6	52.9	11.6	73	W			1		10			0	0	Covered	C. Saillard.
Beaumette Obs'y (Angers)	29.94	760.4	30.10	764.5	57.6	14.2	71	N	3.1	1.4					W	0	0		Albert Cheux.
Beauvais	29.82	757.4	30.11	764 7	54.9	12.7	72	N			2		8		NNW	0.010	0.25	Very cloudy	Normal School.
Besançon	29.22	742.1	30.11	764.8	57.6	14.2	65	SSW			3		2		W	0	0	Slightly cl'dy	Normal School.
Bourg-en-Bresse	29.22	742.2	30.15	765.8	57.7	14.3	82	SE			4		5ck		SE	0	0	Cloudy	Normal School.
Bourges, Normal School	29.55	750.5	30.12	765.1	53.8	12.1	90	WSW			2		10		NE	0	0	Covered	A. Wagner, Director.
Brest, Naval Observatory	29.89	759.1	30.10	764.6	55.6	13.1	66	N			3		8k		N	0.020	0.50		The Staff.
Carcassonne, Normal School	29.76	755.8	30.17	766.4	56.8	13.8	82	W			2		1		W	0	0	Clear	Vateau, Director.
Caen	30.05	763.3	30.18	765.2	56.3	13.5	73	SSE			1		5		SSE	0	0	Cloudy	Normal School.
Chartres, Normal School	29.47	748.6	30.03	762.8	62.2	16.8	64	N			2		5		E	0	0		Lequin, Director.
Châlons-sur-Marne, N. Sch'l	29.76	756.0	30.09	764.2	49.6	9.8	89	Calm			0		10					Light rain	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.72	729.5	30.06	763.4	63.3	17.4	56	N			1		8		N	0	0	Very cloudy	Alluard, Director.
Commercy, Normal School	29.23	742.4	30.18	765.4	49.5	9.7	84	WNW			2		5		WNW	0	0	Cloudy	Dr. Goulet, Director.
Commune de Gréasque*	29.04	737.6	30.18	766.6	61.7	16.5	58	SE			1		8		SE	0	0	¾ covered	M. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	29.91	759.6	30.12	765.1	57.6	14.2	89	N			2		8		NE	0	0	Very cloudy	Mouillot, Director.
Le Mans, Normal School	29.81	757.2	30.12	765.1	56.3	13.5	75	N			4		5		NW	0	0	Cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.17	740.8	30.09	764.2	57.0	13.9	79	WSW			4		5		S	0	0	Cloudy	Pin, Director.
Lorient, Naval Observatory	30.07	763.6	30.17	766.2	56.5	13.6	60	NNE			2		2		N	0	0	¾ covered	T. Carré, Director.
Mâcon, Normal School	29.51	749.5	30.22	767.5	54.1	12.3	83	NE			2		5		E	0	0	Cloudy	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	29.02	737.0	30.07	763.6	54.3	12.4	59	SW					8		SE	0	0	Very cloudy	Normal School.
Nismes, Normal School	29.93	760.1	30.13	765.2	66 9	19.4	60	W			2		2		N	0	0	Slightly cl'dy	Boyer, Director.
Orleans, Normal School	29.60	751.9	29.98	761.6	51.8	11	78	SW			2		10			0	0	Covered	Bernard, Director.
Paris, Observatory	29.85	758.1	30.09	764.2	53.6	12.0	86	WNW			1		10k		WNW	Inap.	Inap.	Covered	National Observatory.
Privas	29.09	738.9	30.16	766.0	56.3	13.5	61	S			2		5		S	0	0	Cloudy	Normal School
Rochefort, Naval Obs'y	30.09	764.2	30.12	765.0	59.0	15.0	91	S			2		10		SSE	0.04	1.	Covered	Lt. Decante, Director.
Rouen, Normal School	30.02	762.4	30.10	764.6	58.1	14.5	65	NW			2		5		NW	0	0	Cloudy	F. Lucard, Director.
Tarbes, Normal School																			T. Hugues, Director.
Villefranche	29.42	747.2	30.13	765.3	58.1	14.5	78	N			1		5		Calm	0	0	Cloudy	Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.76	756.0	29.79	756.7	82.4	28										0	0		L'Abbé Marchési.
Marseilles, Observatory			30.11	764.8	65.3	18.5	55	SE			0–1		8			0	0	Cloudy	The Staff.
Mont-Louis	24.99	634.7	30.30	769.7	53.4	11.9	52	ESE	9.3	4.17			8		W	0	0		Mr. Falguère.
Nice			30.12	765.0	60.4	15.8	64	E					5		NW	0	0	Cloudy	Dr. A. Niepce.
Paris, Montsouris Obs'y	29.80	757.0	30.08	764.0	53.2	11.8	87	NW			2		10		NW	Inap.	Inap.		Marié Davy, Director.
Perpignan			30.15	765.8	61.7	16.5	71	SE	3.7	1.67			8		NW	0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.	21.37	542.7			40.3	4.6		SW			2		3					Fair	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.63	574.8			48.6	9.2		SW			2		3			0	0	Fair	Gen'l de Nansouty.
Saint Maur, (near Paris)	29.93	760.2	30.10	764.4	53.2	11.8	86	SW			1		10			Blank	Blank	Covered	E. Renou.
Toulouse, Observatory	29.48	748.7	30.21	767.2	56.7	13.7	97	SW			1					0.008	0.2	Foggy	The Staff.
Tours	29.95	760.7	30.15	765.7	58.5	14.7		SSE			1		8		SE	0	0		C. Marquet.
Versailles, (near Paris)			30.09	764.3	54.7	12.6	79	NW			1		10			0.015	0.39	Covered	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.01	762.2	30.03	762.8	53.8	12.1	91	E	11.0	5.2			10n			0.031	0.8	Raining	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; for Montsouris, the barometer reduced to freezing but not to sea-level. At Mirecourt the cloud direction is apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

GERMAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Berlin	29.75	755.6	29.92	760.0	48.6	9.2	70	S			1		9			0.047	1.19		Prof. Arndt.
Breslau	29.52	749.7	30.05	763.2	49.6	9.8	65	S			5		2			0	0		Royal University Obs'y.
Carlsruhe	29.61	752.0	30.04	762.9	52.5	11.4	75	SW			1		10			0	0		Albert Senz.
Cassel	29.45	748.0	30.06	763.5	45.0	7.2	84	SSE			1		10	SW		0	0		Dr. H. Möhl.
Crefeld	29.80	756.8	29.96	760.9	51.8	11.0	85	SW			2		9			0.04	1.		Director Lose.
Emden	29.91	759.8	29.95	760.7	52.7	11.5	78	WNW			5		5			0	0		Prof. Prestel.
Frankfort on the Main	29.73	755.1	30.10	764.6	45.0	7.2		SW			1		9			Inap.	Inap.		Physical Society.
Friedrichshafen	28.66	727.9	30.12	765.1	46.4	8.0	79	W			1		10	NW		0	0	Foggy	M. Wilhelm.
Hamburg	29.76	756.0	29.84	757.8	46.0	7.8	96	WSW			3		10			0.020	0.5	Light rain	Captain F. Hegemann.
Kiel	29.76	755.9	29.78	756.3	48.0	8.9	92	W			5		5			0.056	1.42		Prof. G. Karsten.
Königsberg, (Prussia)	29.90	759.4	29.98	761.5	46.0	7.8	84	SW										Cloudy	Prof. E. Luther.
Köslin			29.86	758.5	46.4	8.0		S			7		4			0.087	2.2		H. Müller.
Leipsic, Observatory	29.56	750.7	29.98	761.5	50.4	10.2	65	SSW			3		8			0.008	0.2		Prof. Bruhns.
Memel, Naval School	29.94	760.5	29.99	761.7	47.3	8.5	73	SSW			3		10n						Reinbrecht von Skalweit.
Neufahrwasser	29.95	760.7	29.97	761.1	47.5	8.6	83	SSW			4		10			0	0		A. Lothes.
Posen	29.72	754.9	30.02	762.5	48.6	9.2	67	W			5		10					Cloudy	Dr. Magener.
Strassburg Obs., (in Alsace	29.51	749.6	30.07	763.7	54.1	12.3	65	SSW			3		10	W		0	0	Foggy	Dr. Schur.
Stuttgart	29.07	738.3	30.01	762.3	51.8	11.0	69	W			1		10	W		0.008	0.2		Prof. Schoder.
Treves, (Trier)	29.43	747.4	29.95	760.7	49.6	9.8	78	SW			2		10			0.013	0.34	Dense fog	Prof. Flesch.
Weissenburg, (Bavaria)	28.51	724.2	30.04	762.9	48.7	9.3	62	W	1.	0.5			9cs	W		0	0		Dr. Von Bebber.
Wustrow, Naval School	29.82	757.4	29.86	758.4	44.2	6.8	83	SSE			5		7					Cloudy	E. F. Schütz.
German Naval Series.																			

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4; Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:9, instead of 1:51, p. m., local time.

GREEK SERIES.

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

Athens	29.43	747.6	29.83	757.7	53.6	12.0		N										¼ clear	D. J. F. J. Schmidt.

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

INDIAN SERIES.

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

Kurrachee	29.80	756.8	29.85	758.1	81.3	27.4	80	WSW	28.0?	12.5?			1			0	0	D. clouds	
Deesa	29.40	746.9	29.88	758.9	86.3	30.2	26	Calm					0			0	0	Blue sky	
Bombay	29.78	756.5	29.82	757.5	84.4	29.1	75	NW	13.0	5.8			0			0	0	Misty	
Poona	27.86	707.7	29.86	758.5	80.2	26.8	56	E					3		E	0	0	D. clouds	
Lahore	29.09	738.9	29.84	758.0	75.0	23.9	56	Calm	0.7	0.3			3			0	0	Blue sky	
Belgaum	27.32	694.0	29.86	758.6	75.9	24.4	69	Calm					2			0	0	D. clouds	
Bangalore																			
Roorkee	28.92	734.6	29.83	757.6	76.8	24.9	42	NW	1.5	0.7			0			0	0		
Agra	29.28	743.6	29.84	757.9	81.7	27.6	39	W								0	0		
Trichinopoly																			
Nagpur	28.82	732.0	29.87	758.6	78.6	25.9	38	Calm	2.1	0.9			0			0	0	Blue sky	
Madras																			
Lucknow	29.46	748.4	29.84	758.0	73.3	22.9	55	NW	0.8	0.4			0			0	0	Blue sky	
Allahabad	29.53	749.9	29.84	758.0	73.6	23.1	51	Calm	0.8	0.4			0			0	0	Blue sky	
Patna	29.67	753.5	29.85	758.2	79.5	26.4	43	Calm	0.8	0.4			0	W	W	0	0	D. clouds	
Hazaribagh	27.83	706.9	29.87	758.6	72.6	22.6	60	NW	3.6	1.6			2			0	0	Blue sky	
Cuttack	29.72	755.0	29.81	757.1	81.0	27.2	68	NW	1.3	0.6			0			0	0	Blue sky	
Calcutta (Alipore)	29.79	756.6	29.81	757.1	75.9	24.4	90	E	1.0	0.4			0			0.10	2.6	Blue sky	
Goalpara	29.42	747.4	29.82	757.3	77.8	25.4	75	Calm	2.9	1.3			6			0	0	D. clouds	
Chittagong	29.73	755.1	29.82	757.4	78.7	25.9	82	NE	1.2	0.5			10			0	0	Overcast	
Sibsagar	29.51	749.6	29.85	758.2	75.7	24.3	82	Calm	1.2	0.5			10	SW	SW	0	0	D. clouds	
Rangoon																			
Jubbulpore	28.50	724.0	29.87	758.7	79.5	26.4	45	NE	1.8	0.8			0			0	0	Blue sky	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,026 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 1—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	22.24	564.8	30.13	765.4	40.1	4.5	34	NW			2		10			0	0		Ab. Dom. Mongini.
Stelvio	22.23	564.7	30.18	766.6	37.2	2.9		ENE			2		10			0	0		Signora Ernesta Manfredi.
Udine	29.69	754.1	30.11	764.7	54.1	12.3	47	S	1.3	0.6			3			0	0		Prof. Giovanni Clodig.
Padua	29.99	761.8	30.11	764.7	55.8	13.2	47	S	1.3	0.6			3	N		0	0		Prof. Dott. Lorenzoni.
Vicenza	29.91	759.6	30.10	764.6	56.3	13.5	62	S	0.7	0.3			4	W		0	0		Conte Alm. Da Schio.
Verona	29.88	759.0	30.11	764.8	61.2	16.2	74	SW	0	0			0			0	0		Dott. B. Bertoncelli.
Bergamo																			Prof. Trionfini Carlo.
Domodossola	29.10	739.2	30.15	765.8	51.8	11.0	64	Calm			0		10			0	0		Prof. Giuseppe Calza
Milan	29.67	753.6	30.20	767.0	52.9	11.6		E					8	ENE		0	0		Ab. Gio. Capelli.
Pavia	29.80	756.9	30.15	765.9	46.4	8.0	86	SSW			1		8			0	0		Prof. Gio. Cantoni.
Moncalieri	29.23	742.5	30.16	766.1	53.4	11.9	71	NNW	0	0			5	E		0	0		Prof. P. F. Denza.
Mondovi	28.20	716.2	30.13	765.4	52.7	11.5	52	NW			1		0			0	0		Prof. D. C. Bruno.
Porto Maurizio	29.92	760.0	30.15	765.7	61.3	16.3	64	E	0.7	0.3			7			0	0		Prof. L. Vassallo.
Genoa	29.97	761.1	30.13	765.4	63.7	17.6	48	SW	3.8	1.7			6	S		0	0		Prof. G. M. Garibaldi.
Piacenza	29.89	759.2	30.15	765.8	60.2	10.1	75	NW	3.8	1.7			7	W		0	0		Dott. G Manzi.
Parma	29.82	757.5	30.15	765.7	55.0	12.8	55	NW			2		4			0	0		Prof. P. Pigorini.
Florence	29.90	759.4	30.16	766.1	59.0	15.0	34	NW			2		1			0	0		Cav. F Meucci.
Leghorn	30.08	764.0	30.17	766.2	55.6	13.1	78	E	2.5	1.1			5			0	0		Prof. P. Monte.
Siena	28.91	734.4	30.13	765.4	58.5	14.7	29	SE	0	0			3	N		0	0		Prof. L. Toscani.
Urbino	28.61	726.7	30.19	766.8	54.0	12.2	50	SW			2		0			0	0		Prof. P. Serpieri.
Pesaro	30.10	764.6	30.15	765.9	53.6	12.0	60	NE	13.0	5.8			0			0	0		Prof. Luigi Guidi.
Ancona	30.04	762.9	30.15	765.7	58.1	14.5	54	Calm			0		0			0	0		Prof. F. DeBosis.
Grosseto	30.06	763.4	30.17	766.3	62.6	17.0	37	SW			2		3	SE		0	0		Avv. P. Ponticelli.
Rome	29.97	761.1	30.14	765.6	61.7	16.5	33	N	0.7	0.3			0			0	0		Prof. P. A Secchi.
Naples, O. U.	29.93	760.2	30.13	765.4	63.3	17.4	53	NE			2		1			0	0		Prof. L. Palmieri.
Lecce					57.4	14.1	41	NNE	21.7	9.7			3	N		0	0		Prof. C. De Giorgi.
Cosenza	29.21	741.9	30.11	764.9	57.6	14.2	76	SE	4.3	1.9			0			0	0		Prof. F. D. Conti.
Cagliari	29.91	759.7	30.10	764.6	66.3	18.5	66	S			2		0			0	0		Prof. A. Pacinotti.
Riposto, (Sicily)	29.94	760.5	29.99?	761.7?	65.7	18.7	66	N			2		0			0	0		Prof. F. Caflero.
Palermo	29.84	758.0	30.10	764.5	61.0	16.1	45	NE	4.3	1.9			1			0	0		Prof. G. Cacciatore.
Caltanissetta	28.09	713.5	30.05	763.2	58.8	14.9	39	N			6		0			0	0		Prof. A. Pagani.
Syracuse	29.95	760.7	30.02	762.6	64.0	17.8	48	NE			6		7			0	0		Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.60	751.8	30.15	765.9	60.8	16.0	30	WNW	1.8	0.8			0			0	0		Prof. F. Brioschi.

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,548.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo, 379.6 m., or 1,245.3 ft.; Mondovi, 558 m., or 1,824.3 ft.; Siena, 348.5 m., or 1,143.3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft.

JAPANESE SERIES.

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

Tokei (Yeddo)																			The Observatory.
Tokei (Yeddo) University	29.94	760.5	30.04	763.0	46.3	8.0	67	Calm	0	0						0	0	Clear	Prof. P. V. Veeder.

MEXICAN SERIES.

By authority of the Secretary of Public Works.

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

Aguascalientes																			I. N. Marin, M. D.
Córdoba																			C. Peña, M. D.
Cuernavaca																			L. Castillo, A. E.
Guadalajara																			Prof. L. Perez.
Guanajuato																			Prof. V. Fernandez.
Leon																			Prof. M. Leal.
Mexico	23.14	587.7	30.29	769.4	52.2	11.2	82	Calm	0	0		0	10k			0	0	Covered	Central Observatory.
Orizaba																			N. N.
Orizaba																			I. Orozco, M. D.
Pabellon, (Aguascalts)																			M. V. de Leon, M. E.
Puebla																			Prof. B. Gonzalez.
Toluca																			Prof. C. Velazquez.
Tlacotalpam																			Prof. F. R. Bayly.
San Luis Potosí																			G. Barroeta, M. D.
Vera-Cruz																			Prof. J. Rossell.
Zacatecas																			J. A. Bonilla, M. E.

Note.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,569 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,290 m., or 7,512.9 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabell m, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m,, or 8,611.8 ft.; San Luis Potosí, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,493 m., or 8,178.3 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

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

Flushing	30.05	763.3	30.05	763.3	53.2	11.8		WNW			4					0.028	0.7		
Groningen	29.87	758.6	29.92	760.0	50.4	10.2		NW			4					0.028	0.7		
Helder	29.96	760.9	29.96	760.9	51.0	10.9		WNW			4					0	0		
Hellevoetsluis			30.00	762.0	52.5	11.4	71	NW			4								
Utrecht	29.95	760.7	30.00	761.9	55.2	12.9	70	WNW			4		5			0.004	0.1	Cloudy	H. v d Brink.

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

NORWEGIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	29.45	748.0	29.50	749.4	43.9	6.6	94	SSE.	7.4	3.3	.....	.....	5	.....	.....	0.386	9.8	.....	
													10					Raining.	
Brönö	29.27	743.5	29.31	744.5	41.0	5.0	81	SW	9	4	.....	.....	10	.....	.....	0.047	1.2	Raining.	
Christiania	29.28	743.7	29.43	747.4	44.6	7.0	96	SSW	4	2	.....	.....	.....	.....	.....	0.016	0.4	.....	
Tromsö	29.37	745.9	29.41	747.0	33.8	1.0	92	Calm	0	0	.....	.....	9	.....	.....	.....	.....	.....	

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

PORTUGUESE SERIES.

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

Angra, (Azores)	29.91	759.8	30.11	764.7	62.4	16.9	87	NE	1.8	0.8	.....	.....	7	.....	.....	0	0	.....	Dr. J. A. Sampaio.
Campo Major	29.11	739.4	30.10	764.6	77.4	25.2	45	Calm	0	0	.....	.....	4	.....	.....	0	0	.....	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	29.95	760.8	30.04	763.0	78.6	25.9	46	E	3.1	1.4	.....	.....	0	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.79	756.6	30.15	765.7	66.6	19.2	67	E	3.8	1.7	.....	.....	1	.....	.....	0	0	.....	The Staff.
Ponta Delgada, (Azores)	30.21	767.2	30.28	769.0	68.7	20.4	69	NE	4.3	1.9	.....	.....	5	.....	.....	0	0	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

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

Naval Series. Vessels.	Sea or swell. Height scale 0–9	Sea or swell. Direction from—		
S. S. India	.....	.....	.....	A. D. Pedroso, Com'd't. Lt. S. A. P. de Mirando.
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....

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

RUSSIAN SERIES.

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

Warsaw	29.67	753.6	30.10	764.6	44.4	6.9	84	S	9	4	.....	.....	7	.....	.....	.....	.....	.....	Astronomical Obs.
Wilna	29.67	753.5	30.10	764.4	41.5	5.3	86	SW	4	2	.....	.....	10	.....	.....	.....	.....	.....	Astronomical Obs.
Dorpat	29.67	753.6	29.92	759.9	42.1	5.6	85	SSW	7	3	.....	.....	7	.....	.....	.....	.....	.....	Prof. Dr. Weihrauch.
St. Petersburg	29.83	757.6	29.84	758.0	41.4	5.2	82	WSW	7	3	.....	.....	6	.....	.....	.....	.....	.....	Central Physical Obs.
Kuopio	29.32	744.4	29.65	753.0	32.9	0.5	94	WSW	13	6	.....	.....	10	.....	.....	Blank	Blank	.....	Ch. Forsten.
Kieff	29.43	747.4	30.08	763.9	44.4	6.9	74	N	4	2	.....	.....	8	.....	.....	.....	.....	.....	Physical Cabinet.
Nikolaiev	29 99	761.7	30.06	763.5	50.4	10.2	60	N	18	8	.....	.....	1	.....	.....	.....	.....	.....	Kurdakof.
Kertch	29.92	759.9	29.94	760.4	54.9	12.7	94	NNW	7	3	.....	.....	7	.....	.....	.....	.....	.....	Lagorio.
Moscow	29.50	749.4	30.07	763.7	40.5	4.7	89	S	9	4	.....	.....	5	.....	.....	.....	.....	.....	Meteorological Obs.
Lugan	29.80	756.8	30.00	762.0	46.9	8.3	92	ESE	13	6	.....	.....	10	.....	.....	Blank	Blank	.....	Meteorological Obs.
Archangel	29.69	754.0	29.71	754.5	38.8	3.8	97	SE	22	10	.....	.....	10	.....	.....	.....	.....	.....	Ogorodnikof.
Tiflis	28.60	726.3	30.01	762.2	58.1	14.5	78	Calm	0	0	.....	.....	8	.....	.....	.....	.....	.....	Physical Observatory.
Astrakhan	30.26	768.5	30.17	766.4	44.6	7.0	57	ESE	13	6	.....	.....	7	.....	.....	.....	.....	.....	Sebastianof.
Kasan	30.02	762.5	30.30	769.6	36.9	2.7	48	SSE	9	4	.....	.....	10	.....	.....	.....	.....	.....	Physical Cabinet.
Orenburg	30.24	768.1	30.65	778.4	25.0—	3.9	66	NNE	11	5	.....	.....	10	.....	.....	.....	.....	.....	Tschernischef.
Ekaterinburg	29.50	749.3	30.48	774.2	38.5	3.6	28	WSW	2	1	.....	.....	5	.....	.....	.....	.....	.....	Meteorological Obs.
Nukuss	30.04	763.1	30.29	769.3	38.1	3.4	45	NE	9	4	.....	.....	1	.....	.....	.....	.....	.....	
Kasaly	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Bobrof.
Tashkend	28.66	727.9	30.43	772.9	42.4	5.8	94	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Michelson.
Barnaul	30.03	762.8	30.61	777.6	18.9—	7.3	78	SW	9	4	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Yeniseisk	30.01	762.3	30.36	771.1	17.4—	8.1	93	SW	7	3	.....	.....	10	.....	.....	.....	.....	Snowing	Marks.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Usolzef.
Oorga	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Mossin.
Peking, (China)	29.99	761.7	30.13	765.3	41.5	5.3	91	N	13	6	.....	.....	10	.....	.....	.....	.....	Raining	Physical Observatory.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nikolaievsk, on the Amoor	.....	.....	.....	.....	17.6—	8.0	94	W	16	7	.....	.....	10n	.....	.....	.....	.....	Snowing	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Ekaterinburg, 306.4? m., or 1,005.2? ft.; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft.

SPANISH SERIES.

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

Barcelona, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Rave, Director.
Bilbao, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Manuel de Naveran
Burgos, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Domingo Martin y Perez.
Madrid, Royal Observatory	27.91	709.0	30.11	764.8	65.8	18.8	64	NE	3.0	1.33	.....	0	8	.....	.....	Inap.	Inap.	Cloudy	The Staff.
Murcia, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Olayo Diaz, Director.
Santiago, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.96	761.0	30.03	762.6	75.1	23.9	89	Calm	0	0	.....	0	1k	.....	.....	0	0	Clear	Benito Vines, S. J.
San Fernando, Naval Obs'y.	30.04	762.9	30.13	765.4	76.1	24.5	54	E	7.6	3.4	.....	0	2	.....	NE	0	0	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.	.....	.....	29.84	757.9	82.8	28.2	84	NE	14.1	6.32	.....	2cs	8kn	NE	NE	0.463	11.50	D. clouds	Leonardo de Tejeda, Chief of Engineers.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. m. instead of 8:19 a. m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Low'r 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.66	753.3	29.70	754.3	32.7	0.4	.....	Calm	.....	.....	0	.....	8	.....	.....	0.118	3.0	.....	
Umea	29.54	750.2	29.59	751.5	36.3	2.4	100	S	.....	.....	2	.....	10	.....	.....	0	0	.....	
Hernosand	29.48	748.8	29.53	750.1	39.9	4.4	93	SSE	.....	.....	2	.....	10	.....	.....	0	0	.....	
Stockholm	29.49	749.1	29.67	753.6	43.2	6.2	81	SSE	.....	.....	4	.....	10	.....	.....	0	0	Foggy	
Wisby	29.74	755.3	29.80	756.8	45.3	7.4	91	WSW	.....	.....	7	.....	10	.....	.....	0	0	.....	
Sub-Series.																			
Upsala	29.56	750.8	29.63	752.7	43.3	6.3	97	S	13.4	6.0	.....	.....	10	.....	SSW	0.354	9.00	Raining	Dr. Hildebrandsson.

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

SWISS SERIES.

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

Geneva	28.71	729.1	30.13	765.3	53.8	12.1	64	NE	.....	.....	1	.....	7	.....	.....	0	0	Cloudy	The Observatory.
Zurich	28.47	723.2	30.12	765.1	50.0	10.0	66	NW	.....	.....	1	.....	10	.....	.....	0	0	Covered	The Observatory.
.....																			
.....																			
.....																			

Note.—For Geneva the corresponding departures from the normal values are: Barometer, +3.0 mm; Thermometer, +3.0 cent.; Relative Humidity, —11 per cent.

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

TURKISH SERIES.

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

Constantinople	.....	.....	29.74	755.5	55.2	12.9	93	N	27	12.0	.....	.....	10	.....	NE	3.897	99.0	.....	The Observatory.
Fao, (Persian Gulf)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salonica	.....	.....	29.95	760.7	56.1	13.4	.....	NW	.....	.....	4	.....	0	.....	.....	Blank	Blank	.....	B. Stefanides.
Valona	.....	.....	29.95	760.8	56.5	13.6	.....	NW	.....	.....	3	.....	0	.....	.....	0	0	Clear	A. Bertrand.
Varna	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Imperial Observatory.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.88	758.9	29.89	759.3	77.0	25.0	53	SW	.....	.....	4	.....	5ks	.....	SW	0.11	2.8	D. clouds	Prof. C. V. A. Van Dyck

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

CANADIAN SERIES.

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

Bathurst, N. B	28.96	735.6	29.03	737.3	43.9	6.6	80	SW	16.2	7.2	.....	0	.....	.....	.....	1.17	29.7	.....	Hon. J. Ferguson.
Brockville, Ontario	.....	.....	29.60	751.8	38	3.3	.....	W	5	2.2	.....	.....	8s	.....	W	0.84	21.3	Cloudy	W. R. Bigg.
*Chatham, N. B	.....	.....	29.08	738.6	44	6.7	71	SW	17	7.6	.....	2k	2ks	SW	SW	1.19	30.2	Fair	G. A. Blair.
Charlottetown, P. E. Island.	.....	.....	29.20	741.7	49	9.4	67	SW	18	8.0	.....	.....	8ks	.....	SW	0.900	22.86	Cloudy	H. J. Cundall, C. E.
Cornwall, Ontario	29.28	743.7	29.47	748.5	38.6	3.7	68	W	.....	.....	5	.....	10s	.....	.....	0	0	Cloudy	James Smith, M. A.
Dalhousie, N. B	28.98	736.1	29.01	736.8	38	3.3	96	W	.....	.....	2	.....	.....	.....	.....	0	0	Bright	H. A. Johnson.
Esquimault, B. C	29.82	757.4	29.87	758.7	45.8	7.7	96	Calm	.....	.....	.....	.....	10	.....	.....	0.06	1.5	Raining	W. H. Bevis.
*Father Point, Quebec	.....	.....	28.92	734.6	40	4.4	78	SW	48	21.5	.....	5k	8s	SW	SW	0.49	12.4	Clearing	J. McWilliams.
Fredericton, N. B	29.19	741.4	29.25	742.9	45.1	7.3	68	W	14.0	6.3	.....	ck	10ks	.....	W	1.995	50.68	Cloudy	Prof. Harrison.
*Fort Garry, Manitoba	.....	.....	30.13	765.3	10	— 8.9	95	N	13	5.8	.....	5k	5ks	N	N	0	0	Cloudy	James Stewart.
Goderich, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	H. J. Strang, M. A.
Granton, Ontario	28.68	728.5	29.80	756.9	34	1.1	79	W	.....	.....	3	.....	10n	.....	.....	0.27	6.9	Cloudy	James Grant.
*Halifax, N. S	29.21	741.9	29.35	745.5	49	9.4	84	W	17	7.6	.....	.....	10ks	.....	W	1.761	44.73	Cloudy	F. Allison, M. A.
Hamilton, Ontario	29.39	746.5	29.77	756.1	40.2	4.6	55	W	.....	.....	8	4ck	.....	W	.....	0	0	Cloudy	Geo. Dickson, M. A
Heart's Content, N. F	29.71	754.6	29.73	755.1	42	5.6	91	S	.....	.....	4	.....	10	.....	.....	0.13	3.3	Raining	E. Weedon.
*Kingston, Ontario	29.28	743.7	29.62	752.3	39	3.9	82	W	12	5.4	.....	2c	2ks	W	W	0.47	11.9	Fair	S. Woods, M. A.
Little Glace Bay, N. S	29.25	742.9	29.30	744.2	52.0	11.1	100	S	18	8.0	.....	.....	10n	.....	.....	1.15	29.2	Rain & snow	C. H. Rigby.
*Montreal, Quebec	29.21	741.9	29.41	747.0	38	3.3	67	W	24	10.7	.....	8k	5ks	W	S	1.03	26.2	Cloudy	C. H. MacLeod, C. E.
*Parry Sound, Ontario	28.96	735.6	29.67	753.6	31	— 0.6	89	NW	9	4.0	.....	8k	2ks	W	W	0.52	13.2	Cloudy	Rev. R. Mosley.
Peterboro, Ontario	28.90	734.0	29.66	753.4	36.7	2.6	90	W	.....	.....	1	10k	0	.....	.....	0.34	8.6	Cloudy	J. F. Jeffers, B. A.
Port Dover, Ontario	29.12	739.6	29.83	757.7	37	2.8	71	W	16	7.2	.....	10k	0	W	.....	0.04	1.0	Cloudy	H. Morgan.
Port Hastings, N. S	29.23	742.4	29.28	743.7	53	11.7	.....	W	9	4.0	.....	.....	.....	.....	.....	0	0	Dark	Peter Grant.
Port Stanley, Ontario	29.24	742.7	29.90	759.4	37	2.8	70	W	24	10.7	.....	.....	10n	.....	W	0.03	0.8	Cloudy	M. Payne.
*Quebec, Quebec	28 87	733.3	29.19	741.4	39	3.9	55	SW	38	17.0	.....	5k	2n	SW	SW	0.77	19.6	Fair	Capt. Ashe, R. N
*Rockliffe, Ontario	29.09	738.9	29.56	750.8	31	— 0.6	89	NW	12	5.4	.....	.....	8s	.....	NW	0.40	10.2	Light snow	W. H. McIntyre.
St. John, N. B	29.17	740.9	29.33	745.0	44	6.7	80	SW	15	6.7	.....	7k	0	.....	.....	0	0	Fair	G. Murdock, C. E.
*Saugeen, Ontario	28.97	735.8	29.08	738.9	39	3.9	91	NW	18	8.0	.....	.....	10ks	.....	W	0.55	14.0	Hailing	K. Stewart.
Stayner, Ontario	.....	.....	29.70	754.4	31	— 0.6	95	NW	5	2.2	.....	.....	10n	.....	NW	0.49	12.4	Light snow	R. J. Cole.
Stratford, Ontario	28.47	723.1	29.78	756.4	34.8	1.6	73	NW	18.0	8.0	.....	.....	10s	.....	.....	1.119	28.32	Cloudy	C. J. MacGregor, M. A.
*Sydney, C. B	29.23	742.4	29.26	743.2	53	11.7	91	SW	19	8.5	.....	.....	10n	.....	SW	1.25	31.7	Cloudy	T. C. Hill.
*Toronto, Ontario	29.34	745.2	29.73	755.1	38	3.3	74	W	22	9.8	.....	2ck	2n	W	W	0.21	5.3	Fair	Magnetic Observatory.
Windsor, N. S	29.24	742.7	29.33	745.0	48.0	8.9	78	SW	16	7.2	.....	cs	.....	.....	.....	0.87	22.1	Fair	Prof. John E. Oram.
Woodstock, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Montgomery.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	42.0	5.6	100	SE	.....	.....	.....	.....	10n	.....	.....	0.01	0.3	Raining	John Delany
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

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

UNITED STATES SERIES.

By authority of the SECRETARY OF WAR.

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

STATIONS.	BAROMETER. Corrected for instrum'tal error and temperature. Inches.	BAROMETER. Corrected for instrum'tal error and temperature. Millimeters.	BAROMETER. Reduced to sea-level. Inches.	BAROMETER. Reduced to sea-level. Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Upper. From—	CLOUDS. Direction. Lower. From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	WEATHER.	OBSERVER.
Albany, New York	29.42	747.3	29.65	753.1	45	7.2	60	NW	8	3.6		0	5ks		NW	0.52	13.2	Fair	
Alpena, Michigan	29.07	738.4	29.74	755.4	33	0.6	100	W	10	4.5			10n		W	0.31	7.9	Light snow.	
Atlantic City, New Jersey	29.93	760.2	29.95	760.7	46	7.8	61	W	12	5.4		1cs	0	W		0.59	15.0	Clear.	
Augusta, Georgia	30.03	762.7	30.23	767.6	49	9.4	78	NW	3	1.3		8c;ck;cs	2s	W; SW	Calm	0.01	0.3	Cloudy	
Baltimore, Maryland	29.94	760.5	29.99	761.7	46	7.8	54	SW	4	1.8		Haze	5s	Calm	W	0.62	13.2	Fair	
Barnegat, New Jersey	29.89	759.2	29.91	759.7	46	7.8	61	W	20	8.9		0	0			0.69	17.5	Clear	
Bismarck, Dakota	28.30	718.8	30.09	764.3	20	— 6.7	84	NW	7	3.1			10s		Calm	Inap.	Inap.	Cloudy	
Boise City, Idaho	27.06	687.3	29.69	754.1	38	3.3	90	NE	1	0.4			10n		Calm	0.03	0.8	Light rain	
Boston, Massachusetts	29.45	748.0	29.60	751.8	48	8.9	63	NW	18	8.0		1cs	Haze			1.38	35.1	Clear	
Brackettville, Texas	29.05	737.9	30.11	764.8	44	6.7	67	Calm	0	0		5k	0	Calm		0	0	Fair	
Breckenridge, Minnesota	29.10	739.1	30.17	766.3	18	— 7.8	84	NW	7	3.1			10ks		NW	0.02	0.5	Cloudy	
Brownsville, Texas	30.20	767.1	30.26	768.6	56	13.3	74	N	4	1.8			10s		Calm	Inap	Inap.	Cloudy	
Buffalo, New York	29.04	737.6	29.75	755.6	40.0	4.4	73	W	36	16.1		0	8s		SW	0.15	3.8	Fair	
Burlington, Vermont	29.27	743.4	29.51	749.8	47	8.3	54	W	19	8.5			10s		W	0.58	14.7	Cloudy	
Cairo, Illinois	29.89	759.2	30.31	769.9	38	3.3	71	S	4	1.8		0	0			0	0	Clear	
Camp Grant, Arizona	25.18	639.6	29.98	761.5	58	14.4	15	NW			1	0	0			0	0	Clear	
Camp Verde, Arizona	26.74	679.2	30.22	767.6	35	1.7	70	Calm				0	0			0	0	Clear	
Campo, California																			
Cape Hatteras, N. Carolina	30.00	762.0	30.01	762.2	54	12.2	49	N	12	5.4		8ck	0	W		0.07	1.8	Fair	
Cape Henry, Virginia	30.00	762.0	30.02	762.5	51	10.6	53	NW	18	8.0		5ck	5s	NW	Calm	0.67	17.0	Cloudy	
Cape Lookout, N. Carolina	30.10	764.5	30.12	765.0	54	12.2	43	N	20	8.9		5c;ck	0	W		0	0	Fair	
Cape May, New Jersey	29.94	760.5	29.97	761.2	49	9.4	57	W	36	16.1		5c	0	W		0.30	7.6	Fair	
Charleston, South Carolina	30.10	764.5	30.17	766.3	56	13.3	45	N	12	5.4		2cs	2s	W	W	0.02	0.5	Fair	
Cheyenne, Wyoming	23 96	608.6	29.90	759.4	22	— 5.6	85	W	4	1.8		5c	0	W		0	0	Fair	
Chicago, Illinois	29.36	745.7	30.08	764.0	32	0.0	60	W	8	3.6		0	1s		Calm	0	0	Clear	
Cincinnati, Ohio	29.49	749.0	30.16	766.1	39	3.9	73	SW	8	3.6		0	0			0.01	0.3	Clear	
Cleveland, Ohio	29.27	743.4	30.02	762.5	35	1.7	52	SW	18	8.0			10s		SW	Inap	Inap.	Cloudy	
Concho, Texas	28.26	717.8	30.01	762.2	43	6.1	75	S	8	3.6		8cs	0	S		0	0	Cloudy	
Corsicana, Texas	29.80	756.9	30.29	769.4	47	8.3	85	Calm	0	0		Haze	2s	Calm	Calm	0	0	Fair	
Davenport, Iowa	29.47	748.5	30.14	765.5	33	0.6	69	W	4	1.8		Haze	0	Calm		0.01	0.3	Clear	
Denison, Texas	29.45	748.0	30.27	768.8	44	6.7	75	SW	4	1.8		0	1s		Calm	0	0	Clear	
Denver, Colorado	24.73	628.1	29.95	760.7	30	— 1.1	68	Calm	0	0			8s		Calm	0	0	Cloudy	
Detroit, Michigan	29.20	741.7	29.88	758.9	36	2.2	65	W	12	5.4			10s		W	0.02	0.5	Threatening	
Dodge City, Kansas	27.41	696.2	29.79	756.7	30	— 1.1	78	SE	1	0.4		0	2s		Calm	0	0	Clear	
Dubuque, Iowa	29.36	745.7	30.09	764.3	30	— 1.1	89	W	6	2.7		0	0			0.05	1.3	Clear	
Duluth, Minnesota	29.30	744.2	30.00	762.0	28	— 2.2	77	Calm	0	0		Haze	5s	Calm	Calm	Inap.	Inap.	Fair	
Eagle Pass, Texas	29.45	748.0	30.21	767.3	51	10.6	79	SE	3	1.3			10s		SW	0	0	Cloudy	
Eastport, Maine	29.25	742.9	29.32	744.7	48	8.9	63	SW	18	8.0		0	8s		SW	2.37	60.2	Fair	
Erie, Pennsylvania	29.14	740.1	29.87	758.7	34	1.1	90	SW	16	7.2			10n		W	1.41	35.8	Sleeting	
Escanaba, Michigan	29.17	740.9	29.85	758.2	30	— 1.1	67	W	12	5.4			10s		W	0.02	0.5	Cloudy	
Florence, Arizona	28.31	719.1	29.94	760.5	55	12.8	12	E				5c	0	E		0	0	Fair	
Fort Bayard, New Mexico	24.06	611.1	30.06	763.5	32	0.0	42	NW	12	5.4		0	0			0	0	Clear	
Fort Craig, New Mexico	25.56	649.2			25	— 3.9	75	NW	1	0.4		0	0			0	0	Clear	
Fort Gibson, Indian Ter	29.66	753.4	30.22	767.6	36	2.2	80	E	6	2.7		0	0			0	0	Clear	
Fort Griffin, Texas	28.92	734.6	30.24	768.1	40	4.4	82	Calm	0	0		0	0			0	0	Clear	
Fort St. Michael, Alaska																			
Fort Sill, Indian Territory	28.95	735.3	30.11	764.8	36	2.2	90	Calm	0	0		0	0			0	0	Clear	
Galveston, Texas	30.24	768.1	30.28	769.1	56	13.3	62	NE	12	5.4			10s		Calm	0	0	Cloudy	
Grand Haven, Michigan	29.28	743.7	29.95	760.7	37	2.8	62	W	30	13.4			10n		W	0.21	5.3	Light sleet	
Indianapolis, Indiana	29.35	745.5	30.16	766.1	35	1.7	80	SW	5	2.2		0	2s		SW	0.01	0.3	Fair	
Indianola, Texas	30.27	768.8	30.30	769.6	58	14.4	100	NE	19	8.5			10n		Calm	0.17	4.3	Light rain	
Jacksboro, Texas																			
Jacksonville, Florida	30.12	765.0	30.15	765.8	55	12.8	55	NW	8	3.6		0	0			Inap.	Inap.	Clear	
Keokuk, Iowa	29.50	749.3	30.15	765.8	36	2.2	80	Calm	0	0		1ck	4s	Calm	Calm	0	0	Fair	
Key West, Florida	29.99	761.7	30.02	762.5	79.0	26.1	78	NE	5	2.2		2c	0	Calm		0	0	Fair	
Kittyhawk, North Carolina	30.06	763.5	30.08	764.0	49	9.4	64	NW	12	5.4		5ck	2s	NW	NW	0.16	4.1	Fair	
Knoxville, Tennessee	29.21	741.9	30.26	768.6	37	2.8	80	Calm	0	0			Fog		Calm	0	0	Dense fog	
La Crosse, Wisconsin	29.28	743.7	30.04	763.0	32	0.0	89	W	8	3.6			10n		W	0.04	1.0	Light snow	
La Mesilla, New Mexico	26.14	663.9	30.29	769.4	30	— 1.1	36	NE	1	0.4		0	0			0	0	Clear	
Laredo, Texas					55	12.8	80	Calm	0	0			10s		W	0.11	2.8	Cloudy	
Leavenworth, Kansas	29.26	743.2	30.14	765.5	35	1.7	70	S	1	0.4		0	0			0	0	Clear	
Los Angeles, California	29.59	751.6	29.93	760.2	53	11.7	68	NE	6	2.7		0	0			0	0	Clear	
Louisville, Kentucky	29.64	752.8	30.22	767.6	40	4.4	72	S	4	1.8		0	Fog		Calm	Inap.	Inap.	Clear	
Lynchburg, Virginia	29.38	746.2	30.06	763.5	51	10.6	34	SW	1	0.4		5c	1s	SW	Calm	0.23	5.8	Fair	
Maricopa Wells, Arizona					30	— 1.1	48	N				0	0			0	0	Clear	
Marquette, Michigan	29.09	738.9	29.81	757.2	30	— 1.1	68	W	10	4.5			10s		Calm	0.27	6.9	Cloudy	
Mason, Texas	28.58	725.9	30.41	772.4	43	6.1	83	Calm	0	0		0	5s			0	0	Fair	
Memphis, Tennessee	29.99	761.7	30.32	770.1	42	5.6	83	Calm	0	0		2c	8m'c;fg	SW	Calm	0	0	Fair	
Milwaukee, Wisconsin	29.36	745.7	30.07	763.8	29	— 1.7	78	W	12	5.4		0	1ks			0.02	0.5	Clear	
Mobile, Alabama	30.25	768.3	30.30	769.6	51	10.6	68	N	10	4.5			10s		W	0	0	Cloudy	
Montgomery, Alabama	30.05	763.3	30.29	769.4	48	8.9	70	N	5	2.2		10cs	Haze	W	Calm	0	0	Cloudy	
Morgantown, West Virginia	28.99	736.3	30.07	763.8	40	4.4	47	SW	20	8.9		0	2s		SW	0.08	2.0	Fair	
Mt. Washington, N. H.	22.99	583.9	29.35	745.5	20	— 6.7	100	NW	114	51.0			Fog		NW	0.77	19.6	Foggy	
Nashville, Tennessee	29.75	755.6	30.32	770.1	37	2.8	90	NW	1	0.4		1cs	Haze	SW	Calm	0	0	Clear	
New Haven, Connecticut	29.64	752.8	29.76	755.9	48	8.9	56	W	15	6.7		Haze	0			1.75	44.5	Clear	
New London, Connecticut	29 69	754.1	29.74	755.4	48	8.9	56	W	22	9.8		0	0			0.47	11.9	Clear	
New Orleans, Louisiana	30.22	767.6	30.28	769.1	55	12.8	50	NE	14	6.3			10s		W	Inap.	Inap.	Cloudy	
Newport, Rhode Island	29.68	753.9	29.73	755.1	49	9.4	57	SW	29	13.0		0	0			1.18	30.0	Clear	
New York, New York	29.68	753.9	29.85	758.2	46	7.8	54	NW	21	9.4		2k	0	W		0.74	18.8	Clear	
Norfolk, Virginia	30.04	763.0	30.10	764.5	47	8.3	62	W	7	3.1		10ck	0	NW		0.49	12.4	Cloudy	
North Platte, Nebraska	27.10	688.3	29.78	756.4	28	— 2.2	88	N	4	1.8		5c	0	NW		0	0	Fair	
Olympia, Washington Ter.	29.82	757.4	29.86	758.4	46	7.8	92	Calm	0	0			10s		Calm	0.14	3.6	Cloudy	
Omaha, Nebraska	28.98	736.1	30.09	764.3	35	1.7	80	Calm	0	0			10s		NW	0	0	Cloudy	
Oswego, New York	29.35	745.5	29.97	753.6	43	6.1	75	W	28	12.5			10n		W	0.51	13.0	Light rain	
Pembina, Dakota	29.27	743.4	30.16	766.1	15	— 9.4	83	NW	6	2.7			10ks		NW	0.02	0.5	Cloudy	
Philadelphia, Pennsylvania	29.89	759.2	29.95	760.7	45	7.2	60	W	14	6.3		0	0			0.49	12.4	Clear	
Phœnix, Arizona					43	6.1	20	E				8c	0	W		0	0	Cloudy	
Pike's Peak, Colorado	17.67	448.8	29.88	758.9	12	—11.1	61	W	18	8.0		8k	0	W		0	0	Fair	
Pioche, Nevada	23.90	607.0	29.67	753.6	38	3.3	45	S	6	2.7			10s		Calm	0	0	Cloudy	
Pittsburg, Pennsylvania	29.18	741.2	30.01	762.2	37	2.8	71	W	20	8.9			10ks		W	0.15	3.8	Cloudy	
Port Huron, Michigan	29.15	740.4	29.83	757.7	35	1.7	80	W	12	5.4			10ks		W	0.05	1.3	Threatening	
Portland, Maine	29.42	747.3	29.47	748.5	48	8.9	49	SW	15	6.7		2k	Haze	W		0.77	19.6	Fair	
Portland, Oregon	29.89	759.2	29.98	761.5	46	7.8	92	Calm	0	0			10s		Calm	0.47	11.9	Cloudy	
Prescott, Arizona	24.71	627.6	30.07	763.8	36	2.2	53	Calm				2c	0	Calm		0	0	Fair	
Punta Rassa, Florida	30.04	763.0	30.05	763.3	75	23.9	85	N	12	5.4		2cs	2ks	Calm	Calm	0	0	Fair	
Red Bluff, California	29.68	753.9	30.04	763.0	48	8.9	92	N	2	0.9			10n		Calm	0.14	3.6	Light rain	
Rochester, New York	29.08	738.6	29.69	754.1	41	5.0	57	W	22	9.8		8k	2s	W	W	0.06	1.5	Cloudy	
Roseburg, Oregon	29.40	746.7	29.98	761.5	47.5	8.6	96	Calm	0	0			10s		Calm	0.47	11.9	Cloudy	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Sacramento, California	29.96	761.0	30.05	763.3	47	8.3	92	W	1	0.4	.....	0	2ks	.....	SW	0.04	1.0	Fair	
St. Louis, Missouri	29.61	752.1	30.21	767.3	38	3.3	72	SW	12	5.4	.....	0	0	.....	.....	0	0	Clear	
St. Marks, Florida	30.17	766.3	30.19	766.8	51	10.6	64	N	7	3.1	.....	0	2s	.....	Calm	0.15	3.8	Clear	
St. Paul, Minnesota	29.16	740.7	30.03	762.7	24	—4.4	87	W	5	2.2	.....	0	1s	.....	Calm	Inap.	Inap.	Clear	
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salt Lake City, Utah	25.51	647.9	29.84	757.9	44	6.7	52	SE	2	0.9	.....	.....	10s	.....	Calm	0	0	Cloudy	
San Antonio, Texas	29.55	750.6	30.15	765.8	54	12.2	80	N	2	0.9	.....	5ck	0	NW	.....	0	0	Cloudy	
San Diego, California	29.90	759.4	29.97	761.2	54	12.2	73	NE	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Sandusky, Ohio	29.31	744.5	30.00	762.0	37	2.8	62	SW	18	8.0	.....	.....	10ks	.....	W	0.03	0.8	Cloudy	
Sandy Hook, New Jersey	29.83	757.7	29.86	758.4	48	8.9	62	W	32	14.3	.....	0	0	.....	.....	1.32	33.5	Clear	
San Francisco, California	30.00	762.0	30.07	763.8	50	10.0	86	W	4	1.8	.....	Haze	4s	.....	Calm	0.08	2.0	Fair	
Santa Fé, New Mexico	23.28	591.3	29.82	757.4	28.5	—1.9	67	NE	1	0.4	.....	0	1s	.....	W	0	0	Clear	
Savannah, Georgia	30.07	763.8	30.17	766.3	51	10.6	65	N	12	5.4	.....	5ck	0	SW	.....	Inap.	Inap.	Fair	
Shreveport, Louisiana	30.10	764.5	30.33	770.4	48	8.9	85	Calm	0	0	.....	2cs	0	Calm	.....	0	0	Fair	
Smithville, North Carolina	30.14	765.5	30.17	766.3	51	10.6	59	N	4	1.8	.....	8ck	0	SW	.....	0.02	0.5	Cloudy	
Springfield, Massachusetts	29.52	749.8	29.64	752.8	51	10.6	52	W	13	5.8	.....	7k	0	W	.....	1.25	31.7	Fair	
Stanwix, Arizona	.....	.....	.....	.....	38	3.3	45	N	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Stockton, Texas	27.06	687.3	30.06	763.5	30	3.9	71	S	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Thatcher's Island, Mass	29.53	750.0	29.58	751.3	47	8.3	62	W	28	12.5	.....	0	0	.....	.....	0.85	21.6	Clear	
Toledo, Ohio	29.28	743.7	29.97	761.2	38	3.3	63	W	16	7.2	.....	.....	10s	.....	W	0.08	2.0	Cloudy	
Tucson, Arizona	27.48	698.0	30.03	762.7	45	7.2	34	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Tybee Island, Georgia	30.12	765.0	30.15	765.8	55	12.8	68	NW	18	8.0	.....	2ck	0	NW	.....	0	0	Clear	
Umatilla, Oregon	29.63	752.6	.....	.....	40	4.4	100	W	4	1.8	.....	.....	10n	.....	Calm	0.27	6.9	Light rain	
Vicksburg, Mississippi	30.07	763.8	30.34	770.6	48	8.9	70	NE	3	1.3	.....	10k	0	SW	.....	0	0	Cloudy	
Virginia City, Montana	24.11	612.4	29.59	751.6	33	0.6	69	SE	4	1.8	.....	.....	10s	.....	Calm	0	0	Cloudy	
Visalia, California	29.66	753.4	30.04	763.0	47	8.3	100	Calm	0	0	.....	0	0	.....	.....	0.08	2.0	Clear	
Washington, D. C	29.93	760 2	30.03	762.7	44.5	6.9	56	W	6	2.7	.....	1cs	0	SW	.....	0.48	12.2	Clear	
Wickenburg, Arizona	.....	.....	.....	.....	31	—0.6	28	W	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Wilmington, N. Carolina	30.07	763.8	30.15	765.8	49	9.4	57	N	4	1.8	.....	5c	0	NW	.....	0.11	2.8	Fair	
Winnemucca, Nevada	25.53	648.4	29 89	759.2	39	3.9	91	SW	8	3.6	.....	.....	10ks	.....	Calm	0.08	2.0	Threatening	
Wood's Holl, Mass	29.64	752.8	29.70	754.4	52	11.1	60	W	24	10.7	.....	0	0	.....	.....	0.39	9.9	Clear	
Yankton, Dakota	28.87	733.3	30.24	768.1	24	— 4.4	80	N	4	1.8	.....	8os	5s	NW	NW	0	0	Cloudy	
Yuma, Arizona	29.76	755.9	29.93	760.2	49	9.4	42	NE	1	0.4	.....	8k	0	.....	.....	0	0	Fair	
SUB-SERIES.																			
York Factory, B. A.	29.89	759.2	29.94	760.5	4.0	—15.6	87	N	16	7.2	.....	3k	6s	W	W	1.10	27.9	Threatening	J. Fortescue, W. Wood
Havana, Cuba, W. I.	29.96	761.0	29.98	761.5	79	26.1	82	Calm	0	0	.....	0	2k	.....	SE	0	0	Fair	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.08	764.0	30.09	764.3	77	25.0	86	Calm	0	0	.....	5c	5n	E	E	1.58	40.1	.....	James Gall.
Navassa, W. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. M. Everett.
St. Thomas, W. I.	.....	.....	.....	.....	82	27.8	87	NE	3	1.3	.....	2c	2n	E	.....	0.10	2.5	Cloudy	G. O. Gellich.
Paramaribo, D. Guiana, S. A.	.....	.....	29.92	760.0	82	27.8	83	SE	.....	.....	2	5k	7ks	E	.....	0.040	1.02	Fair	C. J. Hering.
Batavia, Dutch Guiana, S. A.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Dr. H. Groot.
Medellin, Colombia, S. A.	25.19	639.8	.....	.....	63.0	17.2	87	NW	.....	.....	1	.....	10s;ks	.....	.....	0.43	10.9	Cloudy	Thomas Herran.
Honolulu, Oahu, H. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Daniel Smith.
Makawao, Maui, H. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,560 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.5 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.38 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

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

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

STATIONS AND VESSELS.	BAROMETER. As reported.* Inches.	BAROMETER. As reported.* Millimeters.	BAROMETER. Attached Thermometer. Fahrenheit.	BAROMETER. Attached Thermometer. Centigrade.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Up'er From—	CLOUDS. Direction. Low'r From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	SEA-SWELL. Character.	SEA-SWELL. Direction from—	WEATHER.	OBSERVER.
Navy Yard Mare Island, Cal.	30.04	763.0	49	9.4	48	8.9	92	WNW	5	2.2	.....	.....	9n	.....	Calm	0.4	10.	.....	.....	.....	
Navy Yard, Pensacola, Fla.	30.30	769.6	.....	.....	54	12.2	67	NNE	7	3.1	.....	.....	10	.....	W	0	0	.....	.....	D. clouds.....	
Navy Yard, Portsmouth, N.H	29.67	753 6	62	16.7	47	8.8	48	WSW	6	2.7	.....	.....	0	.....	.....	0.63	16.0	.....	.....	Clear	
Naval Hospital, Yokohama, Japan.....	29.86	758.4	57	13.9	53	11 7	59	NNW	.....	.....	1	.....	0	.....	.....	0	0	.....	.....	Clear.....	
Adams. S. 40° 19′ 54″, W. 58° 56′ 30′′..	29.55	750.6	65	18.3	56	13.3	87	W	.....	.....	2	....	1	.....	W	0	0	Light	N	D. clouds.....	
Alert. Misima Nada, Japan.....	30.14†	765.5†	66	18.9	66	18.9	69	E	.....	.....	2	.....	1	.....	E	.....	.....	Smooth	.....	Hazy.....	
Alliance, Constantinople, Turkey.	29.83	757.7	60	15.6	58	14.4	70	NE	.....	.....	2–5	.....	10	.....	NE	.....	.....	.....	.....	Rainy.....	
Ashuelot. Tientsin, China.....	30.07	763.8	44	6.7	42	5.6	100	Calm	.....	.....	0	.....	10	.....	Calm	.....	.....	Smooth	.....	D. clouds.....	
Canonicus, New Orleans, La.....	30.20	767.1	45	7.2	56	13.3	57	N	.....	.....	4	.....	10	.....	N&E	.....	.....	.....	.....	Cloudy.....	
Colorado, New York, N. Y.....	29.94	760.5	70	21.1	48	8.9	63	W	14	6.3	.....	.....	3	.....	W	1.32	33.5	.....	.....	Fair.....	
Despatch, Constantinople, Turkey.	29.90	759.4	85	29.4	56	13.3	94	NE	.....	.....	5–6	.....	10	.....	N&E	.....	.....	.....	.....	Rainy.....	
Franklin, Norfolk, Va.....	30.16	766.1	48	8.9	48	8.9	57	W	7	3.1	.....	.....	4	.....	W	0.4	10.	.....	.....	Clear.....	
Gettysburg, Syracuse, Sicily.....	29.90‡	759.4‡	.....	.....	70	21.1	95	ENE	.....	.....	1–2	.....	1	.....	Calm	0	0	.....	SE	D. clouds.....	
Guard, N. 39° 48′, W. 70° 09′.....	30.00	762.0	58	14.4	54	12.2	??	NW	.....	.....	4–7	.....	5	NW	SE	.....	.....	Rough	N&W	Squally	
Lackawana, Port Townsend, W. T....	29.86	758.4	.....	.....	50	10.0	86	Calm	.....	.....	0	.....	10	.....	.....	.....	.....	.....	.....	Drizzling.....	
Marion, Smyrna, Turkey.....	29.65	753.1	65	18.3	64	17.8	68	S	.....	.....	0–1	.....	8	.....	S	Heavy	Heavy	Smooth	.....	D. clouds. ...	
Michigan, Erie, Pa.....	29.32	744.7	48	8.9	35	1.7	90	SW	.....	.....	6	.....	10	.....	SW	.....	.....	.....	.....	Snowing.....	
Monocacy, Yokohama, Japan.....	29.81	757.2	54	12.2	55	12.8	39	NE	.....	.....	2	.....	1	.....	.....	.....	.....	.....	.....	D. clouds.....	
Monongahela, Gibraltar, Spain.....	30.22	767.6	68	20.0	68	20.0	79	S&W	.....	.....	0–1	.....	cs	.....	.....	.....	.....	Smooth	.....	D. clouds.....	
New Hampshire, Port Royal, S.C.....	30.28	769.1	.....	.....	55	12.8	68	NW	17	7.6	.....	.....	5	.....	NW	0	0	.....	.....	D. clouds.....	
Omaha, S. 16° 10′, W. 77° 49′.....	30.09	764.3	70.5	21.4	69	20.6	80	E	10	4.5	.....	.....	0	.....	.....	0	0	Smooth	.....	Clear	
Onward, Callao, Peru.....	30.02	762.5	70	21.1	68	20.0	90	SE	.....	.....	3	.....	10	.....	.....	.....	.....	Long	W	Hazy.....	
Ossipee, Hampton Roads, Va.....	30.11	764.8	68	20.0	53	11.7	73	W	.....	.....	3	.....	7	.....	W	.....	.....	.. ..	.....	D. clouds.....	
Palos, Shanghai, China.....	30.11	764.8	64	17.8	61	16.1	88	SE	.....	.....	1–2	.....	10	.....	Calm	.....	.....	.....	.....	Cloudy	
Pensacola, Mare Island, Cal.....	30.13	765.3	.....	.....	51	10.6	93	Var.	.....	.....	0–1	.....	9	.....	.....	0.4	10.	.....	.....	Overcast.....	
Plymouth, Norfolk, Va.....	30.07	763.8	65	18.3	47	8.3	85	WNW	.....	.....	2	.....	8	.....	.....	.....	.....	.....	.....	Overcast.....	
Ranger, Shanghai, China.....	30.16	766.1	.....	.....	63	17.2	83	E	.....	.....	2	.....	10	.....	E	.....	.....	.....	.....	Cloudy.....	
Rio Bravo, Brownsville, Texas.....	30.13	765.3	.....	.....	67	13.9	81	NNW	.....	.....	3	.....	9	.....	SE	.....	.....	.....	.....	D. clouds.....	
Santee, Annapolis, Md.....	30.05	763.3	55	12.8	46	7.8	54	W	.....	.....	3	.....	2	.....	.....	0.78	19.8	.....	.....	Clear.....	
Saratoga, Hampton Roads, Va.....	30.51†	774.9†	.....	.....	56	13.3	100	W	.....	.....	3	.....	7	.....	SW	.....	.....	.....	.....	Rainy...	
St. Louis, League Island, Pa	29.87	758.7	47	8.3	47	8.3	70	W	17	7.6	.....	.....	*0	.....	.....	1.28	32.5	.....	.....	Clear.....	
Swatara, Hampton Roads, Va.....	30.10	764.5	.....	.....	52	11.1	66	W	.....	.....	2	.....	9	.....	W	.....	.....	.....	.....	D. clouds.....	
Tennessee, Yokohama, Japan.....	30.05	763.3	67	19.4	53	11.7	54	N	6	2.7	.....	.....	0	.....	.....	0	0	Slight	N&E	Blue sky.....	
Trenton, Villefranche, France.....	30.21	767.3	66	18.9	64	17.8	68	NW	5	2.2	.....	.....	1	.....	NW	0	0	.....	.....	D. clouds....	
Vandalia, Villefranche, France.,...	30.17	766.3	64	17.8	63	17.2	67	Calm	0	0	.....	.....	3	.....	Calm	.....	.....	.....	.....	D. clouds.....	
Wabash, Boston, Mass.....	29.63	752.6	56	13.3	52	11.1	33	W	16	7.2	.....	.....	0	.....	.....	1.23	31.2	.....	.....	Blue sky.....	
Wyoming, Washington, D. C.....	30.30†	769 6†	.....	.....	55	12.8	.....	WNW	.....	.....	3	.....	0	.....	.....	.....	.....	.....	.....	Blue sky.....	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. ‡ Barometer corrected for instrumental error and reduced to sea-level.

UNITED STATES MARINE SERIES.

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

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Character.	Direction from—		
S. S. Alaska																			Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama, N. 26° 17′ 11″, W. 113° 51′ 13″			29.72	754.9	73	22.8	63	NE			3		0			Light	N	Clear.	Capt. Howard.
S. S. City of Peking, Yokohama, Japan			30.11*	764.8*	51	10.6	86	N			2		0			Smooth		Blue sky.	Lt. Z. L. Tanner, U.S.N.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio																			Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

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

WHITE STAR LINE MARINE SERIES.

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

S. S. Auruatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			

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

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

S. S. Belgic, N. 30° 42′, W. 173° 25′			30.19†	766.8†				Var.			2		Light		WSW	Moderate	SE	Fine	Capt. John Metcalf.
S. S. Gaelic																			Capt. W. H. Kidley.
S. S. Oceanic																			Capt. H. Parsell

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

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

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

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig																			Capt. K. Undütsch.
S. S. Nürnberg, N. 37° 32′, W. 70° 16′			29.93	760.2	761.0	16.1	68	NNW			6		kn		NE	Rough	NW	Overcast.	Capt. A. Jaeger.
S. S. Ohio, N. 51° 17′, E. 1° 49′			30.08	764.0	51.5	10.8	72	NW			6					Smooth		Blue sky.	Capt. G. Meyer.

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

UNITED STATES MARINE SERIES.—Continued.

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

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Lo'wr	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second	0—10.	0—10.	0—10.	From—	From—	Character.	Direction From—		
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, Philadelphia, Pa			29.91*	759.7*	50	10.0	72	NW			4		2		NW				Captain Sargent.
S. S. Ohio. N. 41° 47′, W. 64° 47′			29.73	755.1	56	13.3	87	WNW			6		10?		WNW	Rough	SW	Clear?	Captain Morrison.
S. S. Pennsylvania. N. 50° 38′, W. 22° 08′			29.74†	755.4†	54	12.2	93	W			6		5		W	Large	SW	Cloudy	Captain Harris.

NOTE.—The originals give the barometer as read off; the wind-force by the scale 0 to 12. *Aneroid; correction for elevation applied, instrumental error not known. †Corrected for temperature and elevation, instrumental error not known.

RED STAR LINE MARINE SERIES.

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

S. S. Nederland																			Capt. Randle.
S. S. Switzerland, N. 49° 52′, W. 6° 54′			30.27*	768.8*	55	12.8		W	5	2.2			5		ENE	Light	NW	Fair	Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

* Aneroid; regulated to standard at Antwerp.

ALLAN LINE MARINE SERIES.

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

S. S. Hibernian																			Capt. W. Richardson.
S. S. Scandinavian																			

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, Provincetown, Mass.			29.62	752.3	51	10.6	65	WSW	28	12.5			0						Capt. James Jorgensen.

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

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

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

Albert J. Myer

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

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON NOVEMBER 4, 1877.

7:35 A. M. WASHINGTON mean time.

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

1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:18 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:38 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.

1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:38 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:28 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours	.....	.....	30.10	764.6	71.8	22.1	66	N	.....	.....	1	.....	1	.....	.....	.....	.....	Very fair.....	Michel.
Algiers	.....	.....	30.05	763.3	69.1	20.6	68	N	.....	.....	2	.....	2	.....	.....	0	0	Fair.....	Peter.
La Calle	.....	.....	30.08	764.1	70.7	21.5	76	NNW	.....	.....	1	.....	7	.....	.....	0	0	Very cloudy	Fleury.
Tunis	.....	.....	30.12	765.0	69.1	20.6	80	E	.....	.....	2	.....	3	.....	.....	.....	.....	Pretty fair..	Jacques.
Sfax	.....	.....	30.11	764.8	66.2	19.0	.....	NW	.....	.....	1	.....	2	.....	.....	0	0	Fair.....	Husson.
Saida	.....	.....	30.17	766.4	72.3	22.4	28	W	.....	.....	1	.....	2	.....	.....	0	0	Fair.....	Millot.
Tebessa	.....	.....	30.07	763.8	.....	.....	.....	Calm	.....	.....	0	.....	0	.....	.....	.....	.....	Clear	Bourgeois.
Geriville	.....	.....	30.09	764.2	66.2	19.0	41	N	.....	.....	2	.....	1	.....	.....	0	0	Very fair.....	Lemaillot.
Laghouat	.....	.....	30.11	764.8	73.4	23.0	37	N	.....	.....	2	.....	4	.....	.....	0	0	Cloudy.....	Guyot.
Biskra	.....	.....	30.13	765.2	75.0	23.9	44	S	.....	.....	2	.....	6	.....	.....	0	0	Cloudy.....	Kuntz.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

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

AUSTRIAN SERIES.

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

Agram	29.61	752.0	30.16	766.0	54.9	12.7	54	SW	.....	.....	2	.....	2	.....	.....	0	0	.....	Prof. Ivan Stozir
Cracow, I. R. Observatory	29.42	747.3	30.21	767.3	45.3	7.4	86	W	.....	.....	1	.....	10	.....	.....	0	0	.....	Dr. Wierzbiski.
Eperies	29.27	743.4	30.17	766.2	46.6	8.1	62	Calm	.....	.....	0	.....	10s	.....	S	0	0	.....	Julius Mikoltk.
Gratz	28.91	734.3	30.18	766.5	49.3	9.6	72	Calm	.....	.....	0	.....	0	.....	.....	0	0	.....	Andreas Rospini.
Hermannstadt	28.66	728.0	30.12	765.0	44.1	6.7	66	N	.....	.....	3	.....	3	.....	.....	0	0	.....	Prof. Reissenberger.
Kremsmünster	28.72	729.4	30.07	763.8	49.6	9.8	76	E	.....	.....	3	.....	3	.....	.....	0	0	.....	Prof. C. Wagner.
Lemberg	29.11	739.3	30.12	765.0	45.0	7.2	83	NW	.....	.....	1	.....	10	.....	.....	0	0	.....	Dr. T. Stanecki.
Pola	29.98	761.5	30.10	764.4	58.3	14.6	71	WNW	.....	.....	2	.....	2c	.....	.....	0	0	.....	I.R.Hydrographic Office.
Szathmar	29.71	754.6	30.19	766.7	46.5	8.2	58	NW	.....	.....	3	.....	2	.....	.....	0	0	.....	Johann Tamas, S. J.
Szegedin	29.81	757.1	30.10	764.4	47.3	8.5	84	N	.....	.....	1	.....	0	.....	.....	0	0	.....	Karl Stancel.
Trieste	30.02	762.4	30.12	765.0	55.6	13.1	86	S	.....	.....	1	.....	0	.....	.....	0	0	Clear	P. Busin.
Vienna	29.46	748.3	30.17	766.3	50.2	10.1	66	E	.....	.....	1	.....	7	.....	.....	0	0	.....	I. R. Central Met. Obs'y.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

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

BELGIAN SERIES.

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

Arlon	28.53	724.7	30.08	763.9	42.6	5.9	94	S	.....	.....	1	.....	10	.....	.....	0.004	0.1	Foggy	Prof. M. Passau.
Brussels	29.82	757.4	30.02	762.6	44.2	6.8	94	SSW	.....	.....	2	.....	10	.....	.....	0.016	0.40	.....	Royal Observatory.
Furnes	29.96	761.0	29.98	761.6	44.8	7.1	93	S	.....	.....	2	.....	10	.....	.....	0	0	Foggy.....	M. E. de Cae.
Maeseyck	29.90	759.4	30.03	762.7	49.1	9.5	84	SSW	.....	.....	2	.....	5	.....	.....	0	0	.....	M. Pierrot.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

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

BRITISH SERIES.

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

STATIONS.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Barometer: Corrected for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'r 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Aberdeen	29.41	747.0	29.50	749.3	49.6	9.8	.....	S	23	10.3	.....	.....	9	.....	.....	0.020	0.51	Squally.....	W. Boswell.
Ardrossan	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	William McNeil.
Armagh, Observatory	.....	.....	29.45	748.0	52.0	11.1	.....	S	16	7.2	.....	.....	.....	.....	.....	.....	.....	.....	S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)	.....	.....	29.67	753.6	48.8	9.3	.....	SE	24	10.7	.....	.....	10	.....	.....	.....	.....	Overcast.....	John Hartnup.
Birr Castle, (Parsonstown)	.....	.....	29.45	748.0	53.8	12.1	.....	SSE	.....	.....	1	.....	7	.....	.....	.....	.....	D. clouds.....	J. Dreyer.
Bradford, Yorkshire	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.01	0.3	.....	J. McLandsborough.
Bridgetown, (Barbados)	29.87	758.7	29.90	759.4	83.0	28.3	.....	NE	.....	.....	1	.....	2	.....	.....	.....	.....	D. clouds.....	Pvt. G. W. Roberts, A.
Cambridge, Observatory	.....	.....	29.87	758.7	50.0	10.0	.....	S	.....	.....	1	.....	10	.....	.....	.....	.....	Overcast.....	H. Todd. [H.O.
Cardington	.....	.....	29.86	758.4	49.4	9.7	.....	S	.....	.....	1	.....	9	.....	.....	.....	.....	Overcast.....	John McLaren.
Chatham, School M. E.	29.76	755.9	29.89	759.2	53.2	11.8	.....	S	.....	.....	2	.....	5	.....	.....	.....	.....	Blue sky.....	Lieut. C.M.Martin, R.E.
Dartmoor	28.33	719.6	29.81	757.2	47.4	8.6	.....	SW	.....	.....	4	.....	7	.....	.....	.....	.....	Gloomy.....	Alexander Watt.
Davos Platz (Switzerland)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Francis Redford, M. A.
Donaghadee	29.44	747.8	29.46	748.3	52	11.1	.....	SSW	.....	.....	4	.....	8	.....	.....	.....	.....	D. clouds.....	J. Mac Gowan.
Dover	29.88	758.9	29.91	759.7	52	11.1	.....	SSW	.....	.....	5	.....	7	.....	.....	.....	.....	Gloomy.....	J. Costello.
Eccles, (near Manchester)	.....	.....	29.72	754.9	48.8	9.3	.....	SE	7.2	3.2	.....	.....	10	.....	.....	.....	.....	Overcast.....	Thomas Mackereth.
Falmouth, Observatory	29.56	750.8	29.79	756.7	53.8	12.1	.....	SSW	.....	.....	4	.....	9	.....	.....	.....	.....	Overcast.....	The Staff.
Fort Napier, (Natal)	27.66	702.6	29.90	759.4	63.9	17.7	.....	E	.....	.....	2	.....	10	.....	.....	.....	.....	Overcast.....	Pvt. G. Salmon, A.H.C.
Free Town, (Sierra Leone)	.....	.....	29.89	759.2	88	31.1	.....	Calm	.....	.....	0	.....	3	.....	.....	.....	.....	D. clouds.....	
Galway, Queen's College	.....	.....	.....	.....	49	9.4	.....	SW	.....	.....	5	.....	4	.....	.....	.....	.....	Gloomy.....	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	29.99	761.7	30.05	763.3	68.3	20.2	.....	NE	.....	.....	2	.....	4	.....	.....	.....	.....	D. clouds.....	Corpl. C. Aitken, A.H.C.
Glasgow, Observatory	29.26	743.2	29.46	748.3	51.0	10.6	.....	S	.....	.....	4	.....	10	.....	.....	.....	.....	Raining.....	D. G. Maclean.
Great Yarmouth	29.90	759.4	29.91	759.7	49	9.4	.....	SSE	.....	.....	3	.....	3	.....	.....	.....	.....	Blue sky.....	G. T. Watson.
Greenwich, Royal Obs'y	29.69	754.1	29.86	758.4	54.4	12.4	.....	SSW	.....	.....	3	.....	8	.....	.....	.....	.....	D. clouds.....	The Staff, for G. B. Airy.
Guernsey	29.65	753.1	29.87	758.7	53	11.7	.....	SSW	.....	.....	4	.....	8	.....	.....	.....	.....	Gloomy.....	Dr. S. E. Hoskins, F.R.S.
Helston	.....	.....	29.84	757.9	55	12.8	.....	SW	.....	.....	3	.....	10k	.....	.....	0	0	Fair.....	M. P. Moyle.
Holyhead	29.48	748.8	29.54	750.3	52	11.1	.....	SSW	.....	.....	6	.....	10	.....	.....	.....	.....	Raining.....	John Tilston.
Jersey	29.64	752.8	29.94	760.5	51.6	10.9	.....	SW	.....	.....	3	.....	10	.....	.....	.....	.....	Overcast.....	J. Fisher.
Kew, Observatory	.....	.....	29.86	758.4	52.7	11.5	.....	WSW	17	7.6	.....	.....	10k	.....	.....	.....	.....	Overcast.....	The Staff.
Kingstown	29.48	748.8	29.51	749.5	54	12.2	.....	WSW	.....	.....	4	.....	1	.....	.....	.....	.....	Blue sky.....	George Mitchell.
Leicester, Museum	.....	.....	29.76	755.9	50.7	10.4	.....	S	.....	.....	4	.....	10	.....	.....	.....	.....	Overcast.....	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.98	761.5	30.05	763.3	65.8	18.8	.....	NE	.....	.....	5	.....	4	.....	.....	.....	.....	D. clouds...	S'gt. C. Arbeiter, A.H.C.
Nairn	29.28	743.7	29.38	746.2	53	11.7	.....	W	.....	.....	1	.....	8	.....	.....	.....	.....	¾ clouded..	W. D. Penny.
Nassau, (Bahamas)	.....	.....	30.03	762.7	81.5	27.5	.....	NE	.....	.....	3	.....	4	.....	.....	.....	.....	D. clouds.....	C. S. Duncombe.
Nottingham, Observatory	29.60	751.8	29.79	756.7	50.0	10.0	.....	S	.....	.....	4	.....	10k;cs;0	.....	S	0	0	Overcast.....	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.25	742.9	29.77	756.1	47.8	8.8	.....	S	.....	.....	3-4	.....	9	.....	.....	.....	.....	D. clouds.....	Rev. Stephen Whitty
Oxford, Radcliffe Obs'y	.....	.....	29.82	757.4	52	11.1	.....	S	.....	.....	1	.....	10	.....	.....	.....	.....	Gloomy.....	F. Lucas
Plymouth	29.73	755.1	29.81	757.2	53.6	12.0	.....	SW	.....	.....	3	.....	10	.....	.....	.....	.....	Gloomy.....	John Merrifield.
Roche's Point	29.53	750.0	29.58	751.3	55	12.8	.....	WSW	.....	.....	6	.....	10	.....	.....	.....	.....	Raining.....	W. Kennedy.
Saint Ann's Head	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	John C. Walker.
Sandwick Manse, (Orkneys.)	.....	.....	29.37	746.0	48.4	9.1	.....	S	21	9.4	.....	.....	10	.....	.....	.....	.....	Raining.....	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey)	.....	.....	29.86	758.4	47.6	8.7	.....	W	.....	.....	2	.....	10	.....	.....	Blank	Blank	Misty.....	Sergt. W. H. Lyne.
Sheffield	29.51	749.5	29.75	755.6	50.9	10.5	.....	SSW	.....	.....	4	.....	10	.....	.....	0.10	2.5	Overcast.....	W. F. Cooper.
Silloth Rectory	29.54	750.3	29.57	751.1	53.0	11.7	70	S	.....	.....	7	.....	7	.....	.....	0.225	5.72	D. clouds....	Rev. F. Redford, M. A.
Stonyhurst, Observatory	.....	.....	.....	.....	47.9	8.8	.....	S	.....	.....	5	.....	10	.....	.....	.....	.....	Gloomy.....	Rev. S. J. Perry.
Stornoway, Lews C., (Hebr.)	.....	.....	29.28	743.7	50	10.0	.....	SW	.....	.....	2	.....	5	.....	.....	.....	.....	D. clouds.....	John Smith.
Stratfield Turgiss	29.63	752.6	29.84	757.9	52.3	11.3	.....	S	.....	.....	1	.....	7	.....	.....	.....	.....	D. clouds.....	Rev. C. H. Griffith, F.M.S.
Thurso	.....	.....	29.36	745.7	51	10.6	.....	S	.....	.....	8	.....	8	.....	.....	.....	.....	Gloomy.....	John Trotter.
Truro, Royal Institution	.....	.....	29.78	756.4	53	11.7	.....	S	.....	.....	4	.....	10	.....	.....	.....	.....	Raining.....	W. Newcombe.
Valencia, Observatory	.....	.....	29.49	749.0	50.9	10.5	.....	SW	35	15.6	.....	.....	8	.....	.....	.....	.....	D. clouds.....	The Staff.
SUB-SERIES.																			
Calf of Man, (Isle of Man)	.....	.....	.....	.....	52	11.1	.....	SW	.....	.....	7	.....	10	.....	.....	0.010	0.25	.....	Henry Mercer.
Cape Good Hope, Obs'y	29.92	760.0	29.96	761.0	71.0	21.7	49	SSE	10	4.5	.....	0	1	.....	.....	.....	.....	.....	The Staff, for E. J. Stone.
Hobart Town, (Tasmania)	.....	.....	29.42	747.3	43.0	6.1	86	S	.....	.....	3	.....	4k	.....	.....	0.30	7.6	.....	Francis Abbott, F.R.A.S.
Leith, Restalrig Park	.....	.....	29.51	749.5	52.0	11.1	.....	SW	.....	.....	4	.....	10k	.....	.....	0	0	Cloudy.....	Andrew Gibb.
Mauritius, Observatory	29.83	757.7	30.02	762.5	78.3	25.7	58	ENE	11.0	4.9	.....	0	2	.....	ENE	0	0	Fine.....	C. Meldrum.
Melbourne, Observatory	29.83	757.7	29.92	759.9	48.8	9.3	72	W	10	4.5	.....	.....	8	.....	.....	0.05	1.3	Squally.....	R. L. J. Ellery.
Monach L't-house, (Hebrides)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Youngclause.
North Unst, (Shetland Is.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Robert Burnet.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m. following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m. *Rain-fall during the month.

MARINE SERIES. VESSELS.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Barometer: Corrected for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'r 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea or swell. Height scale 0—9	Sea or swell. Direction from—	Weather	Observer.
S. S. Algeria, N. 45° 10′, W. 45° 50′	.....	.....	29.78	756.4	53	11.7	.....	W	.....	.....	2	.....	10	WSW	.....	*10	WSW	Overcast.....	Capt. W. Watson.
S. S. Batavia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. J. E. Monland.
Ship Camperdown	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. A. T. Miller.
Brig Catherine, N. 50° 15′, W. 12° 15′	.....	.....	29.60	751.8	55	12.8	.....	W	.....	.....	6	.....	5	.....	.....	5	W	D. clouds.....	Capt. Adam Smith.
Barque Celeste	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. D. F. McKechnie
S. S. Hibernia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. W. R. Cato.
Barque Maroon	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. A. T. Brown.
Ship Mikado	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. C. C. Prehn.
S. S. Seine	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. H. Manning.
Barque Sorata	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. Jas. J. Price.
Schooner Traveller, N. 50° 10′, W. 2° 5′	.....	.....	29.87	758.7	55	12.8	.....	SSW	.....	.....	5	.....	10	.....	.....	3	SW	D. clouds.....	Capt. Alex Simpson.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

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

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

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

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

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

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

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

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

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

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

STATIONS.	BAROMETER. Corrected for instrum'tal error and temperature. Inches.	BAROMETER. Corrected for instrum'tal error and temperature. Millimeters.	BAROMETER. Reduced to sea-level. Inches.	BAROMETER. Reduced to sea-level. Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Upper 0—10.	CLOUDS. Amount. Lower 0—10.	CLOUDS. Direction. Upper. From—	CLOUDS. Direction. Lower. From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	WEATHER.	OBSERVER.
San José	26.16	664.4			68.4	20.2	95	NE			1	8c	1c;d		E	0	0		Federico Maison.

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

DANISH SERIES.

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

Copenhagen	29.96	760.9	30.00	762.1	48.9	9.4	80	W			2		3						
Fanöe	29.93	760.1	29.95	760.6	50.0	10.0	86	SW			2		9						
Godthaab, (Greenland)	29.30	744.2	29.34	745.3	24.4	—4.2	69	ENE			4		8						
Stykkisholm, (Iceland)	29.40	746.7	29.44	747.8	34.5	1.4	98	NE			7		8						
Thorshavn, (Faröe)	29.15	740.3	29.18	741.2	47.5	8.6	89	WSW			2		6						
Vestervig	29.70	754.3	29.87	758.6	47.1	8.4	78	S			4		6						

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

FRENCH SERIES.

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

Alençon, Normal School	29.48	748.9	30.04	762.9	53.6	12	87	SW			1		10			0	0	Covered	Collignon, Director.
Amiens, Normal School	29.87	758.8	29.98	761.6	48.2	9.0	89	SW			1		10			0	0	Covered	Bonvarne, Director.
Avignon, Normal School	30.00	762.0	30.08	764.0	59.5	15.3	76	ENE			1		5		SSW	0	0	Cloudy	Mr. Giraud, Director.
Bar-sur-Seine	29.45	747.9	30.01	762.2	56.5	13.6	62	S			2		8cn		W	0	0	Very cloudy	C. Saillard.
Beaumette Obs'y (Angers)	29.79	756.7	29.95	760.8	55.9	13.3	68	SW	7.2	3.2					SW	0	0		Albert Cheux.
Beauvais	29.72	754 9	30.01	762.2	48.9	9.4	94	SE			1		10			0	0	Covered	Normal School.
Besançon	29.21	741.9	30.10	764.6	53.6	12	78	SW			3		0			0	0	Clear	Normal School.
Bourg-en-Bresse	29.21	742.0	30.13	765.2	49.1	9.5	95	S			1		5k		S	0	0	Cloudy	Normal School.
Bourges, Normal School	29.47	748.4	30.02	762.5	54.7	12.6	93	ESE			1		5		NW	0	0	Cloudy	A. Wagner, Director.
Brest, Naval Observatory	29.61	752.0	29.83	757.6	54.9	12.7	74	SW			2		10		SW	0	0		The Staff.
Carcassonne, Normal School	29.66	753.3	30.07	763.8	59.9	15.5	82	E			4		2		E	0	0	Slightly cl'dy	Vateau, Director.
Caen	29.87	758.8	29.95	760.6	53.6	12	80	S			4		5			0	0	Cloudy	Normal School.
Chartres, Normal School	29.43	747.4	29.99	761.7	56.3	13.8	84	SE			2		10		N	0	0	Covered	Lequin, Director.
Châlons-sur-Marne, N. Sch'l	29.69	754.0	30.00	762.1	56.5	13.6	80	S			2		5ck		S	0.008	0.2	Cloudy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.65	727.8	29.98	761.5	63.7	17.6	66	SE			1		2			0	0	Slightly cl'dy	Alluard, Director.
Commercy, Normal School	29.19	741.4	30.10	764.5	47.8	8.8	86	NNW			2		1		NN W	0.020	0.5	Clear	Dr. Goulet, Director.
Commune de Gréasque*	28.99	736.4	30.13	765.4	61.0	16.1	69	SE			1		8		SE	0	0	¾ covered	M. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	29.75	755.6	29.97	761.1	59.4	15.2	73	SE			1		8		SE	0.008	0.2	Very cloudy	Mouillot, Director.
Le Mans, Normal School	29.68	753.9	29.99	761.7	54.1	12.3	83	W			2		8		W	0	0	Very cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.06	738 5	30.00	762.0	48.9	9.4	92	W			2		10			0	0	Foggy	Pin, Director.
Lorient, Naval Observatory	29.84	757.9	29.94	760.5	57.9	14.4	83	SSW			3		8		SW	0.055	1.4	¾ covered	T. Carré, Director.
Mâcon, Normal School	29.30	744.3	30.00	762.1	52.3	11.3	83	Calm			0					0	0	Foggy	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	28.99	736.3	30.04	763.1	50.4	10.2	82	SW					2		NE	0	0	Slightly cl'dy	Normal School
Nismes, Normal School	29.87	758.6	30.07	763.7	53.0	17.2	68	W			1		5		N	0	0	Partly cl'dy	Boyer, Director.
Orleans, Normal School	29.58	751.4	29.97	761.1	56.8	13.8	73	E			2		8		E	0	0	Very cloudy	Bernard, Director.
Paris, Observatory	29.75	755.6	29.99	761.7	53.6	12.0	80	SE			1		10		S	Inap.	Inap.	Covered	National Observatory.
Privas	29.02	737.0	30.08	764.1	55.4	13	68	S			2		5		S	0	0	Cloudy	Normal School
Rochefort, Naval Obs'y	29.97	761.3	30.00	762.1	57.6	14.2	91	S			3		10		N	0	0	Covered	Lt. Decante, Director.
Rouen, Normal School	29.88	759.0	29.97	761.2	52 0	11.1	86	NW			1		10			0	0	Covered	F. Lucard, Director.
Tarbes, Normal School																			T. Hugues, Director.
Villefranche	29.36	745.4	30.06	763.4	58.6	14.8	76	E			1		0			0	0	Clear	Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.75	755.6	29.78	756.3	81.0	27.2										2.28	58.		L'Abbé Marchési.
Marseilles, Observatory			30.08	764.0	63.9	17.7	67	SE			0–1		10			0	0	Very cloudy	The Staff.
Mont-Louis	24.92	632.9	30.23	767.9	55.0	12.8	42	SSW	9.3	4.17			2		SW	0	0		Mr. Falguère.
Nice			30.08	763.9	60.4	15.8	67	SE					1		NW	0	0	Clear	Dr. A. Niepce.
Paris, Montsouris Obs'y	29.71	754.5	29.98	761.5	54.3	12.4	80	SSE			1		10			0.004	0.1		Marié Davy, Director.
Perpignan			30.08	763.9	68.6	14.9	81	E	7.4	3.33			10		NE	0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.	21.29	540.7			41.0	5.0		SW			1		4					Fair	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.55	572 8			47.3	8.5		SW			1		4			0	0	Fair	Gen'l de Nansouty.
Saint Maur, (near Paris)	29.82	757.5	29.99	761.7	54.7	12.6	80	SSE			1		10			0	0		E. Renou.
Toulouse, Observatory	29.32	744.8	30.05	763.2	62.2	16.8	64	SE			2		1			0.012	0.3		The Staff.
Tours	29.89	759.3	30.09	764.3	58.6	14.8		SSW			1		8		SW	0	0		C. Marquet.
Versailles, (near Paris)			29.99	761.8	53.2	11.8	87	S			1		10			0	0	Covered	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	29.98	761.4	30.00	762.1	54.1	12.3	100	NNW	22.4	10.0			10n			0.484	12.3	Raining	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; for Montsouris, the barometer reduced to freezing but not to sea-level. At Mirecourt the cloud direction is apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 398 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,364 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

GERMAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Berlin	29.98	761.5	30.15	765.8	48.0	8.9	85	S			1		6			0.036	0.91		Prof. Arndt.
Breslau	29.07	753.6	30.21	767.2	48.4	9.1	78	NW			1		6			0	0		Royal University Obs'y.
Carlsruhe	29.60	751.8	30.02	762.6	56.5	13.6	65	NE			1		1			0	0		Albert Senz.
Cassel	29.53	750.0	30.14	765.5	42.3	5.7	94	SW			0		Fog			0	0		Dr. H. Möhl.
Crefeld	29.88	758.9	30.04	763.0	43.3	6.3	91	SE			4		9			0	0	Foggy	Director Lose.
Emden	30.05	763.3	30.09	764.2	43.7	6.5	96	S			2		10			0.035	0.9		Prof. Prestel.
Frankfort on the Main	29.80	756.8	30.17	766.3	47.3	8.5		E			1		2			0	0		Physical Society.
Friedrichshafen	28.63	727.1	30.08	764.0	48.2	9.0	87	WNW			2		2	W		0	0		M. Wilhelm.
Hamburg	30.01	762.3	30.08	764.1	47.5	8.6	86	SW			2		4cs;k			0.012	0.3	Pleasant	Captain F. Hegemann.
Kiel	30.03	762.8	30.05	763.2	46.8	8.2	83	WSW			2		2			0	0		Prof. G. Karsten.
Königsberg, (Prussia)	29.95	760.7	30.02	762.5	47.5	8.6	75	W										Cloudy	Prof. E. Luther.
Köslin			30.06	763.5	44.4	6.9		SW			2		2			0	0		H. Müller.
Leipsic, Observatory	29.76	755.9	30.19	766.8	47.7	8.7	80	SSE			1		1			0	0		Prof. Bruhns.
Memel, Naval School	29.90	759.4	29.95	760.8	47.5	8.6	83	WNW			6		8ks						Reinbrecht von Skalweit.
Neufahrwasser	30.04	763.1	30.06	763.5	48.6	9.2	75	WNW			4		5	N		0	0		A. Lothes.
Posen	29.90	759.4	30.20	767.1	45.0	7.2	89	W			5		10					Covered	Dr. Magener.
Strassburg Obs., (in Alsace	29.52	749.9	30.09	764.2	46.8	8.2	89	Calm			0		8	NW		0	0		Dr. Schur.
Stuttgart	29.10	739.1	30.04	763.1	51.8	11.0	71	S			2		2	S		0	0	Foggy	Prof. Schoder.
Treves, (Trier)	29.44	747.8	29.97	761.1	41.5	5.3	94	NE			0–1		10			0.009	0.22	Dense fog	Prof. Flesch.
Weissenburg, (Bavaria)	28.58	725.9	30.10	764.5	50.4	10.2	72	ENE	1.	0.5			4ck		SE	Blank	Blank		Dr. Von Bebber.
Wustrow, Naval School	30.18	766.6	30.23	767.8	46.6	8.1	82	SW			5		0					Clear	E. F. Schütz.
German Naval Series.																			

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

GREEK SERIES.

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

Athens	29.61	752.0	30.00	762.0	58.6	14.8		N					k						Dr. J. F. J. Schmidt.

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

INDIAN SERIES.

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

Kurrachee	29.77	756.1	29.82	757.4	81.2	27.3	83	WSW	6.0?	2.7?			3		WSW	0	0		D. clouds.
Deesa	29.40	746.8	29.88	758.9	86.0	30.0	30	Calm					0			0	0		Blue sky.
Bombay	29.79	756.6	29.82	757.5	84.2	29.0	70	WNW	9.0	4.0			0			0	0		Blue sky.
Poona	27.84	707.2	29.84	757.8	80.2	26.8	49	SE					3		S	0	0		D. clouds.
Lahore	29.08	738.6	29.83	757.6	77.9	25.5	41	NE	1.8	0.8			2			0	0		Blue sky.
Belgaum	27.33	694.2	29.88	758.9	75.0	23.9	65	Calm					2		SW	0	0		D. clouds.
Bangalore																			
Roorkee	28.92	734.5	29.83	757.7	72.8	22.7	46	Calm	1.9	0.8			0			0	0		
Agra	29.24	742.8	29.81	757.1	81.2	27.3	38	NW								0	0		
Trichinopoly																			
Nagpur	28.84	732.6	29.89	759.1	79.6	26.4	34	Calm	2.4	1.1			0			0	0		Blue sky.
Madras																			
Lucknow	29.45	748.0	29.82	757.5	77.3	25.2	44	NW	2.0	0.9			0			0	0		Blue sky.
Allahabad	29.51	749.4	29.82	757.4	74.7	23.7	51	Calm	1.2	0.5			0			0	0		Blue sky.
Patna	29.63	752.5	29.81	757.2	79.3	26.3	31	W	0.9	0.4			0			0	0		Blue sky.
Hazaribagh	27.81	706.4	29.85	758.2	71.6	22.0	49	W	4.3	1.9			0			0	0		Blue sky.
Cuttack	29.76	756.0	29.85	758.1	78.1	25.6	74	W	5.4	2.4			0			0	0		Blue sky.
Calcutta (Alipore)	29.79	756.6	29.81	757.1	80.4	26.9	72	N	5.0	2.2			0			0	0		Blue sky.
Goalpara	29.37	746.1	29.76	756.0	77.5	25.3	70	Calm	0.4	0.2			0			0	0		Blue sky.
Chittagong	29.71	754.7	29.80	757.0	76.4	24.7	93	Calm	0.3	0.1			0			0	0		D. clouds.
Sibsagar	29.46	748.2	29.80	756.9	74.0	23.3	90	SE	1.0	0.4			10	W	W	0	0		
Rangoon																			
Jubbulpore	28.60	723.9	29.87	758.7	79.0	26.1	43	NW	1.7	0.8			0			0	0		Blue sky.

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,026 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	22.24	564.9	30.14	765.5	36.3	2.4	55	NNW	.....	.....	2	.....	8	NW	.....	0	0	.....	Ab. Dom. Morgini.
Stelvio	22.22	564.3	30.17	766.2	32.5	0.3	.....	SSW	.....	.....	2	.....	7	WSW	.....	0	0	.....	Signora Ernesta Manfredi.
Udine	29.67	753 7	30.09	764.3	61.0	16.1	34	Calm	0	0	.....	.....	3	.....	.....	0	0	.....	Prof. Giovanni Clodig.
Padua	29.98	761.6	30.10	764.5	55.8	13.2	44	S	0.7	0.3	.....	.....	1	.....	.....	0	0	.....	Prof. Dott. Lorenzoni.
Vicenza	29.90	759.5	30.10	764.5	57.7	14.3	46	WSW	0	0	.....	.....	1	.....	.....	0	0	.....	Conte Alm. Da Schio.
Verona	29.03	737.3	30.04	763.1	61.5	16.4	59	SW	0	0	.....	.....	2	.....	.....	0	0	.....	Dott. B. Bertoncelli.
Bergamo	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Trionfini Carlo.
Domodossola	29.08	738.5	30.12	765.1	53.1	11.7	61	S	.....	.....	2	.....	1	.....	.....	0	0	.....	Prof. Giuseppe Calza
Milan	29.64	752.8	30.17	766.3	53.1	11.7	.....	N	.....	.....	1	.....	0	.....	.....	0	0	.....	Ab. Gio. Capelli.
Pavia	29.78	756.5	30.14	765.5	44.4	6.9	96	SW	.....	.....	1	.....	10	.....	.....	0	0	.....	Prof. Gio. Cantoni.
Moncalieri	29.21	741.9	30.14	765.5	51.1	10.6	77	ESE	0	0	.....	.....	0	.....	.....	0	0	.....	Prof. P. F. Denza.
Mondovi	28.17	715.5	30.11	764.9	52.7	11.5	60	N	.....	.....	2	.....	0	.....	.....	0	0	.....	Prof. D. C. Bruno.
Porto Maurizio	29.88	758.9	30.10	764.5	61.3	16.3	70	E	1 3	0.6	.....	.....	2	.....	.....	0	0	.....	Prof. L. Vassallo.
Genoa	29.92	760.0	30.09	764.3	64.6	18.1	56	SW	1.3	0.6	.....	.....	2	SW	.....	0	0	.....	Prof. G. M. Garibaldi.
Placenza	29.87	758.8	30.14	765.5	46.4	8.0	90	NW	3.1	1.4	.....	.....	0	.....	.....	0	0	.....	Dott. G Manzi.
Parma	29.81	757.2	30.13	765.4	57.7	14.3	52	NNW	.....	.....	2	.....	1	.....	.....	0	0	.....	Prof. P. Pigorini.
Florence	29.85	758 3	30.12	765.0	60.8	16.0	46	NW	.....	.....	2	.....	0	.....	.....	0	0	.....	Cav. F Meucci.
Leghorn	30.01	762.2	30.10	764.4	63.1	17.3	55	N	6.3	2.8	.....	.....	0	.....	.....	0	0	.....	Prof. P. Monte.
Siena	28.87	733.3	30.09	764.3	59.7	15.4	31	SW	0	0	.....	.....	0	.....	.....	0	0	.....	Prof. L. Toscani.
Urbino	28 58	726.0	30.16	766.1	53.6	12.0	55	NE	.....	.....	2	.....	0	.....	.....	0	0	.....	Prof. P. Serpieri.
Pesaro	30.08	764.1	30.13	765.4	54.7	12.6	60	NE	23.0	10.3	.....	.....	0	.....	.....	0	0	.....	Prof. Luigi Guidi.
Ancona	30.00	762.1	30.11	764.9	57.2	14.0	54	N	.....	.....	4	.....	1	.....	.....	0	0	.....	Prof. F. DeBosis.
Grosseto	30.02	762.5	30.13	765.4	65.1	18.4	51	WSW	.....	.....	2	.....	2	SE	.....	0	0	.....	Avv. P. Ponticelli.
Rome	29.91	759.8	30.09	764.3	61.9	16.6	39	N	0	0	.....	.....	0	.....	.....	0	0	.....	Prof. P. A. Secchi.
Naples, O. U	29.92	759.9	30.12	765.1	61.9	16.6	44	NNE	.....	.....	2	.....	8	SW	.....	0	0	.....	Prof. L. Palmieri.
Lecce	.....	.....	.....	.....	57.2	14.0	55	WNW	7.4	3.3	.....	.....	8	.....	.....	0	0	.....	Prof. C. De Giorgi.
Cosenza	29.22	742.1	30.12	765.1	59.2	15.1	71	SE	0	0	.....	.....	3	.....	.....	0	0	.....	Prof. F. D. Conti.
Cagliari	29.83	757.6	30.02	762.5	68.0	20.0	60	N	.....	.....	2	.....	5	N	.....	0	0	.....	Prof. A. Pacinotti.
Riposto, (Sicily)	29.97	761.3	30.02	762.5	63.9	17.7	62	SE	.....	.....	2	.....	6	SE	.....	0	0	.....	Prof. F. Caflero.
Palermo	29.80	756.8	30.05	763.3	61.2	16.2	53	NE	3.8	1.7	.....	.....	4	.....	.....	0	0	.....	Prof. G. Cacciatore.
Caltanissetta	28.08	713.3	30.04	763.0	57.7	14.3	33	SSW	.....	.....	2	.....	0	.....	.....	0	0	.....	Prof. A. Pagani.
Syracuse	29.97	761.2	30.04	763.1	62.6	17.1	58	SW	.....	.....	2	.....	7	SSW	.....	0	0	.....	Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.57	751.0	30.12	765.1	57.6	14.2	48	NNE	1.3	0.6	.....	.....	8	.....	.....	0	0	.....	Prof. F. Brioschi.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,543.0 meters, or 8,342.9 feet; Valdobbia, 2,548.9 m., or 8,362.3 ft.; Bergamo, 379.6 m., or 1,245.7 ft.; Mondovi, 559 m., or 1,834.2 ft.; Siena, 348.5 m., or 1,143.3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft.

JAPANESE SERIES.

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

Tokei (Yeddo)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	The Observatory.
Tokei (Yeddo) University	29.89	759.2	29.99	761.8	46.3	8.0	76	Calm	0	0	.....	.....	10s	.....	.....	0	0	Cloudy	Prof. P. V. Veeder.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

MEXICAN SERIES.

By authority of the Secretary of Public Works.

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

Aguascallentes	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	I. N. Marin, M. D.
Córdoba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	C. Peña, M. D.
Cuernavaca	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	L. Castillo, A. E.
Guadalajara	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. L. Perez.
Guanajuato	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. V. Fernandez.
Leon	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. M. Leal.
Mexico	23.16	588.1	30.31	770.0	54.5	12.5	82	Calm	0	0	.....	0	Haze	.....	.....	0	0	Hazy	Central Observatory.
Orizaba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	N. N.
Orizaba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	I. Orozco, M. D.
Pabellon, (Aguascalts)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. V. de Leon, M. E.
Puebla	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. B. Gonzalez.
Toluca	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. C. Velazquez.
Tlacotalpam	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. F. R. Bayly.
San Luis Potosi	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	G. Barroeta, M. D.
Vera-Cruz	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. J. Rossell.
Zacatecas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. A. Bonilla, M. E.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The elevation of Aguascallentes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,290 m., or 7,512.9 ft.; Orizaba, 1,223 m., or 4,012.1 ft.; Pabellon, 1,921.4 m., or 6,303.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,493 m., or 8,180.6 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

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

Flushing	30.02	762.4	30.02	762.4	45.7	7.6	.....	SSE	.....	.....	4	.....	.....	.....	.....	0	0	.....	
Groningen	29.98	761.5	30.04	762.9	45.7	7.6	.....	S	.....	.....	2	.....	.....	.....	.....	0.020	0.5	.....	
Helder	29.96	761.0	29.96	761.0	49.6	9.8	.....	S	.....	.....	4	.....	.....	.....	.....	0	0	.....	
Hellevoetsluis	.....	.....	29.99	761.8	52.2	11.2	83	SE	.....	.....	3	.....	.....	.....	.....	.....	.....	.....	
Utrecht	29.98	761.6	30.03	762.8	47.1	8.4	89	SSE	.....	.....	2	.....	0	.....	.....	0	0	Clear	H. v d Brink.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

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

NORWEGIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	29.63	752.6	29.69	754.0	47.5	8.6	89	S	25.7	11.5	.....	.....	10	.....	.....	0.256	6.5	.....	
Brönö	29.48	748.9	29.52	749.9	42.8	6.0	74	SSE	9	4	.....	.....	9	.....	.....	0	0	.....	
Christiania	29.27	743.5	29.42	747.2	40.6	4.8	81	Calm	0	0	.....	.....	6	.....	.....	0.587	14.9	.....	
Tromsö	29.25	742.9	29.29	744.0	37.0	2.8	79	SW	13	6	.....	.....	10	.....	.....	0	0	.....	

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

PORTUGUESE SERIES.

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

Angra, (Azores)	30.11	764.8	30.30	769.7	62.1	16.7	87	N	8.1	3.6	.....	.....	3	.....	.....	0	0	.....	Dr. J. A. Sampaio.
Campo Major	29.08	738.5	30.08	764.0	70.9	21.6	42	WNW	6.3	2.8	.....	.....	4	.....	.....	0	0	.....	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.00	762.0	30.09	764.2	76.5	24.7	63	SW	6.9	3.1	.....	.....	0	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.76	755.9	30.11	764.9	64.4	18.0	66	SE	4.9	2.2	.....	.....	5	.....	.....	0	0	.....	The Staff.
Ponta Delgada, (Azores)	30.24	768.1	30.31	769.9	66.6	19.2	81	NW	0.7	0.3	.....	.....	3	.....	.....	0	0	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

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

Naval Series. Vessels.																Sea or swell. Height scale 0–9	Sea or swell. Direction from—		
S. S. India	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. D. Pedroso, Com'd't. Lt. S. A. P. de Mirando.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

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

RUSSIAN SERIES.

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

Warsaw	29.73	755.1	30.17	766.2	41.7	5.4	86	W	9	4	.....	.....	10	.....	.....	.....	.....	.....	Astronomical Obs.
Wilna	29.56	750.8	29.98	761.6	44.6	7.0	87	S	4	2	.....	.....	10	.....	.....	.....	.....	.....	Astronomical Obs.
Dorpat	29.51	749.6	29.76	755.9	40.8	4.9	97	S	11	5	.....	.....	10	.....	.....	.....	.....	.....	Prof. Dr. Weihrauch.
St. Petersburg	29.79	756.7	29.81	757.1	40.3	4.6	82	SSE	13	6	.....	.....	10	.....	.....	.....	.....	.....	Central Physical Obs.
Kuopio	29.33	744.9	29.65	753.1	39.9	4.4	97	S	13	6	.....	.....	10	.....	.....	Blank	Blank	.....	Ch. Forsten.
Kieff	29.45	747.9	30.10	764.4	43.0	6.1	63	NE	2	1	.....	.....	10	.....	.....	.....	.....	.....	Physical Cabinet.
Nikolaiev	29.94	760.4	30.01	762.2	48.4	9.1	91	NNE	9	4	.....	.....	10	.....	.....	.....	.....	Light rain	Kurdakof.
Kertch	29.87	758.6	29.89	759.1	55.2	12.9	95	NE	9	4	.....	.....	10	.....	.....	.....	.....	.....	Lagorio.
Moscow	29.60	751.8	30.16	766.1	39.2	4.0	78	S	9	4	.....	.....	8	.....	.....	.....	.....	.....	Meteorological Obs.
Lugan	29.81	757.2	30.02	762.4	46.6	8.1	89	E	18	8	.....	.....	10	.....	.....	Blank	Blank	.....	Meteorological Obs.
Archangel	29.82	757.4	29.84	757.9	37.0	2.8	96	W	13	6	.....	.....	10	.....	.....	.....	.....	.....	Ogorodnikof.
Tiflis	28.55	725.1	29.94	760.5	64.6	18.1	67	SE	4	2	.....	.....	1	.....	.....	.....	.....	.....	Physical Observatory.
Astrakhan	30.21	767.3	30.13	765.2	46.0	7.8	62	SE	7	3	.....	.....	3	.....	.....	.....	.....	.....	Sebastianof.
Kasan	29.88	758.9	30.16	766.1	29.8	— 1.2	94	S	2	1	.....	.....	10	.....	.....	.....	.....	.....	Physical Cabinet.
Orenburg	30.24	768.1	30.64	778.3	30.4	— 0.9	69	NNE	9	4	.....	.....	7	.....	.....	.....	.....	.....	Tschernischef.
Ekaterinburg	29.30	744.2	30.28	769.2	35.8	2.1	40	S	7	3	.....	.....	4	.....	.....	.....	.....	.....	Meteorological Obs.
Nukuss	29.92	760.0	30.16	766.1	41.4	5.2	31	NE	9	4	.....	.....	1	.....	.....	.....	.....	.....	
Kasaly	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Bobrof.
Tashkend	28.53	724.7	30.30	769.6	43.2	6.2	91	Calm	0	0	.....	.....	0	.....	.....	.....	.....	Foggy	Michelson.
Barnaul	29.87	758.6	30.42	772.6	34.2	1.2	57	SW	9	4	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Yeniseisk	29.81	757.2	30.15	765.9	20.8	— 6.2	96	S	4	2	.....	.....	10	.....	.....	.....	.....	Snowing	Marks.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Usolzef.
Oorga	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Mossin.
Peking, (China)	30.28	769.0	30.42	772.6	38.3	3.5	51	NW	34	15	.....	.....	4	.....	.....	.....	.....	.....	Physical Observatory.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nikolaievsk, on the Amoor	.....	.....	.....	.....	5.5	—14.7	56	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Ekaterinburg, 306.4? m., or 1,005.2? ft.; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft.

SPANISH SERIES.

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

Barcelona, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Rave, Director.
Bilbao, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Manuel de Naveran
Burgos, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Domingo Martin y Perez.
Madrid, Royal Observatory	27.84	707.0	30.01	762.3	67.8	19.9	56	SW	6.7	3.00	.....	2	3	SSE	.....	0.008	0.2	Cloudy	The Staff.
Murcia, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Olayo Diaz, Director.
Santiago, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.96	761.0	30.03	762.6	77.7	25.4	82	Calm	0	0	.....	0	1k	.....	ENE	0	0	Clear	Benito Vines, S. J.
San Fernando, Naval Obs'y.	30.01	762.2	30.10	764.6	74.7	23.7	56	ENE	5.6	2.5	.....	0	8	.....	E	0.015	0.4	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.	.....	.....	29.84	757.8	81.5	27.5	86	S	0	0	.....	7kn	2kn	E	E	0.640	16.25	Cloudy	Leonardo de Tejeda, Chief of Engineers.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. instead of 8:19 a m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low't 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	OBSERVER.
Haparanda	29.69	754.0	29.72	755 0	34.5	1.4	.....	SSE	.....	.....	2	.....	5	.....	.....	0	0	.....	
Umea	29.24	742.8	29.30	744.1	38.5	3.6	75	NW	.....	.....	2	.....	9	.....	.....	0.205	5.2	.....	
Hernosand	29.59	751.6	29.64	752 9	43.9	6.6	74	W	.....	.....	2	.....	0?	.....	.....	0.299	7.6	Raining?.....	
Stockholm	29.56	750.8	29.74	755.3	43.9	6.6	71	WSW	.....	.....	2	.....	2	.....	.....	0.039	1.0	.....	
Wisby	29.72	754.9	29.78	756.4	45.3	7.4	83	WNW	.....	.....	6	.....	0	.....	.....	0.087	2.2	.....	
Sub-Series.																			
Upsala	29.65	753.1	29.72	755.0	44.4	6.9	83	WSW.	5.4	2.4	.....	.....	0	.....	.....	0.004	0.10	.....	Dr. Hildebrandsson.

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

SWISS SERIES.

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

Geneva	28.65	727.6	30.08	764.0	51.8	11.0	60	N	.....	.....	1	.....	0	.....	.....	0	0	Clear.....	The Observatory.
Zurich	28.43	722.1	30.08	763.9	52.2	11.2	75	NW	.....	.....	1	.....	2	.....	.....	0	0	Clear.....	The Observatory.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—For Geneva the corresponding departures from the normal values are: Barometer, +1.4 mm; Thermometer, +2.1 cent.; Relative Humidity, —15 per cent.

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

TURKISH SERIES.

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

Constantinople	.....	.....	29.89	759.2	47.5	8.6	90	W	9	4.0	.....	.....	10	.....	WSW	1.063	27.0	.....	The Observatory.
Fao, (Persian Gulf)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salonica	.....	.....	29.96	760.9	57.7	14.3	.....	N	.....	.....	4	.....	2	.....	.....	.....	.....	.....	B. Stefanidès.
Valona	.....	.....	29.89	761.8	55.0	12.8	.....	N	.....	.....	1	.....	2	.....	.....	0	0	Slightly cl'dy	A. Bertrand.
Varna	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Imperial Observatory.
Sub-Series.																			
Beirut,(Syria,) Lee Obs'y	29.73	755.1	29.84	758.0	70.0	21.1	69	SW	.....	.....	4	.....	5k;n	.....	E;SW	0.19	4.8	D. clouds.....	Prof. C. V. A. Van Dyck

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

CANADIAN SERIES.

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

Bathurst, N. B	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Hon. J. Ferguson.
Brockville, Ontario	.....	.....	30.22	767.6	31	— 0.6	.....	Calm	0	0	.....	0	2s	.....	W	0	0	Fair	W. R. Bigg.
*Chatham, N. B	.....	.....	29.64	752.8	36	2.2	57	W	18	8.0	.....	2k	8ks	W	W	0	0	Cloudy	G. A. Blair.
Charlottetown, P. E. Island	.....	.....	29.67	753.6	36	2.2	57	W	23	10.3	.....	0	0	.....	.....	0	0	Clear.	H. J. Cundall, C. E.
Cornwall, Ontario	29.95	760.7	30.16	766.1	30.4	— 0.9	74	NW	.....	.....	2	2k	0	.....	.....	0	0	Fair	James Smith, M. A.
Dalhousie, N. B	29.49	749.0	.....	.....	33.5	0.8	89	W	.....	.....	5	.....	.....	.....	.....	0	0	Threatening	H. A. Johnson.
Esquimault, B. C	29.79	756.7	29.84	757.9	46.3	7.9	92	NE	.....	.....	.....	.....	10	.....	.....	0	0	Cloudy	W. H. Bovis.
*Father Point, Quebec	.....	.....	29.73	755.1	44	1.1	71	W	35	15.6	.....	.....	10n	.....	W	0	0	Threatening	J. McWilliams.
Fredericton, N. B	29.81	757.2	29.87	758.7	35.0	1.7	54	W	18.0	8.0	.....	c	6ks	.....	NW	Inap.	Inap.	Fair	Prof. Harrison.
*Fort Garry, Manitoba	.....	.....	30.32	770.1	10	—12.2	94	NW	4	1.8	.....	5k	2ks	NW	NW	Inap.	Inap.	Fair	James Stewart.
Goderich, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	H. J. Strang, M. A.
Granton, Ontario	29.10	730.1	30.27	768.8	26.2	— 3.2	98	SW	.....	.....	1	0	0	.....	.....	0.29	7.4	Clear	James Grant.
*Halifax, N. S	29.66	753.4	29.80	756.9	38	3.3	63	W	21	9.4	.....	0	2ks	.....	W	0.086	2.03	Fair	F. Allison, M. A.
Hamilton, Ontario	29.90	759.4	30.29	769.4	37.2	2.9	60	SW	.....	.....	1	2c	.....	W	.....	0	0	Clear.	Geo. Dickson, M. A
Heart's Content, N. F	29.39	746.5	29.42	747.3	42	5.6	66	SW	.....	.....	4	.....	10	.....	.....	0.53	13.5	Overcast	E. Weedon.
*Kingston, Ontario	29.87	758.7	30.23	767.8	32	0.0	89	W	2	0.9	.....	2c	0	W	.....	0	0	Clear	S. Woods, M. A.
Little Glace Bay, N. S	29.56	750.8	29.61	752.1	38.5	3.6	95	SW	10	8.5	.....	9k	.....	NW	.....	0.14	3.6	Overcast	C. H. Rigby.
*Montreal, Quebec	29.91	759 7	30.12	765.0	32	0.0	73	W	16	7.2	.....	5ck	5ks	W	.....	0	0	Cloudy	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.48	748.8	30.21	767.3	29	— 1.7	89	E	7	3.1	.....	2ck	2ks	W	W	0	0	Fair	Rev. R. Mosley.
Peterboro, Ontario	29.46	748.3	30.25	768.3	29.6	— 1.3	86	E	.....	.....	.....	.....	10k	.....	.....	Blank	Blank	Cloudy	J. F. Jeffers, B. A.
Port Dover, Ontario	29.56	750.8	30.30	769.6	31	— 0.6	79	W	7	3.1	.....	0	0	.....	.....	0	0	Clear	H. Morgan.
Port Hastings, N. S	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Peter Grant.
Port Stanley, Ontario	29.60	751.8	30.28	769.1	25	— 3.9	86	W	2	0.9	.....	5k	0	W	.....	Inap.	Inap.	Fair	M. Payne.
*Quebec, Quebec	29.66	753.4	29.99	761.7	33	0.6	80	SW	9	4.0	.....	.....	8n	.....	SW	0	0	Cloudy	Capt. Ashe, R. N
*Rockliffe, Ontario	29.74	755.4	30.22	767.6	27	— 2.8	70	NW	6	2.7	.....	0	0	.....	.....	Inap.	Inap.	Clear	W. H. McIntyre.
St. John, N. B	29.78	756 4	29.96	761.0	33	0.6	70	SW	10	4.5	.....	0	0	.....	.....	0	0	Clear	G. Murdock, C. E.
*Saugeen, Ontario	29.44	747.8	30.17	766.3	37	2.8	71	W	3	1.3	.....	.....	8ks	.....	W	0.45	11.4	Cloudy	K. Stewart.
Stayner, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.49	12.4	.....	R. J. Cole.
Stratford, Ontario	28.91	734.3	30.26	768.6	25.7	— 3.5	95	SW	2.0	0.9	.....	2cs	.....	.....	.....	0	0	Fine	C. J. MacGregor, M. A.
*Sydney, C. B	29.56	750.8	29.59	751.6	40	4.4	67	W	24	10.7	.....	5k	5ks	W	W	0.10	2.5	Cloudy	T. C. Hill.
*Toronto, Ontario	29.86	758.4	30.27	768.8	31	— 0.6	82	W	2	0.9	.....	0	0	.....	.....	0	0	Clear.	Magnetic Observatory.
Windsor, N S	29.72	754.9	29.82	757.4	38.0	3.3	54	W	16	7.2	.....	6k	0	.....	.....	0	0	Fair	Prof. John E. Oram.
Woodstock, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Montgomery.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	42.0	5.6	74	W	.....	.....	.....	10ks	10s	.....	.....	0.41	10.4	Stormy	John Delany
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

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

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

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.98	761.5	30.21	767.3	37	2.8	70	NW	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Alpena, Michigan	29.51	749.5	30.20	767.1	28	— 2.2	88	W	8	3.6	.....	2c	0	W	.....	0.09	2.3	Fair	
Atlantic City, New Jersey	30.36	771.1	30.38	771.6	39	3.9	63	W	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Augusta, Georgia	30.17	766.3	30.36	771.1	45	7.2	80	N	2	0.9	.....	Haze	Sm'e	Calm	N	0	0	Clear	
Baltimore, Maryland	30.35	770.9	30.40	772.1	41	5.0	57	W	4	1.8	.....	2c	2s	NW	W	0	0	Fair	
Barnegat, New Jersey	30.33	770.4	30.35	770.9	40	4.4	64	W	11	4.9	.....	.....	Haze	.....	Calm	0	0	Clear	
Bismarck, Dakota	28.35	720.1	30.16	766.1	13	—10.6	100	N	8	3.6	.....	.....	10s	.....	Calm	Inap.	Inap.	Cloudy	
Boise City, Idaho	27.19	690.6	29.87	758.7	33	0.6	89	NE	1	0.4	.....	0	2s	.....	Calm	0.05	1.3	Fair	
Boston, Massachusetts	30.00	762.0	30.18	766.1	37.5	3.1	49	W	14	6.3	.....	0	0	.....	.....	0	0	Clear	
Brackettville, Texas	28.87	733.3	29.89	759.2	59	15.0	68	S	4	1.8	.....	.....	10s	.....	Calm	0	0	Cloudy	
Breckenridge, Minnesota	29.16	740.7	30.23	767.8	21	— 6.1	86	NE	6	2.7	.....	.....	10s	.....	Calm	Inap.	Inap.	Cloudy	
Brownsville, Texas	29.98	761.5	30.04	763.0	63	17.2	83	Calm	0	0	.....	5ck	5ks	Calm	SE	0	0	Cloudy	
Buffalo, New York	29.53	750.0	30.27	768.8	35.0	1.7	70	W	12	5.4	.....	0	1s	.....	W	0	0	Clear	
Burlington, Vermont	29.90	759.4	30.17	766.3	38	3.3	56	W	6	2.7	.....	2c	2s	W	W	0	0	Fair	
Cairo, Illinois	29.83	757.7	30.24	768.1	43	6.1	75	S	5	2.2	.....	5cs	0	Calm	.....	0	0	Fair	
Camp Grant, Arizona	25.14	638.5	29.94	760.5	48	8.9	21	N	.....	.....	1	0	0	.....	.....	0	0	Clear	
Camp Verde, Arizona	26.76	679.7	30.25	768.3	38	3.3	45	NW	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Campo, California	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Cape Hatteras, N. Carolina	30.26	768.6	30.27	768.8	57	13.9	62	NE	24	10.7	.....	5k	0	NE	.....	0	0	Fair	
Cape Henry, Virginia	30.37	771.4	30.40	772.1	55	11.7	48	NE	20	8.9	.....	0	0	.....	.....	0	0	Clear	
Cape Lookout, N. Carolina	30.33	770.4	30.34	770.6	53	11.7	73	N	12	5.4	.....	2k	0	N	.....	0	0	Fair	
Cape May, New Jersey	30.35	770.9	30.38	771.6	46	7.8	47	NW	22	9.8	.....	0	0	.....	.....	0	0	Clear	
Charleston, South Carolina	30.27	768.8	30.34	770.6	54	12.2	55	N	14	6.3	.....	0	0	.....	.....	0	0	Clear	
Cheyenne, Wyoming	23.78	604.0	29.72	754.9	26	— 3.3	77	NW	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Chicago, Illinois	29.39	746.5	30.09	764.3	44	6.7	67	S	3	1.3	.....	.....	10s	.....	Calm	0	0	Cloudy	
Cincinnati, Ohio	29.59	751.6	30.26	768.6	39	3.9	82	SE	5	2.2	.....	0	8s	.....	Calm	0	0	Cloudy	
Cleveland, Ohio	29.56	750.8	30.33	770.4	31	— 0.6	79	SE	6	2.7	.....	.....	10s	.....	SW	Inap.	Inap.	Cloudy	
Concho, Texas	28.05	712.5	29.71	754.6	54	12.2	86	SE	12	5.4	.....	8cs	0	SE	.....	0	0	Cloudy	
Corsicana, Texas	29.61	752.1	30.09	764.3	48	8.9	85	S	4	1.8	.....	2cs; hz	0	Calm	.....	0	0	Fair	
Davenport, Iowa	29.42	747.3	30.08	764.0	38	3.3	71	NE	8	3.6	.....	.....	10s	.....	Calm	0	0	Cloudy	
Denison, Texas	29.26	743.2	30.06	763.5	52	11.1	86	S	10	4.5	.....	.....	10ks	.....	SW	0	0	Cloudy	
Denver, Colorado	24.56	623.8	29.78	756.4	28	— 2.2	77	SW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Detroit, Michigan	29.52	749.8	30.22	767.6	35	1.7	70	SW	3	1.3	.....	.....	10s	.....	SW	Inap.	Inap.	Cloudy	
Dodge City, Kansas	27.13	689.1	29.38	746.2	47	8.3	77	SW	10	4.5	.....	.....	10s	.....	SW	0	0	Cloudy	
Dubuque, Iowa	29.41	747.0	30.14	765.5	33	0.6	90	NE	3	1.3	.....	.....	10s	.....	.....	0	0	Cloudy	
Duluth, Minnesota	29.49	749.0	30.21	767.3	24	— 4.4	74	Calm	0	0	.....	.....	10ks	.....	NW	Inap.	Inap.	Cloudy	
Eagle Pass, Texas	29.25	742.9	29.99	761.7	56	13.3	94	Calm	0	0	.....	.....	10n	.....	.....	Inap.	Inap.	Light rain	
Eastport, Maine	29.84	757.9	29.91	759.7	36	2.2	53	W	12	5.4	.....	0	Haze	.....	Calm	0	0	Clear	
Erie, Pennsylvania	29.53	750.0	30.27	768.8	37	2.8	71	S	7	3.1	.....	5c; k	0	W	.....	0.20	5.1	Fair	
Escanaba, Michigan	29.48	748.8	30.17	766.3	28	— 2.2	65	W	4	1.8	.....	.....	10s	.....	W	0	0	Cloudy	
Florence, Arizona	28.29	718.6	29.99	761.7	40	4.4	32	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Fort Bayard, New Mexico	23.95	608.3	29.95	760.7	40	4.4	18	SW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Fort Craig, New Mexico	25.39	644.9	.....	.....	38	3.3	45	NW	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Fort Gibson, Indian Ter	29.47	748.5	30.01	762.2	50	10.0	64	S	15	6.7	.....	0	8s	.....	SW	0	0	Fair	
Fort Griffin, Texas	28.67	728.2	29.93	760.2	53	11.7	79	S	6	2.7	.....	.....	10s	.....	Calm	0	0	Cloudy	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	28.72	729.5	29.83	757.7	47	8.3	85	S	12	5.4	.....	.....	10s	.....	SW	0	0	Cloudy	
Galveston, Texas	30.07	763.8	30.11	764.8	65	18.3	73	SE	10	4.5	.....	5ck	5s	W	W	0	0	Cloudy	
Grand Haven, Michigan	29.47	748.5	30.15	765.8	33	0.6	84	E	4	1.8	.....	.....	10s	.....	W	Inap.	Inap.	Cloudy	
Indianapolis, Indiana	29.41	747.0	30.21	767.3	40	4.4	73	SE	7	3.1	.....	2cs	5s	Calm	Calm	0	0	Fair	
Indianola, Texas	30.08	764.0	30.10	764.5	63	17.2	88	NE	13	5.8	.....	.....	10s	.....	Calm	0.27	6.9	Cloudy	
Jacksboro, Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Jacksonville, Florida	30.20	767.1	30.23	767.8	57	13.9	75	NW	7	3.1	.....	0	0	.....	.....	0	0	Clear	
Keokuk, Iowa	29.38	746.2	30.00	762.0	45	7.2	60	S	4	1.8	.....	.....	10s	.....	S	0	0	Cloudy	
Key West, Florida	30.01	762.2	30.04	763.0	78.0	25.6	84	NE	7	3.1	.....	.....	8s	.....	NE	0	0	Threatening	
Kittyhawk, North Carolina	30.36	771.1	30.38	771.6	53	11.7	73	NE	26	11.6	.....	0	0	.....	.....	0	0	Clear	
Knoxville, Tennessee	29.34	745.2	30.40	772.1	35	1.7	80	N	3	1.3	.....	0	Sm'e	.....	.....	0	0	Smoky	
La Crosse, Wisconsin	29.38	746.2	30.15	765.8	31	— 0.6	79	Calm	0	0	.....	.....	10s	.....	Calm	Inap.	Inap.	Cloudy	
La Mesilla, New Mexico	26.00	660.4	30.15	765.8	33	0.6	43	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Laredo, Texas	.....	.....	.....	.....	57	13.9	100	Calm	0	0	.....	.....	10n	.....	Calm	Inap.	Inap.	Light rain	
Leavenworth, Kansas	29.03	737.3	29.87	758.7	50	10.0	64	S	8	3.6	.....	.....	10s	.....	Calm	0	0	Cloudy	
Los Angeles, California	29.71	754.6	30.05	763.3	50	10.0	42	NE	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Louisville, Kentucky	29.69	754.1	30.27	768.8	42	5.6	73	SE	5	2.2	.....	0	Fog	.....	Calm	0	0	Clear	
Lynchburg, Virginia	29.71	754.6	30.42	772.7	44	6.7	60	E	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Maricopa Wells, Arizona	.....	.....	.....	.....	37	2.8	26	N	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Marquette, Michigan	29.37	746.0	30.10	764.5	27	— 2.8	77	W	12	5.4	.....	.....	10n	.....	Calm	0.01	0.3	Light snow	
Mason, Texas	28.38	720.8	30.13	765.3	56	13.3	80	SE	8	3.6	.....	.....	10s	.....	.....	0	0	Cloudy	
Memphis, Tennessee	29.92	760.0	30.25	768.3	41	5.0	83	SE	3	1.3	.....	5c	Fog	SW	Calm	0	0	Fair	
Milwaukee, Wisconsin	29.48	748.8	30.20	767.1	32	0.0	69	NW	4	1.8	.....	.....	10s	.....	.....	0	0	Cloudy	
Mobile, Alabama	30.20	767.1	30.25	768.3	46	7.8	85	N	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Montgomery, Alabama	30.06	763.5	30.31	769.9	40	4.4	86	N	2	0.9	.....	0	Sm'e	.....	Calm	0	0	Clear	
Morgantown, West Virginia	29.27	743.4	30.38	771.6	36	2.2	70	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Mt. Washington, N. H.	23.44	595.4	29.80	756.9	8	—13.3	100	NW	90	40.2	.....	.....	Fog	.....	NW	0.15	3.8	Foggy	
Nashville, Tennessee	29.75	755.6	30.31	769.9	37	2.8	90	E	2	0.9	.....	0	Haze	.....	Calm	0	0	Clear	
New Haven, Connecticut	30.14	765.5	30.27	768.8	40	4.4	56	NW	10	4.5	.....	0	0	.....	.....	0	0	Clear	
New London, Connecticut	30.20	767.1	30.25	768.3	40	4.4	56	W	7	3.1	.....	0	Haze	.....	Calm	0	0	Clear	
New Orleans, Louisiana	30.12	765.0	30.19	766.8	52	11.1	73	NE	8	3.6	.....	4c	0	W	.....	0	0	Fair	
Newport, Rhode Island	30.17	766.3	30.23	767.8	40	4.4	65	W	20	8.9	.....	0	0	.....	.....	0	0	Clear	
New York, New York	30.16	766.1	30.34	770.6	38	3.3	63	W	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Norfolk, Virginia	30.35	770.9	30.41	772.4	46	7.8	76	Calm	0	0	.....	0	Haze	.....	Calm	0	0	Clear	
North Platte, Nebraska	26.93	684.0	29.58	751.3	26	— 3.3	88	NE	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Olympia, Washington Ter.	29.80	756.9	29.84	757.9	40	4.4	91	S	1	0.4	.....	.....	Fog	.....	Calm	0	0	Foggy	
Omaha, Nebraska	28.77	730.7	29.87	758.7	35	1.7	70	NE	8	3.6	.....	.....	10s	.....	S	0	0	Cloudy	
Oswego, New York	29.91	759.7	30.24	768.1	40	4.4	63	SW	12	5.4	.....	.....	10s	.....	NW	0.08	2.0	Cloudy	
Pembina, Dakota	29.46	748.3	30.36	771.1	15.5	— 9.2	83	NW	1	0.4	.....	.....	10s	.....	Calm	0	0	Cloudy	
Philadelphia, Pennsylvania	30.33	770.4	30.39	771.9	37	2.8	62	W	5	2.2	.....	0	Fog	.....	Calm	0	0	Clear	
Phœnix, Arizona	.....	.....	.....	.....	37	2.8	46	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Pike's Peak, Colorado	17.46	443.5	29.66	753.4	4	—15.6	48	SW	18	8.0	.....	8c	2s	Calm	Calm	0	0	Cloudy	
Pioche, Nevada	23.99	609.3	29.76	755.9	29	— 1.7	66	N	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Pittsburg, Pennsylvania	29.48	748.8	30.34	770.6	30	— 1.1	100	E	2	0.9	.....	2k	Fog	NW	Calm	0	0	Fair	
Port Huron, Michigan	29.53	750.0	30.23	767.8	31	— 0.6	89	SW	4	1.8	.....	2cs	5ks	SW	W	Inap.	Inap.	Fair	
Portland, Maine	30.04	763.0	30.09	764.3	38	3.3	54	SW	9	4.0	.....	0	Haze	.....	.....	0	0	Clear	
Portland, Oregon	29.85	758.2	29.94	760.5	45	7.2	100	SW	1	0.4	.....	.....	10n	.....	Calm	0.10	2.5	Heavy rain	
Prescott, Arizona	24.76	628.9	30.12	765.0	28	— 2.2	56	NE	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Punta Rassa, Florida	30.08	764.0	30.10	764.5	72	22.2	75	NE	12	5.4	.....	0	8ks	.....	NE	0	0	Cloudy	
Red Bluff, California	29.74	755.4	30.11	764.8	49	9.4	93	S	4	1.8	.....	.....	10n	.....	Calm	0.01	0.3	Light rain	
Rochester, New York	29.62	752.3	30.26	768.6	33	0.6	69	W	8	3.6	.....	1k	0	W	.....	0	0	Clear	
Roseburg, Oregon	29.35	745.5	29.92	760.0	48.5	9.2	85	S	3	1.3	.....	.....	10n	.....	Calm	0.13	3.3	Light rain	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Sacramento, California	30.08	764.0	30.16	766.1	44	6.7	92	E	3	1 3	.....	0	0	.....	.....	0	0	Clear.	
St. Louis, Missouri	29.55	750.6	30.13	765 3	47	8.3	62	S	7	3.1	.....	.....	10s	.....	Calm	0	0	Cloudy	
St. Marks, Florida	30.21	767.3	30.22	767.6	52	11.1	72	NE	10	4.5	.....	0	2s	.....	NE	0	0	Fair	
St. Paul, Minnesota	29.26	748.2	30.13	765.3	26	—3.3	64	NW	4	1.8	.....	.....	10s	.....	Calm	0	0	Cloudy	
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salt Lake City, Utah	25.60	650.2	29.93	760.2	36	2.2	90	E	2	0.9	.....	.....	10s	.....	Calm	0.21	5.3	Cloudy	
San Antonio, Texas	29.36	745.7	29.94	760.5	67	13.9	87	E	2	0.9	.....	.....	10ks	.....	E	0	0	Cloudy	
San Diego, California	29.99	761.7	30.07	763.8	52	11.1	79	NE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Sandusky, Ohio	29.56	750.8	30.26	768.6	37	2.8	80	S	8	3.6	.....	.....	10s	.....	Calm	0	0	Cloudy	
Sandy Hook, New Jersey	30.32	770.1	30.34	770.6	40	4.4	64	W	15	6.7	.....	0	0	.....	.....	0	0	Clear	
San Francisco, California	30.10	764.5	30.17	766.3	51	10.6	93	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Santa Fé, New Mexico	23.09	586.5	29.63	752.6	29	—1.7	67	S	3	1.3	.....	Haze	0	.....	.....	0	0	Hazy	
Savannah, Georgia	30.23	767.8	30.32	770.1	49	9.4	77	NE	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Shreveport, Louisiana	29.97	761.2	30.20	767.1	46	7.8	92	S	1	0.4	.....	.....	10s	.....	S	0	0	Cloudy	
Smithville, North Carolina	30.33	770.4	30.36	771.1	49	9.4	57	N	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Springfield, Massachusetts	30.06	763.5	30.19	766.8	41	5.0	48	W	7	3.1	.....	0	0	.....	.....	0	0	Clear	
Stanwix, Arizona	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Stockton, Texas	26 86	682.2	29.86	758.4	48	8.9	77	S	16	7.2	.....	0	1s	.....	Calm	0	0	Clear	
Thatcher's Island, Mass	30.10	764.5	30.15	765.8	40	4.4	56	NW	16	7.2	.....	0	0	.....	.....	0	0	Clear	
Toledo, Ohio	29.53	750.0	30.23	767.8	38	3.3	54	Calm	0	0	.....	.....	10s	.....	S	Inap	Inap.	Cloudy	
Tucson, Arizona	27.53	699.2	30.08	764.0	45	7.2	6	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Tybee Island, Georgia	30.27	768.8	30.30	769.6	57	13.9	76	NE	20	8.9	.....	0	0	.....	.....	0	0	Clear	
Umatilla, Oregon	29.66	753.4	.....	.....	35	1.7	90	SE	4	1.8	.....	0	Fog	.....	Calm	0	0	Foggy	
Vicksburg, Mississippi	29.97	761.2	30.34	770.6	46	7.8	69	SE	3	1.3	.....	2ck	Haze	SW	Calm	0	0	Hazy	
Virginia City, Montana	24.15	613.4	29.63	752.6	28	—2.2	88	Calm	0	0	.....	.....	10n	.....	Calm	0.30	7.6	Light snow	
Visalia, California	29.82	757.4	30.01	762.2	36	2.2	90	Calm	0	0	.....	0	0	.....	.....	0.02	0.5	Clear	
Washington, D. C	30.33	770.4	30.44	773.2	35	1.7	90	NW	1	0.4	.....	2c	Sm'e	W	.....	0	0	Smoky	
Wickenburg, Arizona	.....	.....	.....	.....	32	0.0	50	W	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Wilmington, N. Carolina	30.27	768.8	30.35	770.9	46	7.8	60	NE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Winnemucca, Nevada	25.66	651.8	30.02	762.5	32	0.0	79	SW	7	3.1	.....	2cs	0	Calm	.....	Inap.	Inap.	Fair	
Wood's Holl, Mass	30.17	766.3	30.22	767.6	43	6.1	59	NW	22	9.8	.....	0	0	.....	.....	0	0	Clear	
Yankton, Dakota	28.76	730.5	30.11	764.8	27	—2.8	82	E	11	4.9	.....	.....	10s	.....	Calm	0	0	Cloudy	
Yuma, Arizona	29.03	760.2	30.10	764.5	50	10.0	32	N	2	0.9	.....	0	0	.....	.....	0	0	Clear	
SUB-SERIES.																			
York Factory, B. A	30.12	765.0	30.17	766.3	—9.5	—23.1	78	N	10	4.5	.....	3ck	4s	SW	SW	.....	.....	Snowing	J. Fortescue, W. Wood
Havana, Cuba, W. I	29.95	760.7	29.97	761.2	80	26.7	78	Calm	0	0	.....	4ck	0	SE	.....	0	0	Fair	Chas. Hasselbrink.
Kingston, Jamaica, W. I	30.06	763.3	30.06	763.6	78	25.6	82	N	2	0.9	.....	10c	8n	Calm	S	0	0	.....	James Gall.
Navassa, W. I	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. M Everett.
St. Thomas, W. I	.....	.....	.....	.....	80	26.7	91	Calm	0	0	.....	.....	5n	.....	.....	0.30	7.6	Cloudy	G. O. Gellich.
Paramaribo, D. Guiana, S. A	.....	.....	30.01	762.2	82	27.8	88	E	.....	.....	3	5k	5ks	E	.....	0	0	Fair	C. J. Hering.
Batavia, Dutch Guiana, S. A	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Dr. H. Groot.
Medellin, Colombia, S. A	25.18	639.6	.....	.....	66.2	19.0	82	Calm	.....	.....	0	.....	10s;ks	.....	.....	0	0	Cloudy	Thomas Herran.
Honolulu, Oahu, H. I	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Daniel Smith.
Makawao, Maui, H. I	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters: Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573,4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Pl tte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft.. or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.67 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.38 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not certain that the weather for Batavia refers to the moment of observaion.

UNITED STATES NAVAL SERIES.

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

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

STATIONS AND VESSELS.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
NavyYard Mare Island, Cal.	30.14	765.5	49	9.4	45	7.2	??	NW	0.5	0.2	.....	.....	4n	.....	W	.0.002	0.05	.....	.....	.....	
Navy Yard, Pensacola, Fla.	30.30	769.6	.....	.....	55	12.8	74	NE	15	6.7	.....	.....	2	.....	.....	0	0	.....	.....	D. clouds.....	
NavyYard, Portsmouth, N.H	30.17	766.3	61	16.1	38	3.3	63	Calm	0	0	.....	.....	0	.....	.....	0	0	.....	.....	Clear	
Naval Hospital, Yokohama, Japan.....	29.95	760.7	56	13.3	48	8.9	85	Calm	.....	.....	0	.....	4s;hz	.....	NW	0	0	.....	.....	Fair	
Adams. S. 41° 0′ 10″, W. 59° 45′.....	29.90	759.4	45	7.2	48	8.9	78	SE	.....	.....	6	.....	10	.....	SW	Light	Light	Light	SE	D. clouds.....	
Alert, Harima Nada, Japan.....	30.03†	762.7†	65	18.3	65	18.3	84	SE	.....	.....	4	.....	7	.....	SE	.....	.....	Smooth	.....	Hazy.....	
Alliance, Constantinople, Turkey.	30.04	763.0	62	16 7	49	9.4	88	SW	.....	.....	2	.....	10	.....	SW	.....	.....	.....	.....	Overcast.....	
Ashuelot. Tientsin, China.....	30.38	771.6	46	7.8	39	3.9	38	N	.....	.....	3	.....	3	.....	Calm	.....	.....	Smooth	.....	D. clouds.....	
Canonicus, New Orleans, La.....	30.13	765.3	44	6.7	53	11.7	86	ENE	.....	.....	3	.....	7	.....	.....	.....	.....	.....	.....	Cloudy.....	
Colorado, New York, N. Y.....	30.39	771.9	68	20.0	42	5.6	59	WNW	8	3.6	.....	.....	3	.....	WNW	0	0	.....	.....	Fair.....	
Despatch, Constantinople, Turkey.	30.02	762.5	80	26.7	50	10.0	86	WSW	.....	.....	2–4	.....	10	.....	N	.....	.....	.....	.....	Threatening	
Franklin, Norfolk, Va.....	30.47	773.9	61	16.1	48	8.9	58	SE	2.5	1.2	.....	.....	1	.....	SE	0	0	.....	.....	Clear.....	
Gettysburg, Syracuse, Sicily.....	29.91‡	759.7‡	.....	.....	70	21.1	100	E	.....	.....	0–1	.....	1	.....	Calm	0	0	.....	.....	D. clouds.....	
Guard, N. 38° 52′, W. 66° 31′.....	30.30	769 6	59	15.0	57	13.9	63	NW	.....	.....	4	.....	8	.....	NW	.....	.....	Moderate.	N&W	D clouds.....	
Lackawana, Port Townsend, W. T....	30.00	762.0	.....	.....	50	10 0	86	SE	.....	.....	0–1	.....	4	.....	.....	.....	.....	.....	.....	D. clouds.....	
Marion, Smyrna, Turkey.....	29.90	759.4	60	15.6	54	12.2	61	N	.....	.....	1	.....	10	.....	.....	Light	Light	Smooth	.....	D. clouds.....	
Michigan, Erie, Pa.....	29.74	755.4	52	11 1	38	3.3	54	SW	.....	.....	4	.....	0	.....	.....	.....	.....	.....	.....	Clear.....	
Monocacy, Yokohama, Japan.....	29.95	760.7	59	15.0	53	11.7	80	Calm	.....	.....	0	.....	10	.....	.....	.....	.....	.....	.....	Overcast.....	
Monongahela, Gibraltar, Spain.....	30.17	766.3	70	21.1	70	21.1	75	W	.....	.....	1	.....	ck	.....	.....	.....	.....	Smooth	.....	D. clouds.....	
New Hampshire, Port Royal, S.C.....	30.42	772.7	.....	.....	56	13.3	75	NE	13	5.8	.....	.....	.....	.....	.....	0	0	.....	.....	Blue sky.....	
Omaha, S. 14° 00′, W. 77° 45′.....	30.11	764.8	72.5	22.3	70.5	21.4	82	ESE	11	4.9	.....	.....	6	.....	ESE	0	0	Slight	E	Pleasant.....	
Onward, Callao, Peru.....	30.04	763.0	70	21.1	68	20.0	90	SE	.....	.....	3	.....	9	.....	.....	.....	.....	Long	W	Hazy	
Ossinee. Hampton Roads, Va.....	30.44	773.2	71	21.7	52	11.1	60	NNE	.....	.....	3	.....	1	.....	NNE	.....	.....	.....	.....	D. clouds.....	
Palos, Shanghai, China.....	30.03	762.7	67	19.4	59	15 0	94	NW	.....	.....	3–5	.....	10	.....	N&W	.....	.....	.....	.....	Drizzling	
Pensacola, Mare Island, Cal.....	30.23	767.8	.....	.....	52	11.1	79	Calm	.....	.....	0	.....	1	.....	.....	0.002	0.05	.....	.....	.....	
Plymouth. Norfolk, Va.....	30.00	762.0	64	17.8	49	9.4	78	Calm	.....	.....	0	.....	0	.....	.....	.....	.....	.....	.....	Clear.....	
Ranger, Shanghai, China.....	30.09	764.3	.....	.....	64	17.8	83	N	.....	.....	4–6	.....	10	.....	N	.....	.....	.....	.....	Rainy.....	
Rio Bravo, Brownsville, Texas.....	29.94	760.5	.....	.....	64	17.8	89	WNW	.....	.....	2	.....	10	.....	SE	.....	.....	.....	.....	Hazy.....	
Santee, Annapolis, Md.....	30.45	773.4	59	15.0	51	10.6	65	NW	.....	.....	1	.....	2	.....	.....	0	0	.....	.....	Hazy.....	
Saratoga, Hampton Roads, Va.....	30.72†	780.3†	.....	.....	55	12.8	??	N	.....	.....	2	.....	0	.....	.....	0	0	.....	.....	Clear.	
St. Louis, League Island, Pa	30.20	767.1	40	4.4	37	2.8	81	W	6	2.7	.....	.....	1	.....	Calm	0	0	.....	.....	Clear.....	
Swatara, Hampton Roads, Va.....	30.42	772.7	.....	.....	56	13.3	63	NE	.....	.....	1	.....	0	.....	.....	.....	.....	.....	.....	Blue sky.....	
Tennessee, Yokohama, Japan.....	30.02	762.5	66	18.9	53	11.7	67	NW	2	0.9	.....	.....	5	.....	N&W	0	0	None	.....	Hazy.....	
Trenton, Villefranche, France.....	30.17	766.3	68	20.0	67	19.4	89	E	4	1.8	.....	.....	0	.....	.....	0	0	.....	.....	Blue sky.....	
Vandalia, Villefranche, France,...	30.14	765.5	65	18.3	64	17.8	68	SE	.....	.....	1	.....	0	.....	.....	.....	.....	.....	.....	Blue sky....	
Wabash, Boston, Mass.....	30.16	766.1	49	9.4	39	3.9	55	WNW	19	8.5	.....	.....	0	.....	.....	0	0	.....	.....	Blue sky.....	
Wyoming, Washington, D. C.....	30.49†	774.4†	.....	.....	52	11.1	.....	Calm	.....	.....	0	.....	.....	.....	.....	.....	.....	.....	.....	D. clouds	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. ‡ Barometer corrected for instrumental error and reduced to sea-level.

UNITED STATES MARINE SERIES.

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

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.	Character.	Direction from—		
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—				
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama, N. 23° 38′ 47″, W. 110° 50′ 13″			29.72	754.9	78	25.6	78	NNW			4		0			Light	NNW	Clear.	Capt. Howard.
S. S. City of Peking, Yokohama, Japan			30.07*	763.8*	49	9.4	85	NNW			1		0			Smooth		Blue sky.	Lt. Z. L. Tanner, U.S.N. Capt. Dearborn.
S. S. City of Sydney																			
S. S. City of Tokio, N. 36° 44′, W. 125° 50′			30.20	767.1	60	15.6		SSW			4		2		SE	Long	WNW	Blue sky.	Capt. Maury. Capt. Searle. Capt. Whitebury. Capt. Morse. Capt. Cavarly. Capt. Connolly. Capt. Austin.
S. S. Colima																			
S. S. Costa Rica																			
S. S. Dakota																			
S. S. Georgia																			
S. S. Grenada																			
S. S. Wilmington																			

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

WHITE STAR LINE MARINE SERIES.

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

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

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

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

S. S. Belgic, N. 30° 42′, W. 178° 34′			30.21†	767.3†				W			2		Light		SW	Moderate	WNW	Fine	Capt. John Metcalf. Capt. W. H. Kidley. Capt. H. Parsell.
S. S. Gaelic																			
S. S. Oceanic																			

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

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

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

S. S. Baltimore																			Capt. H. Lüdemann.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig																			Capt. K. Undütsch.
S. S. Nürnberg, N. 38° 30′, W. 63° 23′			30.11	764.8	65.0	18.3	68	NW			6		kn		NE	Heavy	NW	Overcast.	Capt. A. Jaeger.
S. S. Ohio, N. 49° 55′, W. 4° 22′			29.87	758.7	50.0	10.0	72	SSW			6		10			Smooth		Overcast.	Capt. G. Meyer.

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

UNITED STATES MARINE SERIES.—Continued.

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

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Lo'wr	Upper.	Lower.	Character.	Direction From—		
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second	0—10.	0—10.	0—10.	From—	From—				
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, Philadelphia, Pa			30.01*	762.2*	49	9.4	100	W			6		1		NW				Captain Sargent.
S. S. Ohio. N. 44° 10′, W. 58° 02′			29.86	758 4	52	11.1	86	WSW			6		1		W	Rough	W	Fair	Captain Morrison.
S. S. Pennsylvania. N. 50° 16′, W. 25° 26′			29.71†	754.6†	53	11.7	86	W			6		10		WNW	Large	SE	Cloudy	Captain Harris.

NOTE.—The originals give the barometer as read off; the wind-force by the scale 0 to 12. *Aneroid; correction for elevation applied, instrumental error not known.
†Corrected for temperature and elevation, instrumental error not known.

RED STAR LINE MARINE SERIES.

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

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

ALLAN LINE MARINE SERIES.

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

S. S. Hibernian	Capt. W. Richardson.
S. S. Scandinavian	

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, Provincetown, Mass.			30.04	763.0	45	7.2	68	WNW	16	7.2			0					Clear	Capt. James Jorgensen.

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

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

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

Albert J. Myer

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

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON NOVEMBER 5, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:58 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:18 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:38 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours	.....	.....	30.09	764.2	70.0	21.1	69	NW	.....	.....	1	.....	2	.....	.....	0	0	Fair	Michel.
Algiers	.....	.....	30.04	763.0	68.0	20.0	77	N	.....	.....	1	.....	1	.....	.....	0	0	Very fair.	Peter.
La Calle	.....	.....	30.11	764.8	67.5	19.7	60	NE	.....	.....	2	.....	3	.....	.....	0	0	Pretty fair.	Fleury.
Tunis	.....	.....	30.07	763.6	65.1	18.4	80	NE	.....	.....	3	.....	7	.....	.....	0.055	1.4	Very cloudy	Jacques.
Sfax	.....	.....	30.11	764.7	66.2	19.0	.....	SW	.....	.....	1	.....	8	.....	.....	0	0	Very cloudy	Husson.
Saida	.....	.....	30.12	765.0	63.7	17.6	47	NNW	.....	.....	2	.....	1	.....	.....	0	0	Very fair.	Millot.
Tebessa	.....	.....	30.08	764.0	.....	.....	.....	Calm	.....	.....	0	.....	1	.....	.....	.....	.....	Very fair.	Bourgeois.
Geriville	.....	.....	30.06	763.5	62.2	16.8	64	NW	.....	.....	2	.....	2	.....	.....	Inap.	Inap.	Fair	Lemaillot.
Laghouat	.....	.....	30.09	764.3	68.0	20.0	47	W	.....	.....	2	.....	2	.....	.....	0	0	Fair	Guyot.
Biskra	.....	.....	30.10	764.6	73.4	23.0	27	N	.....	.....	2	.....	4	.....	.....	0	0	Cloudy	Kuntz.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

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

AUSTRIAN SERIES.

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

Agram	29.56	750.8	30.11	764.9	52.0	11.1	56	Calm	.....	.....	0	.....	0	.....	.....	0	0	.....	Prof. Ivan Stozir
Cracow, I. R. Observatory	29.33	744.9	30.11	764.7	45.7	7.6	80	NE	.....	.....	1	.....	0	.....	.....	0	0	.....	Dr. Wierzbicki.
Eperies	29.22	742.3	30.12	765.0	47.5	8.6	65	Calm	.....	.....	0	.....	0	.....	.....	0	0	.....	Julius Mikolik.
Gratz	28.87	733.2	30.16	765.7	46.9	8.3	70	SSW	.....	.....	3	.....	0	.....	.....	0	0	.....	Andreas Rospini.
Hermannstadt	28.69	728.6	30.14	765.5	45.7	7.6	63	N	.....	.....	1	.....	0	.....	.....	0	0	.....	Prof. Reissenberger.
Kremsmünster	28.71	729.1	30.08	764.1	41.0	5.0	94	NE	.....	.....	1	.....	3	.....	.....	0	0	.....	Prof. C. Wagner.
Lemberg	29.12	739.7	30.13	765.4	44.4	6.9	80	SW	.....	.....	1	.....	0	.....	.....	0	0	.....	Dr. T. Stanecki.
Pola	29.05	760.7	30.07	763.6	58.3	14.6	69	WNW	.....	.....	2	.....	0	.....	.....	0	0	.....	I.R.Hydrographic Office.
Szathmar	29.71	754.5	30.18	766.6	46.0	7.8	68	S	.....	.....	2	.....	3	.....	.....	0	0	.....	Johann Tamas, S. J.
Szegedin	29.87	758.8	30.16	766.1	45.3	7.4	86	N	.....	.....	1	.....	0	.....	.....	0	0	.....	Karl Stancel.
Trieste	29.08	761.5	30.08	764.1	67.6	14.2	90	SW	.....	.....	1	.....	0	.....	.....	0	0	Clear	P. Busin.
Vienna	29.40	746.7	30.11	764.7	46.9	8.3	84	Calm	.....	.....	0	.....	0	.....	.....	0	0	.....	I. R. Central Met. Obs'y.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time, and at Trieste at 7 a. m. of the following day. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 388.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

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

Arlon	28.47	723.2	29.08	761.6	51.3	10.7	88	WSW	.....	.....	2	.....	10	.....	.....	0.130	3.3	.....	Prof. M. Passau.
Brussels	29.09	754.1	29.80	759.2	54.9	12.7	77	SW	.....	.....	4	3	5	SW	SW	0	0	.....	Royal Observatory.
Furnes	29.84	758.0	29.87	758.6	53.2	11.8	89	WSW	.....	.....	4	.....	8	.....	.....	0.079	2.0	Raining	M. E. de Cae.
Maeseyck	29.76	756.0	29.89	759.3	54.1	12.3	87	SW	.....	.....	4	.....	5	.....	.....	0	0	.....	M. Pierrot.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:3, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

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

STATIONS.	Barometer. Corrected for instrum't'al error and temperature. Inches.	Barometer. Corrected for instrum't'al error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Aberdeen	29.32	744.7	29.42	747.3	52.9	11.6	.....	SW	11	4.9	.....	.....	2	.....	.....	0.005	0.13	Blue sky.....	W. Boswell.
Ardrossan	29.49	749.0	29.50	749.3	53	11.7	.....	SW	.....	.....	3	.....	6	.....	.....	.....	.....	D. clouds.....	William McNeil.
Armagh, Observatory	.....	.....	29.56	750.8	50.2	10.1	.....	SSW	19	8.5	.....	.....	10	.....	.....	.....	.....	Squally.....	S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)	.....	.....	29.68	753.9	51.4	10.8	.....	WSW	15	6.7	.....	.....	4	.....	.....	.....	.....	D. clouds.....	John Hartnup.
Birr Castle, (Parsonstown)	.....	.....	29.63	752.6	53.8	12.1	.....	SSW	.....	.....	1	.....	10	.....	.....	.....	.....	Overcast.....	J. Dreyer.
Bradford, Yorkshire	29.23	742.4	29.65	753.1	52.5	11.4	.....	S	.....	.....	3	.....	3	.....	.....	0.16	4.1	D. clouds.....	J. McLandsborough.
Bridgetown, (Barbados)	29.86	758.4	29.90	759.4	82	27.8	.....	NE	.....	.....	1	.....	5	.....	.....	.....	.....	Overcast.....	Pvt. G. W. Roberts, A.
Cambridge, Observatory	.....	.....	29.77	756.1	58.0	14.4	.....	SW	.....	.....	1	.....	5	.....	.....	Blank	Blank	D. clouds.....	H. Todd. [H. C.
Cardington	.....	.....	29.78	756.4	55.0	12.8	.....	SW	.....	.....	1	.....	1	.....	.....	.....	.....	Blue sky.....	John McLaren.
Chatham, School M. E	29.68	753.9	29.81	757.2	57.2	14.0	.....	SW	.....	.....	2	.....	2	.....	.....	.....	.....	Blue sky.....	Lt.-Col. C.M.Martin, R.E.
Dartmoor	28.40	721.3	29.88	758.9	49.8	9.9	.....	W	.....	.....	3	.....	5	.....	.....	.....	.....	Showery.....	Alexander Watt.
Davos Platz (Switzerland)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Francis Redford, M. A.
Donaghadee	29.62	749.8	29.55	750.6	51	10.6	.....	SW	.....	.....	4	.....	5	.....	.....	.....	.....	D. clouds.....	J. Mac Gowan.
Dover	29.91	759.7	29.93	760.2	56	13.3	.....	WSW	.....	.....	3	.....	4	.....	.....	.....	.....	½ clouded...	J. Costello.
Eccles, (near Manchester)	.....	.....	29.68	753.9	53.6	12.0	.....	SW	2.6	1.2	.....	.....	6	.....	.....	.....	.....	Overcast.....	Thomas Mackereth.
Falmouth, Observatory	29.65	753.1	29.87	758.7	55.7	13.2	.....	WSW	.....	.....	4	.....	6	.....	.....	.....	.....	Overcast	The Staff.
Fort Napier, (Natal)	27.51	698.7	29.71	754.6	79.4	26.3	.....	E	.....	.....	3	.....	2	.....	.....	.....	.....	D. clouds.....	Pvt. G. Salmon, A.H.C.
Free Town, (Sierra Leone)	.....	.....	29.91	759.7	88	31.1	.....	Calm	.....	.....	0	.....	3	.....	.....	.....	.....	D. clouds.....	
Galway, Queen's College	.....	.....	.....	.....	54	12.2	.....	SW	.....	.....	6	.....	5	.....	.....	.....	.....	D. clouds.....	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	29.96	761.0	30.02	762.5	66.4	19.1	.....	E	.....	.....	1	.....	4	.....	.....	.....	.....	D. clouds.....	Corpl. C. Aitken, A.H.C.
Glasgow, Observatory	29.30	744.2	29.50	749 3	50.0	10.0	.....	WSW	.....	.....	3	.....	9	.....	.....	.....	.....	Gloomy.....	D. G. Maclean.
Great Yarmouth	29.74	755.4	29.75	755.6	54	12.2	.....	WSW	.....	.....	3	.....	4	.....	.....	.....	.....	D. clouds.....	G. T. Watson.
Greenwich, Royal Obs'y	29.65	753.1	29.82	757.4	57.3	14.1	.....	W	.....	.....	2	.....	5	.....	.....	.....	.....	D. clouds.....	The Staff, for G. B. Airy.
Guernsey	29.69	754.1	29.90	759.4	57.5	14.2	.....	SW	.....	.....	2	.....	5	.....	.....	.....	.....	D. clouds.....	Dr. S. E. Hoskins, F.R.S.
Helston	.....	.....	29.89	759.2	57	13.9	.....	SW	.....	.....	2	.....	3	.....	.....	0.14	3.6	D. clouds.....	M. P. Moyle.
Holyhead	29.63	752.6	29.69	754.1	53	11.7	.....	SW	.....	.....	5	.....	2	.....	.....	.....	.....	Blue sky.....	John Tilston.
Jersey	29.67	753.6	29.94	760.5	56.5	13.6	.....	WSW	.....	.....	5	.....	3	.....	.....	Blank	Blank	D. clouds.....	J. Fisher.
Kew, Observatory	.....	.....	29.83	757.7	55.0	12.8	.....	SW	12	5.4	.....	.....	8k	.....	.....	.....	.....	D. clouds.....	The Staff.
Kingstown	29.64	752.8	29.67	753.6	53	11.7	.....	W	.....	.....	3	.....	8	.....	.....	.....	.....	Overcast.....	George Mitchell.
Leicester, Museum	.....	.....	29.74	755.4	55.9	13.3	.....	SW	.....	.....	2	.....	10	.....	.....	.....	.....	D. clouds.....	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.97	761.2	30.04	763.0	65	18.3	.....	NE	.....	.....	1	.....	8	.....	.....	Blank	Blank	Overcast.....	S'gt. C. Arbelter, A.H.C.
Nairn	29.27	743.4	29.36	745.7	49	9.4	.....	SW	.....	.....	1	.....	2	.....	.....	.....	.....	¼ clouded..	W. D. Penny.
Nassau, (Bahamas)	.....	.....	30.02	762.5	82.5	28.1	.....	NE	.....	.....	1	.....	5	.....	.....	.....	.....	D. clouds.....	C. S. Duncombe.
Nottingham, Observatory	29.54	750.3	29.72	754.9	57.5	14.2	.....	SSW	.....	.....	4	.....	5c;k	.....	SW	0.006	0.15	D. clouds.....	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.20	741.7	29.72	754.9	54.0	12.2	.....	SW	.....	.....	3	.....	1	.....	.....	.....	.....	D. clouds.....	Rev. Stephen Whitty
Oxford, Radcliffe Obs'y	.....	.....	29.79	756.7	56	13.3	.....	SW	.....	.....	1	.....	7	.....	.....	.....	.....	Threatening	F. Lucas
Plymouth	29.78	756.4	29.86	758.4	57.5	14.2	.....	WSW	.....	.....	3	.....	2	.....	.....	.....	.....	D. clouds.....	John Merrifield.
Roche's Point	29.68	753.9	29.73	755.1	54	12.2	.....	SW	.....	.....	4	.....	8	.....	.....	.....	.....	Dull	W. Kennedy.
Saint Ann's Head	29.62	752.3	29.78	756.4	55	12.8	.....	WSW	.....	.....	4	.....	2	.....	.....	.....	.....	Blue sky.....	John C. Walker.
Sandwick Manse, (Orkneys)	.....	.....	29.31	744.5	48.3	9.1	.....	W	20	8.9	.....	.....	8	.....	.....	.....	.....	Showery.....	Rev. C. Clouston, LL. D
Scutari, Cemetery, (Turkey)	.....	.....	30.10	764.5	50.4	10.2	.....	N	.....	.....	2	.....	10	.....	.....	.....	.....	Overcast.....	Sergt. W. H. Lyne.
Sheffield	29.44	747.8	29.70	754.4	53.7	12.1	.....	W	.....	.....	2	.....	2	.....	.....	0.20	5.1	Blue sky.....	W. F. Cooper.
Silloth Rectory	29.55	750.6	29.58	751.3	53.7	12.1	77	W	.....	.....	3	.....	4	.....	.....	1.160	29.21	D. clouds.....	Rev. F. Redford, M. A.
Stonyhurst, Observatory	.....	.....	.....	.....	50.7	10.4	.....	SW	.....	.....	3	.....	8	.....	.....	.....	.....	D. clouds.....	Rev. S. J. Perry.
Stornoway, Lews C. (Hebr.)	.....	.....	29.20	741.7	48	8.9	.....	SW	.....	.....	5	.....	8	.....	.....	.....	.....	D. clouds.....	John Smith.
Stratfield Turgiss	29.62	752.3	29.83	757.7	56.2	13.4	.....	SW	.....	.....	2	.....	3	.....	.....	.....	.....	Squally.....	Rev. C. H. Griffith, F.M.S.
Thurso	.....	.....	29.29	744.0	53	11.7	.....	SW	.....	.....	2	.....	4	.....	.....	.....	.....	D. clouds.....	John Trotter.
Truro, Royal Institution	.....	.....	29.87	758.7	59	15.0	.....	SW	.....	.....	4	.....	6	.....	.....	.....	.....	D. clouds.....	W. Newcombe.
Valencia, Observatory	.....	.....	29.66	753.4	54.7	12.6	.....	SSW	29	13.0	.....	.....	10	.....	.....	.....	.....	Misty.....	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)	.....	.....	.....	.....	49	9.4	.....	W	.....	.....	4	.....	3	.....	.....	0.06	1.5	.....	Henry Mercer.
Cape Good Hope, Obs'y	29.76	755.9	29.80	756.9	70.3	21.3	70	NW	20	8.9	.....	6	8	.....	.....	.....	.....	.....	The Staff, for E. J. Stone.
Hobart Town, (Tasmania)	.....	.....	29.64	752.8	46.0	7.8	86	NW	.....	.....	3	.....	8kn	.....	.....	0.48	12.2	Cloudy.....	Francis Abbott, F.R.A.S.
Leith, Restalrig Park	.....	.....	29.53	750.0	52.7	11.5	.....	W	.....	.....	3	.....	6k	.....	.....	0.15	3.8	Fine	Andrew Gibb.
Mauritius, Observatory	29.81	757.2	30.00	762.0	78.1	25.6	61	ENE	13.0	5.8	.....	0	2	.....	E	0	0	Fine	C. Meldrum.
Melbourne, Observatory	29.82	757.4	29.91	759.7	55.9	13.3	76	WSW	8	3.6	.....	.....	10	.....	.....	0.13	3.3	Dull	R. L. J. Ellery.
Monach L't-house, (Hebrides)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Youngclause.
North Unst, (Shetland Is.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Robert Burnet.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m. *Rain-fall during the month.

Marine Series. Vessels.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea or swell. Height scale 0—9	Sea or swell. Direction from—	Weather	Observer.
S. S. Algeria, N. 43° 15′, W. 50° 15′	.....	.....	30.16	766.1	44	6.7	.....	WNW	.....	.....	5	.....	5	.....	.....	*15	WNW	D. clouds.....	Capt. W. Watson.
S. S. Batavia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. J. E. Mouland.
Ship Camperdown	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. A. T. Miller.
Brig Catherine, N. 49° 50′, W. 9° 20′	.....	.....	29.82	757.4	56	13.3	.....	SSW	.....	.....	4	.....	7	.....	.....	4	W	Misty.....	Capt. Adam Smith.
Barque Celeste	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. D. F. McKechnie
S. S. Hibernia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. W. R. Cato.
Barque Maroon	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. A. T. Brown.
Ship Mikado	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. C. C. Prehn.
S. S. Seine	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. H. Manning.
Barque Sorata	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. Jas. J. Price.
Schooner Traveller, N. 51° 5′, E. 2° 35′	.....	.....	29.83	757.7	56	13.3	.....	W	.....	.....	4	.....	5	.....	.....	3	SW	Showery.....	Capt. Alex Simpson.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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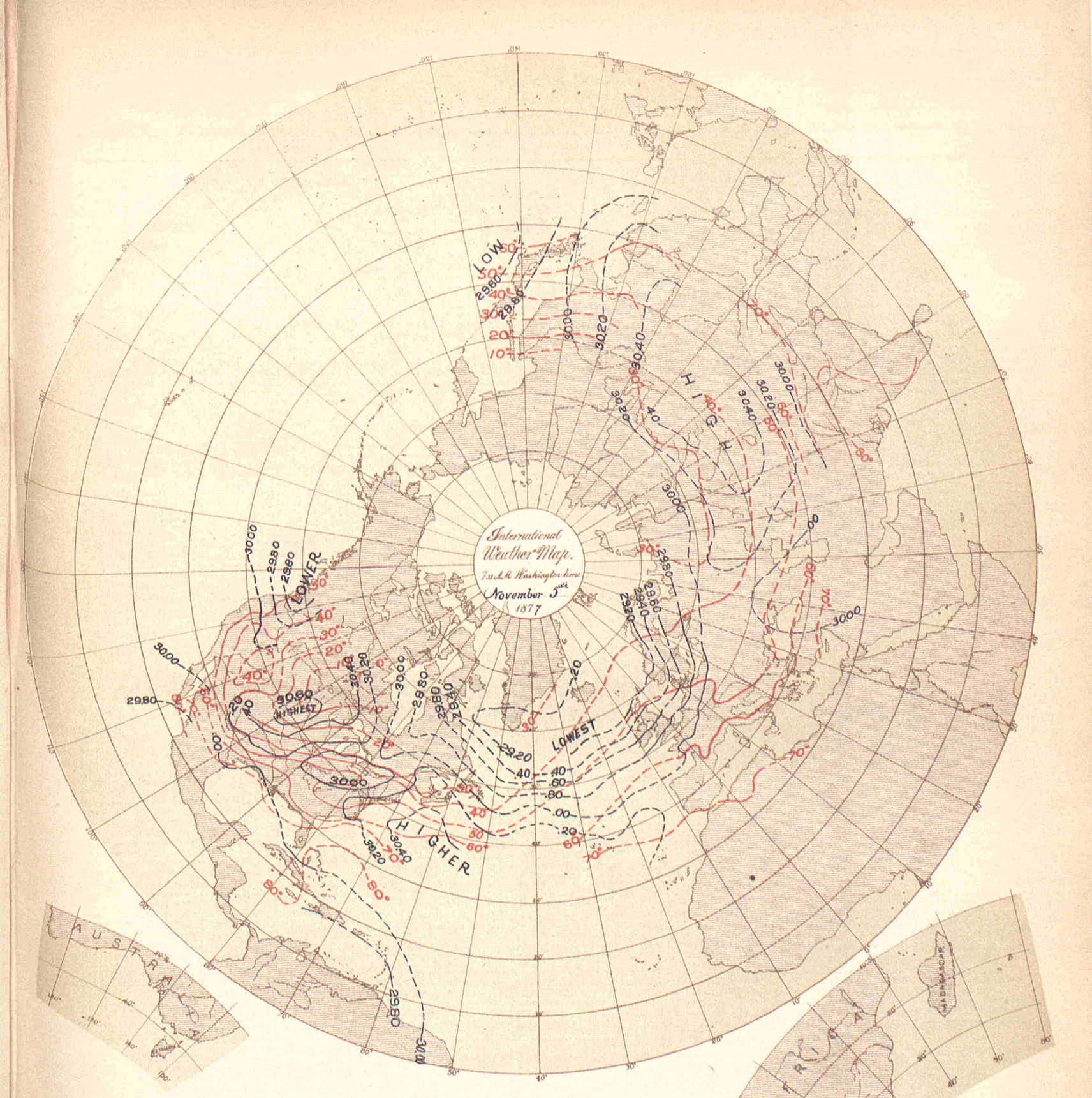
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

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



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

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

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

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

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

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

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

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST BOSTON

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
San José	26.16	664.4			68.0	20.0	98	SW			1	5cks	1cd		E	1.1	28.		Federico Maison.

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

DANISH SERIES.

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

Copenhagen	29.62	752.4	29.67	753.6	46.2	7.9	89	SW			2		10					Foggy
Fanöe	29.58	751.3	29.60	751.8	50.4	10.2	89	WSW			4		9					
Godthaab, (Greenland)	29.15	740.5	29.20	741.6	26.6	—3.0	76	ENE			2		3					
Stykkisholm, (Iceland)	29.09	738.9	29.13	740.0	35.4	1.9	96	NE			7		5					
Thorshavn, (Faröe)	29.10	739.1	29.13	740.0	42.6	5.9	90	Calm			0		5					
Vestervig	29.30	744.2	29.47	748.5	47.8	8.8	92	S			6		10					Raining

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

FRENCH SERIES.

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

Alençon, Normal School	29.48	748.7	30.03	762.7	53.6	12	62	W			1		5		E	0.04	1.	Cloudy	Collignon, Director.
Amiens, Normal School	29.80	756.8	29.91	759.6	58.6	14.8	74	SW			2		2		W	0	0	Slightly cl'dy	Bouvarne, Director.
Avignon, Normal School	30.00	762.0	30.08	764.0	64.0	17.8	70	ENE			1		2		WNW	0	0	Partly cl'dy.	Mr. Giraud, Director.
Bar-sur-Seine	29.46	748.2	30.02	762.5	57.2	14.0	69	SW			2		8kn		SW	0	0	Very cloudy	C. Saillard.
Beaumette Obs'y (Angers)	29.83	757.7	29.99	761.8	57.0	13.9	75	SW	3.1	1.4					SW	0.016	0.4		Albert Cheux.
Beauvais	29.08	753.8	29.96	761.0	56.7	13.7	68	WSW			2		8		WSW	0	0	Very cloudy	Normal School.
Besançon	29.19	741.3	30.08	763 9	57.9	14.4	74	SSW			2		8		W	0	0	Very cloudy	Normal School.
Bourg-en-Bresse	29.21	741.9	30.13	765.4	59.9	15.5	62	SW			1		5cn		SW	0	0	Cloudy	Normal School.
Bourges, Normal School	29.49	749.1	30.04	763.1	57.4	14.1	80	SW			4		5		NE	0	0	Cloudy	A. Wagner, Director.
Brest, Naval Observatory	29.68	753.8	29.90	759.4	59.2	15.1	76	W			3		5		W	0.059	1.50	Squally	The Staff.
Carcassonne, Normal School	29.69	753.4	30.07	763.8	63.5	17.5	86	E			1		2		E	0	0	Slightly cl'dy	Vateau, Director.
Caen	29.87	758.7	29.95	760.7	56.8	13.8	75	ENE			2		2		ENE	0	0	Slightly cl'dy	Normal School.
Chartres, Normal School	29.43	747.4	29.98	761.6	64.4	18	71	SW			1		5		NE	0.091	2.3		Lequin, Director.
Châlons-sur-Marne, N. Sch'l	29.66	753.3	29.97	761.3	61.3	16.3	69	SW			6		5k		SW	0	0	Cloudy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.67	728.3	30.00	762.0	64.2	17.9	42	ESE			1		2			0	0	Slightly cl'dy	Alluard, Director.
Commercy, Normal School	29.16	740.7	30.07	763.8	54.7	12.6	74	WSW			2		2		WSW	0.04	1.	Slightly cl'dy	Dr. Goulet, Director.
Commune de Gréasque*	28.98	736.1	30.12	765.1	62.1	16.7	63	NW			2		5		NW	0	0	⅜ covered	——. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	29.75	755.6	29.97	761.1	58.5	14.7	79	S			2		8		E	0.126	3.2	Very cloudy	Mouillot, Director.
Le Mans, Normal School	29.71	754.5	30.01	762.3	55.4	13	77	W			2		8		W	0.04	1.	Very cloudy	Poirrier, Director.
Lons-Le-Saulnier, N.School	29.12	739.7	30.04	763.0	58 8	14.9	68	WNW			2		10		E	0	0	Covered	Pin, Director.
Lorient, Naval Observatory	29.90	759.4	30.00	761.9	59.4	15.2	68	W			3		8		W	0 051	1.3	¾ covered	T. Carré, Director.
Mâcon, Normal School	29.35	745.4	30.03	762.8	57.4	14.1	84	S			2		5		W	0	0	Cloudy	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	28.99	736.4	30.04	763.0	53.6	12	78	SW					10		NE	0	0	Covered	Normal School
Nismes, Normal School	29.89	759.3	30.09	764.2	64 4	18	65	W			1		2		NE	0	0	Slightly cl'dy	Boyer, Director.
Orleans, Normal School	29.62	752.4	30.00	762.1	56.5	13.6	89	E			2		10			0	0	Covered	Bernard, Director.
Paris, Observatory	29.73	755.2	29.97	761.3	56.8	13.8	77	SW			1		9k		SW	0	0	Almost cov'd	National Observatory.
Privas	29.04	737.7	30.11	764.7	57.2	14	69	SW			2		5		SW	0	0	Cloudy	Normal School
Rochefort, Naval Obs'y	30.01	762.3	30.04	763.1	60.8	16.0	79	W			3		8		W	0.04	1.	¾ covered	Lt. Decante, Director.
Rouen, Normal School	29.84	758.4	29.95	760.6	58.6	14.8	63	SW			1		5		W	0	0	Cloudy	F. Lucard, Director.
Tarbes, Normal School																			T. Hugues, Director.
Villefranche	29.38	746.2	30.08	764.1	63.5	17.5	70	E			1		5		W	0	0	Cloudy	Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.76	756.0	29.79	756.7	81.0	27.2										0.67	17.		L'Abbé Marchési.
Marseilles, Observatory			30.07	763.8	65.5	18.6	60	W			1		5			0	0	Partly cl'dy	The Staff.
Mont-Louis	24.91	632.8	30.23	767.8	48.0	8.9	69	SE	11.2	5.00			7		SW	0	0		Mr. Falguère.
Nice			30.06	763.4	62.6	17.0	74	SE					5		SW	0	0	Cloudy	Dr. A. Niepce.
Paris, Montsouris Obs'y	29.69	754.1	29.97	761.1	56.5	13.6	77	WSW			3		8		WSW	0.008	0.2		Marié Davy, Director.
Perpignan			30.07	763.8	59.7	15.4	84	E	1.9	0.83			10		NE	0.008	0.2		Dr. Fines.
Pic du Midi, (Summit,) H. P.	21.27	540.2			34.9	1.6		SW			2		6					Cloudy	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.54	572.5			39.2	4.0		SW			2		6			0	0	Cloudy	Gen'l de Nansouty.
Saint Maur, (near Paris)	29.81	757.1	29.97	761.3	55.9	13.3	86	SSW			1		10			0	0	Covered	E. Renou.
Toulouse, Observatory	29.30	746.5	30.11	764.9	59.5	15.3	77	S			1		6			0	0		The Staff.
Tours	29.82	757.3	30.01	762.3	56.3	13.5	82	SW			1		5		WNW	0	0		C. Marquet.
Versailles, (near Paris)			29.98	761.4	56.8	13.8	78	W			1		8			0.043	1.09	Almost cov.	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.28	769.2	30.31	769.8	46.1	7.3	80	NNW	5.4	2.4			10n			0.319	8.1	Raining	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; for Montsouris, the barometer reduced to freezing but not to sea-level. At Mirecourt the cloud direction is apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,580.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,363 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

GERMAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Berlin	29.74	755.4	29.91	759.7	51.4	10.8	78	SW			1		7			0	0		Prof. Arndt.
Breslau	29.51	749.5	30.04	763.0	50.5	10.3	73	S			3		1			0	0		Royal University Obs'y
Carlsruhe	29.58	751.2	30.00	762.0	56.8	13.8	72	S			2		10			0	0		Albert Senz.
Cassel	29.36	745.8	29.97	761.2	52.9	11.6	83	WSW			2		8	SSW		0	0		Dr. H. Möhl.
Crefeld	29.72	754.8	29.88	758.9	55.6	13.1	74	SW			4		6k			0	0		Director Lose.
Emden	29.79	756.6	29.82	757.5	51.8	11.0	86	W			3		1			0	0		Prof. Prestel.
Frankfort on the Main	29.67	753.5	30.03	762.8	56.8	13.8		SW			2		4			0	0		Physical Society.
Friedrichshafen	28.65	727.8	30.11	764.7	50.7	10.4	75	SW			3		3	SW		0	0		M. Wilhelm.
Hamburg	29.71	754.6	29.78	756.4	51.3	10.7	89	WSW			2		10n			0.008	0.2	Drizzling	Captain F. Hegemann.
Kiel	29.72	754.9	29.74	755.4	49.8	9.9	87	WSW			4		10			0	0		Prof. G. Karsten.
Königsberg, (Prussia)	29.88	758.9	29.95	760.7	47.1	8.4	69	S										Clear	Prof. E. Luther.
Köslin			29.84	757.9	46.4	8.0		S			4		1			0	0		H. Müller.
Leipsic, Observatory	29.58	751.2	30.00	761.9	52.3	11.3	68	SW			3		6	SW		0	0		Prof. Bruhns.
Memel, Naval School	29.93	760.3	29.98	761.5	42.6	5.9	84	S			3		10ks						Reinbrecht von Skalweit.
Neufahrwasser	29.93	760.3	29.95	760.7	44.1	6.7	83	S			4		7			0	0		A. Lothes.
Posen	29.72	754.9	30.02	762.5	48.2	9.0	67	SW			2		2					Clear	Dr. Magener.
Strassburg Obs., (in Alsace	29.50	749.2	30.05	763.3	54.0	12.2	74	S			3		10	W		0	0		Dr. Schur.
Stuttgart	29.08	738.5	30.01	762.2	57.2	14.0	62	SW			4		8	W		0	0		Prof. Schoder.
Treves, (Trier)	29.35	745.6	29.87	758.8	55.4	13.0	80	SW			5		10			0.042	1.06	Foggy	Prof. Flesch.
Weissenburg, (Bavaria)	28.54	724.9	30.06	763.5	50.7	10.4	68	SW	2	1			10	SW		0	0	Covered	Dr. Von Bebber.
Wustrow, Naval School	29.81	757.2	29.84	757.9	48.0	8.9	83	SSE			5		10					Covered	E. F. Schütz.
German Naval Series.																			

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

GREEK SERIES.

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

Athens	29.73	755.1	30.12	765.1	56.3	13.5		E										⅛ clear	Dr. J. F. J. Schmidt.

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

INDIAN SERIES.

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

Kurrachee	29.80	757.0	29.86	758.3	82.3	27.9	73	SSW	13.0?	5.8?			5		SW	0	0		D. clouds
Deesa	29.43	747.6	29.91	759.6	85.8	29.9	39	Calm					0			0	0		Blue sky
Bombay	29.84	757.8	29.87	758.8	84.0	28.9	66	WNW	10.0	4.5			0			0	0		Blue sky
Poona	27.89	708.4	29.89	759.2	80.4	26.9	48	SE					0			0	0		Blue sky
Lahore	29.06	738.1	29.51	757.1	76.9	24.9	42	Calm	2.8	1.2			3			0	0		Blue sky
Belgaum	27.37	695.2	29.92	759.8	75.8	24.3	58	Calm					4	NW	W	0	0		D. clouds
Bangalore																			
Roorkee	28.92	734.6	29.82	757.5	77.8	25.4	39	Calm	1.2	0.5			0			0	0		
Agra	29.26	743.1	29.82	757.3	86.7	30.4	34	SW								0	0		
Trichinopoly																			
Nagpur	28.86	733.1	29.91	759.7	79.1	26.2	34	Calm	0.9	0.4			0			0	0		Blue sky
Madras																			
Lucknow	29.47	748.5	29.84	758.0	79.3	26.3	40	WNW	1.6	0.7			0			0	0		Blue sky
Allahabad	29.52	749.9	29.84	757.9	77.4	25.2	47	Calm	1.1	0.5			0			0	0		Blue sky
Patna	29.66	753.4	29.85	758.1	79.7	26.5	39	W	1.1	0.5			0			0	0		Blue sky
Hazaribagh	27.86	707.7	29.91	759.7	69.6	20.9	54	WSW	5.3	2.4			0			0	0		D. clouds
Cuttack	29.81	757.1	29.89	759.2	78.0	25.6	66	ENE	0.5	0.2			4			0	0		Blue sky
Calcutta (Alipore)	29.86	758.6	29.89	759.1	73.7	23.2	78	WNW	1.0	0.4			0			0	0		Blue sky
Goalpara	29.46	748.3	29.86	758.3	75.2	24.0	58	Calm	0.6	0.3			0			0	0		
Chittagong	29.79	756.6	29.88	759.0	76.5	24.7	89	SE	3.5	1.6			0			0	0		D. clouds
Sibsagar	29.55	750.5	29.89	759.2	74.1	23.4	88	ENE	0.5	0.2			5						
Rangoon																			
Jubbulpore	28.51	724.1	29.88	758.9	78.0	25.6	47	NW	2.4	1.1			0			0	0		Blue sky

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

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	22.20	564.0	30.08	764.0	35.4	1.9	53	NW	.....	.....	1	.....	0	.....	.....	0	0	.....	Ab. Dem. Morgini.
Stelvio	22.19	563.7	30.14	765.6	34.0	1.1	.....	ENE	.....	.....	1	.....	3	WSW	.....	0	0	.....	Signora Ernesta Manfredi.
Udine	29.64	752.8	30.06	763.4	58.3	14.6	36	Calm	0	0	.....	.....	0	.....	.....	0	0	.....	Prof. Giovanni Clodig.
Padua	29.95	760.7	30.07	763.6	54.9	12.7	50	E	0.7	0.3	.....	.....	0	.....	.....	0	0	.....	Prof. Dott. Lorenzoni.
Vicenza	29.87	758.7	30.07	763.7	57.2	14.0	46	SE	0	0	.....	.....	0	.....	.....	0	0	.....	Conte Alm. Da Schio.
Verona	29.85	758.1	30.08	763.9	61.7	16.5	58	SSW	0	0	.....	.....	0	.....	.....	0	0	.....	Dott. B. Bertoncelli.
Bergamo	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Trionfini Carlo.
Domodossola	29.04	737.5	30.08	764.1	52.2	11.2	55	S	.....	.....	4	.....	1	.....	.....	0	0	.....	Prof. Giuseppe Calza
Milan	29.57	751.1	30.10	764.6	52.7	11.5	.....	N	.....	.....	.....	.....	0	.....	.....	0	0	.....	Ab. Gio. Capelli.
Pavia	29.74	755.5	30.10	764 5	50.2	10.1	76	S	.....	.....	1	.....	0	.....	.....	0	0	.....	Prof. Gio. Cantoni.
Moncalieri	29.18	741.2	30.11	764.8	51.1	10.6	66	ESE	0	0	.....	.....	0	.....	.....	0	0	.....	Prof. P. F. Denza.
Mondovi	28.16	715.2	30.10	764.4	53.1	11.7	62	Calm	.....	.....	0	.....	0	.....	.....	0	0	.....	Prof. D. C. Bruno.
Porto Maurizio	29.87	758.7	30.09	764.3	61.2	16.2	67	ESE	0.7	0.3	.....	.....	7	.....	.....	0	0	.....	Prof. L. Vassallo.
Genoa	29.89	759.3	30.07	763.6	64.8	18.2	50	SW	2.6	1.1	.....	.....	0	.....	.....	0	0	.....	Prof. G. M. Garibaldi.
Placenza	29.84	757.9	30.10	764.6	53.1	11.7	68	NW	4.3	1.9	.....	.....	2	.....	.....	0	0	.....	Dott. G Manzi.
Parma	29.78	756.5	30.11	764.7	57.2	14.0	59	NW	.....	.....	4	.....	0	.....	.....	0	0	.....	Prof. P. Pigorini.
Florence	29.85	758 2	30.11	764.9	59.9	15.5	58	NW	.....	.....	2	.....	0	.....	.....	0	0	.....	Cav. F Meucci.
Leghorn	30.00	762.0	30.09	764.2	62.6	17.0	62	NNE	1.5	0.8	.....	.....	3	.....	.....	0	0	.....	Prof. P. Monte.
Siena	28.87	733.2	30.09	764.2	60.3	15.7	48	WSW	0	0	.....	.....	0	.....	.....	0	0	.....	Prof. L. Toscani.
Urbino	28.55	725.2	30.13	765 2	53.6	12.0	70	NE	.....	.....	1	.....	0	.....	.....	0	0	.....	Prof. P. Serpieri.
Pesaro	30.05	763.3	30.10	764.6	58.6	12.9	74	N	22.4	10.0	.....	.....	0	.....	.....	0	0	.....	Prof. Luigi Guidi.
Ancona	29.99	761.7	30.10	764.5	56.7	13.7	71	NW	.....	.....	4	.....	0	.....	.....	0	0	.....	Prof. F. DeBosis.
Grosseto	30.00	761.9	30.11	764.8	63.3	17.4	55	SSE	.....	.....	4	.....	2	.....	.....	0	0	.....	Avv. P. Ponticelli.
Rome	29.90	759.5	30.08	764.0	61.3	16.3	41	N	0	0	.....	.....	0	.....	.....	0	0	.....	Prof. P. A Secchi.
Naples, O. U	29.89	759.3	30.10	764.5	64.8	18.2	50	SSW	.....	.....	2	.....	2	W	.....	0	0	.....	Prof. L. Palmieri.
Lecce	.....	.....	.....	.....	61.9	16.6	71	SSE	0.7	0.3	.....	.....	7	.....	.....	0	0	.....	Prof. C. De Giorgi.
Cosenza	29.21	741.9	30.11	764.9	60.3	15.7	70	SE	0	0	.....	.....	5	.....	.....	0	0	.....	Prof. F. D. Conti.
Cagliari	29.84	757.8	30.03	762.7	65.3	18.5	63	W	.....	.....	2	.....	3	W	.....	0	0	.....	Prof. A. Pacinotti.
Riposto, (Sicily)	29.93	760.1	29.977	761.3?	63.1	17.3	72	SE	.....	.....	2	.....	9	NE	.....	0	0	.....	Prof. F. Cafiero.
Palermo	29.76	755.9	30.02	762.4	61.7	16.5	69	NE	5.6	2.5	.....	.....	1	.....	.....	0	0	.....	Prof. G. Cacciatore.
Caltanissetta	28.07	712.9	30.02	762.6	57.7	14.3	54	S	.....	.....	2	.....	8	.....	.....	0	0	.....	Prof. A. Pagani.
Syracuse	29.93	760.1	30.00	762.0	64.2	17.9	59	SE	.....	.....	1	.....	7	SW	.....	0	0	.....	Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.54	750.2	30.09	764.3	61.5	16.4	50	NE	0	0	.....	.....	0	.....	.....	0	0	.....	Prof. F. Brioschi.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals give the wind-force on the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,548.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo, 379.6 m., or 1,245.3 ft.; Mondovi, 553 m., or 1,824.2 ft; Siena, 348.5 m., or 1,149.6 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft.

JAPANESE SERIES.

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

Tokei (Yeddo)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	The Observatory.
Tokei (Yeddo) University	29.74	755.4	29.84	757.9	53	11.7	61	Calm	0	0	.....	.....	10s	.....	.....	0.21	5.3	Cloudy	Prof. P. V. Veeder.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

MEXICAN SERIES.

By authority of the Secretary of Public Works.

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

Aguascallientes	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	I. N. Marin, M. D.
Córdoba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	C. Peña, M. D.
Cuernavaca	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	L. Castillo, A. E.
Guadalajara	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. L. Perez.
Guanajuato	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. V. Fernandez.
Leon	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. M. Leal.
Mexico	23.15	588.0	30.31	769.9	51.8	11.0	84	Calm	0	0	.....	4c	1c	.....	.....	0	0	Fair	Central Observatory.
Orizaba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	N. N.
Orizaba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	I. Orozco, M. D.
Pabellon, (Aguascalts)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. V. de Leon, M. E.
Puebla	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. B. Gonzalez.
Toluca	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. C. Velazquez.
Tlacotalpam	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. F. R. Bayly.
San Luis Potosi	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	G. Barroeta, M. D.
Vera-Cruz	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. J. Rossell.
Zacatecas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. A. Bonilla, M. E.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The elevation of Aguascallientes, is 1,891 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,293 m., or 7,522.9 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft; San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,493 m., or 8,188.6 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

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

Flushing	29.87	758.6	29.87	758.6	54.0	12.2	.....	SW	.....	.....	4	.....	.....	.....	.....	0	0	.....	
Groningen	29.73	755.1	29.78	756.5	52.0	11.1	.....	SW	.....	.....	4	.....	.....	.....	.....	0.016	0.4	.....	
Helder	29.76	755.9	29.76	755.9	53.4	11.9	.....	SW	.....	.....	4	.....	.....	.....	.....	0.035	0.9	.....	
Hellevoetsluis	.....	.....	29.82	757.4	55.0	12.8	89	SW	.....	.....	4	.....	.....	.....	.....	.....	.....	.....	
Utrecht	29.80	756.9	29.85	758.1	55.2	12.9	82	SW	.....	.....	1	.....	5	.....	.....	0	0	Cloudy	H. v d Brink.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

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

NORWEGIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	29.21	741.8	29.26	743.2	45.0	7.2	98	SSE	11.6	5.2	.....	.....	10	.....	.....	0.764	19.4	Raining.....	
Brône	29.13	739.8	29.17	740.8	43.2	6.2	71	SE	20	9	.....	.....	10	"	.....	0	0	.....	
Christiania	29.22	742.2	29.37	745.9	44.1	6.7	90	SSE	9	4	.....	.....	10	.....	.....	0.087	2.2	Light rain...	
Tromsö	29.09	738.9	29.13	740.0	37.4	3.0	79	Calm	0	0	.....	.....	10	.....	.....	0.307	7.8	.....	

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

PORTUGUESE SERIES.

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

Angra, (Azores)	30.10	764.6	30.30	769.5	62.2	16.8	90	WNW	4.3	1.9	.....	.....	3	.....	.....	0	0	.....	Dr. J. A. Sampaio.
Campo Major	29.09	738.8	30.10	764.6	65.7	18.7	57	Calm	0	0	.....	.....	9	.....	.....	0	0	.....	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.06	763.5	30.15	765.7	73.8	23.2	50	SW	3.1	1.4	.....	.....	3	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.77	756.2	30.13	765.2	63.5	17.5	69	N	7.4	3.3	.....	.....	9	NNW	.....	0	0	.....	The Staff.
Ponta Delgada, (Azores)	30.24	768.0	30.31	769.8	70.2	21.2	65	SW	0.7	0.3	.....	.....	6	.....	.....	0	0	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

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

Naval Series. Vessels.	Sea or swell. Height scale 0–9	Sea or swell. Direction from—		
S. S. India.				A. D. Pedroso, Com'd't Lt. S. A. P. de Mirando
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....

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

RUSSIAN SERIES.

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

Warsaw	29.65	753.1	30.08	764.1	44.6	7.0	69	SSE	13	6	.....	.....	0	.....	.....	.....	.....	.....	Astronomical Obs.
Wilna	29.69	754.0	30.11	764.9	43.3	6.2	81	Calm	0	0	.....	.....	10	.....	.....	.....	.....	.....	Astronomical Obs.
Dorpat	29.71	754.7	29.96	761.0	42.1	5.6	91	SSW	7	3	.....	.....	10	.....	.....	.....	.....	.....	Prof. Dr. Weihrauch
St. Petersburg	29.87	758.8	29.89	759.2	41.5	5.3	82	W	4	2	.....	.....	10	.....	.....	.....	.....	.....	Central Physical Obs.
Kuopio	29.40	746.7	29.73	755.1	35.6	2.0	93	SW	18	8	.....	.....	10	.....	.....	Blank	Blank	.....	Ch. Forsten.
Kieff	29.48	748.8	30.13	765.3	44.4	6.9	69	N	4	2	.....	.....	2	.....	.....	.....	.....	.....	Physical Cabinet.
Nikolaiev	30.02	762.6	30.10	764.4	47.1	8.4	87	NE	13	6	.....	.....	10	.....	.....	.....	.....	.....	Kurdakof.
Kertch	29.89	759.3	29.91	759.8	51.1	10.6	93	N	9	4	.....	.....	10	.....	.....	.....	.....	.....	Lagorio.
Moscow	29.52	749.9	30.09	764.2	39.6	4.2	82	S	11	5	.....	.....	4	.....	.....	.....	.....	.....	Meteorological Obs.
Lugan	29.74	755.4	29.95	760.7	45.5	7.5	80	NNE	2	1	.....	.....	10	.....	.....	Blank	Blank	.....	Meteorological Obs.
Archangel	29.78	756.3	29.80	756.8	37.0	2.8	93	S	18	8	.....	.....	10	.....	.....	.....	.....	.....	Ogorodnikof.
Tiflis	28.49	723.7	29.91	759.6	54.9	12.7	94	Calm	0	0	.....	.....	10	.....	.....	.....	.....	Raining.....	Physical Observatory.
Astrakhan	30.08	764.1	30.00	762.0	47.7	8.7	56	ESE	11	5	.....	.....	7	.....	.....	.....	.....	.....	Sebastianof.
Kasan	29.91	759.8	30.20	767.0	32.0	0.0	92	Calm	0	0	.....	.....	10	.....	.....	.....	.....	.....	Physical Cabinet.
Orenburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Tschernischef.
Ekaterinburg	29.19	741.4	30.18	766.6	29.7	— 1.3	86	W	9	4	.....	.....	8	.....	.....	.....	.....	.....	Meteorological Obs.
Nukuss	29.86	758.5	30.10	764.6	42.4	5.8	38	NE	4	2	.....	.....	0	.....	.....	.....	.....	.....	
Kasaly	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Bobrof.
Tashkend	28.51	724.1	30.27	768.9	43.5	6.4	86	Calm	0	0	.....	.....	6	.....	.....	.....	.....	.....	Michelson.
Barnaul	29.86	758.5	30.41	772.5	30.0	— 1.1	56	SW	0	0	.....	.....	0	.....	.....	.....	.....	.....	Meteorological Obs.
Yeniseisk	29.87	758.7	30.21	767.3	30.2	— 1.0	93	SW	2	1	.....	.....	10	.....	.....	.....	.....	Snowing.....	Marks.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Usolzef.
Oorga	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Mossin.
Peking, (China)	30.19	766.9	30.34	770.5	41.9	5.5	38	Calm	0	0	.....	.....	3	.....	.....	.....	.....	.....	Physical Observatory.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nikolaievsk, on the Amoor	.....	.....	.....	.....	3.7	—15.7	76	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Ekaterinburg, 306.4? m., or 1,005.2? ft.; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft.

SPANISH SERIES.

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

Barcelona, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Rave, Director.
Bilbao, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Manuel de Naveran
Burgos, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Domingo Martin y Perez.
Madrid, Royal Observatory	27.84	707.2	30.05	763.2	61.2	16.2	62	NE	2.2	1.00	.....	8	0	N	.....	0	0	.....	The Staff.
Murcia, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Olayo Diaz, Director.
Santiago, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.91	759.8	29.98	761.5	77.8	25.4	83	Calm	0	0	.....	0	1k	.....	.....	0.008	0.2	Clear	Benito Vines, S. J.
San Fernando, Naval Obs'y.	29.98	761.5	30.08	764.0	69.6	20.9	58	WNW	9.4	4.2	.....	1	4	W	W	0	0	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.	.....	.....	29.88	758.9	81.7	27.6	85	SE	2.2	1.00	.....	4cs	2k	SE	SE	0.307	7.80	D. clouds.....	Leonardo de Tejeda, Chief of Engineers.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. m. instead of 8:19 a. m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Low'r 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.50	749.3	29.54	750.3	33.8	1.0	.....	S	.....	.....	4	.....	6	.....	.....	0	0	.....	
Umea	29.41	747.0	29.46	748.3	39.6	4.2	97	SW	.....	.....	4	.....	10	.....	.....	0	0	.....	
Hernosand	29.42	747.2	29.47	748.5	41.7	5.4	87	SW	.....	.....	4	.....	9	.....	.....	0.008	0.2	Raining	
Stockholm	29.47	748.5	29.65	753.0	43.2	6.2	82	SSW	.....	.....	4	.....	10	.....	.....	0	0	.....	
Wisby	29.71	754.5	29.76	756.0	43.9	6.6	83	SW	.....	.....	7	.....	10	.....	.....	0	0	.....	
Sub-Series.																			
Upsala	29.54	750.3	29.61	752.2	42.3	5.7	75	S	15.4	6.9	.....	.....	7	.....	SW	0.150	3.80	.....	Dr. Hildebrandsson.

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

SWISS SERIES.

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

Geneva	28.65	727.8	30.09	764.2	51.3	10.7	78	NNE	.....	.....	1	.....	3	.....	.....	0	0	Cloudy	The Observatory.
Zurich	28.45	722.6	30.09	764.3	53.2	11.8	73	NW	.....	.....	1	.....	2	.....	.....	0	0	Clear	The Observatory.

Note.—For Geneva the corresponding departures from the normal values are: Barometer, +1.6 mm; Thermometer, +1.9 cent.; Relative Humidity, +3 per cent.

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

TURKISH SERIES.

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

Constantinople	.....	.....	30.15	765.8	50.0	10.0	86	NNW	9	4.0	.....	.....	10	.....	NNW	0	0	.....	The Observatory.
Fao, (Persian Gulf)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salonica	.....	.....	30.17	766.2	63.0	17.2	.....	N	.....	.....	1	.....	5	.....	.....	.....	.....	.....	B. Stefanides.
Valona	.....	.....	30.07	763.6	56.1	13.4	.....	SW	.....	.....	1	.....	10	.....	.....	0	0	Covered	A. Bertrand.
Varna	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Imperial Observatory.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.92	760.0	30.04	762.9	72.0	22.2	58	W	.....	.....	2	.....	5ks	.....	W	0.78	19.8	D. clouds	Prof. C. V. A. Van Dyck

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

CANADIAN SERIES.

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

Bathurst, N. B	30.16	766.1	30.22	767.6	31.7	— 0.2	77	SW	3.0	1.3	.....	0	.....	.....	.....	0	0	.....	Hon. J. Ferguson.
Brockville, Ontario	.....	.....	29.97	761.2	41	5.0	.....	Calm	0	0	.....	.....	10s	.....	Calm	0.02	0.5	Cloudy	W. R. Bigg.
*Chatham, N. B	.....	.....	30.26	768.6	28	— 2.2	82	W	5	2.2	.....	0	0	.....	.....	0	0	Clear	G. A. Blair.
Charlottetown, P. E. Island.	.....	.....	30.28	769.1	32	0.0	69	W	8	3.6	.....	0	0	.....	.....	0	0	Clear	H. J. Cundall, C. E.
Cornwall, Ontario	29.74	755.4	29.94	760.5	35.4	1.9	98	NE	.....	.....	1	2cs	6s	.....	.....	0.090	2.29	Clearing	James Smith, M. A.
Dalhousie, N. B	30.22	767.6	30.25	768.3	27.9	— 2.3	76	W	.....	.....	1	.....	.....	.....	.....	0	0	Bright	H. A. Johnson.
Esquimault, B. C	29.47	748.5	29.52	749.8	48.3	9.1	93	SE	.....	.....	.....	.....	10	.....	.....	0.17	4.3	Cloudy	W. H. Bevis.
*Father Point, Quebec	.....	.....	30.21	767.3	28	— 2.2	75	S	5	2.2	.....	Haze	5s	S	Calm	0	0	Threatening	J. McWilliams.
Fredericton, N. B	30.29	769.4	30.35	770.9	27.2	— 2.7	86	Calm	0	0	.....	10cs	0	.....	.....	0	0	Cloudy	Prof. Harrison.
*Fort Garry, Manitoba	.....	.....	30.49	774.4	10	—12.2	92	W	8	3.6	.....	0	2s	.....	W	0	0	Fair	James Stewart.
Goderich, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	H. J. Strang, M. A
Granton, Ontario	28.73	729.7	29.84	757.9	39.1	3.9	99	SW	.....	.....	1	.....	10n	.....	.....	0.12	3.0	Cloudy	James Grant.
*Halifax, N. S	30.19	766.8	30.33	770.4	32	0.0	79	W	8	3.6	.....	0	0	.....	.....	0	0	Clear	F. Allison, M. A.
Hamilton, Ontario	29.54	750.3	29.92	760.0	40.2	4.6	90	.....	.....	.....	.....	0	.....	.....	.....	0.20	5.1	Heavy mist.	Geo. Dickson, M. A
Heart's Content, N. F	29.39	746.5	29.92	760.0	36	2.2	71	NW	.....	.....	5	.....	2ks	.....	NW	0	0	Cloudy	E. Weedon.
*Kingston, Ontario	29.62	752.3	29.96	761.0	41	5.0	70	S	6	2.7	.....	.....	10s	.....	Calm	Inap.	Inap.	Cloudy	S. Woods, M. A.
Little Glace Bay, N. S	30.15	765.8	30.20	767.1	37.5	3.1	87	NW	10	4.5	.....	6k	.....	NW	.....	0	0	Fair	C. H. Rigby.
*Montreal, Quebec	29.79	756.7	30.00	762.0	34	1.1	92	SE	6	2.7	.....	.....	10n	.....	.....	0.17	4.3	Light rain	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.29	744.0	30.02	762.5	28	— 2.2	96	N	11	4.9	.....	.....	10n	.....	N	0.46	11.7	Light snow	Rev. R. Mosley.
Peterboro, Ontario	29.15	740.4	29.92	760.0	34.8	1.6	97	Calm	.....	.....	0	.....	10n	.....	.....	.....	.....	Raining	J. F. Jeffers, B. A.
Port Dover, Ontario	29.20	741.7	29.90	759.4	39	3.9	100	N	3	1.3	.....	.....	10n	.....	SW	Inap.	Inap.	Threatening	H. Morgan.
Port Hastings, N. S	30.21	767.3	30.26	768.6	33.6	0.9	.....	W	6	2.7	.....	.....	.....	.....	.....	0	0	Fine	Peter Grant.
Port Stanley, Ontario	29.24	742.7	29.90	759.4	41	5.0	91	W	2	0.9	.....	.....	10n	.....	W	0.02	0.5	Light rain	M. Payne.
*Quebec, Quebec	29.91	759.7	30.10	764.5	27	— 2.8	100	NE	10	4.5	.....	.....	10n	.....	Calm	0.10	2.5	Light snow	Capt. Ashe, R. N
*Rockliffe, Ontario	29.56	750.8	30.03	762.7	29	— 1.7	95	SW	5	2.2	.....	.....	10n	.....	.....	0.09	2.3	Light snow	W. H. McIntyre.
St. John, N. B	30.19	766.8	30.36	771.1	28	— 2.2	77	Calm	0	0	.....	10k	0	.....	.....	0	0	Cloudy	G. Murdock, C. E.
*Saugeen, Ontario	29.24	742.7	29.96	761.0	32	0.0	93	NE	5	2.2	.....	.....	10s	.....	.....	0.21	5.3	Heavy snow	K. Stewart.
Stayner, Ontario	.....	.....	29.95	760.7	32	0.0	91	Calm	0	0	.....	.....	10n	.....	Calm	†0.44	†11.2	Light snow	R. J. Cole.
Stratford, Ontario	28.57	725.7	29.88	758.9	38.4	3.6	96	SE	5.0	2.2	.....	.....	10n	.....	.....	0.368	9.34	Raining	C. J. MacGregor, M. A.
*Sydney, C. B	30.19	766.8	30.22	767.6	39	3.9	73	W	14	6.3	.....	5k	2ks	NW	W	0	0	Fair	T. C. Hill.
*Toronto, Ontario	29.51	749.5	29.90	759.4	39	3.9	98	N	2	0.9	.....	.....	10n	.....	Calm	0.18	4.6	Light snow	Magnetic Observatory.
Windsor, N S	30.25	768.3	30.35	770.9	32.0	0.0	74	S	5	2.2	.....	1c	0	.....	.....	0	0	Clear	Prof. John E. Oram.
Woodstock, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Montgomery.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	38.0	3.3	72	W	.....	.....	.....	5k	5s	.....	.....	0	0	Fair	John Delany

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns, N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,183 ft. or 360.3 m.
†Amount of precipitation from 4:22 p. m., of the 3d.

UNITED STATES SERIES.

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

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.87	758.7	30.10	764.5	44	6.7	67	SE	12	5.4	.....	.....	10ks	.....	S	0	0	Cloudy	
Alpena, Michigan	29.38	746.2	30.07	763.8	27	— 2.8	100	N	10	4.5	.....	.....	10n	.....	N	0.16	4.1	Light snow.	
Atlantic City, New Jersey	30.21	767.3	30.23	767.8	56	13.3	74	S	16	7.2	.....	10cs	0	SW	.....	0	0	Cloudy	
Augusta, Georgia	29.98	761.5	30.17	766.3	54	12.2	77	Calm	0	0	.....	.....	10s	.....	SW	0	0	Cloudy	
Baltimore, Maryland	30.18	766.6	30.23	767.8	46	7.8	76	S	2	0.9	.....	5ck	5s	SW	SW	0	0	Cloudy	
Barnegat, New Jersey	30.20	767.1	30.23	767.8	54	12.2	73	S	24	10.7	.....	5cs	2s	W	Calm	0	0	Fair	
Bismarck, Dakota	28.59	726.2	30.40	772.1	7	—13.9	77	SE	4	1.8	.....	0	0	.....	.....	Inap.	Inap.	Clear	
Boise City, Idaho	27.26	692.4	29.90	759.4	44	6.7	75	E	8	3.6	.....	.....	10n	.....	Calm	0.02	0.5	Light rain	
Boston, Massachusetts	30.11	764.8	30.27	768.8	41	5.0	66	S	6	2.7	.....	.....	9s; fg	.....	W	0	0	Cloudy	
Brackettville, Texas	28.98	736.1	30.02	762.5	55	12.8	68	N	8	3.6	.....	0	0	.....	.....	0.05	1.3	Clear	
Breckenridge, Minnesota	29.44	747.8	30.56	776.2	8	—13.3	89	NW	6	2.7	.....	0	0	.....	.....	Inap	Inap	Clear	
Brownsville, Texas	29.95	760.7	30.01	762.2	70	21.1	90	Calm	0	0	.....	.....	10s	.....	Calm	0	0	Cloudy	
Buffalo, New York	29.17	740.9	29.87	758.7	49.0	9.4	63	W	3	1.3	.....	.....	10s	.....	W	0	0	Cloudy	
Burlington, Vermont	29.81	757.2	30.08	764.0	43	6.1	49	S	16	7.2	.....	10c	0	W	.....	0	0	Cloudy	
Cairo, Illinois	29.58	751.3	29.97	761.2	53	11.7	93	SW	15	6.7	.....	.....	10n	.....	W	0.21	5.3	Light rain	
Camp Grant, Arizona	25.21	640.3	30.01	762.2	52	11.1	28	NE	.....	.....	1	0	0	.....	.....	0	0	Clear	
Camp Verde, Arizona	26.94	684.3	30.43	772.9	33	0.6	70	NW	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Campo, California	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Cape Hatteras, N. Carolina	30.17	766.3	30.18	766.6	67	19.4	68	SE	23	10.3	.....	8cs	0	SW	.....	0	0	Fair	
Cape Henry, Virginia	30.18	766.6	30.20	767.1	60	15.6	82	SE	5	2.2	.....	.....	10s	.....	SW	0	0	Cloudy	
Cape Lookout, N. Carolina	30.20	767.1	30.21	767.3	70	21.1	75	SE	20	8.9	.....	2ck	5ks	W	S	0.03	0.8	Cloudy	
Cape May, New Jersey	30.19	766.8	30.22	767.6	55	12.8	79	S	22	9.8	.....	5cs	5s	NW	S	0	0	Cloudy	
Charleston, South Carolina	30.09	764.3	30.16	766.1	59	15.0	87	NE	6	2.7	.....	.....	10s	.....	NE	0	0	Cloudy	
Cheyenne, Wyoming	24.14	613.1	30.08	764.0	21	— 6.1	100	SW	8	3.6	.....	0	Fog	.....	SW	Inap	Inap.	Fair	
Chicago, Illinois	29.22	742.2	29.92	760.0	35	1.7	100	N	24	10.7	.....	.....	10n	.....	NW	0.69	17.5	Light snow	
Cincinnati, Ohio	29.25	742.9	29.88	758.9	55	12.8	62	SW	12	5.4	.....	.....	10ks	.....	N	Inap.	Inap.	Threatening	
Cleveland, Ohio	29.18	741.2	29.89	759.2	52	11.1	40	S	20	8.9	.....	.....	10s	.....	S	0	0	Cloudy	
Concho, Texas	28.37	720.6	30.18	766.6	40	4.4	63	N	12	5.4	.....	8c	0	N	.....	0	0	Cloudy	
Corsicana, Texas	29.70	754.4	30.19	766.8	45	7.2	84	N	18	8.0	.....	0	2s	.....	N	0.13	3.3	Fair	
Davenport, Iowa	29.51	749.5	30.19	766.8	28	— 2.2	88	N	17	7.6	.....	.....	10s	.....	N	0.55	14.0	Cloudy	
Denison, Texas	29.43	747.5	30.26	768.6	41	5.0	73	N	12	5.4	.....	.....	10ks	.....	N	Inap.	Inap.	Cloudy	
Denver, Colorado	24.92	633.0	30.14	765.5	30	— 1.1	79	NE	4	1.8	.....	0	5s	.....	Calm	0	0	Fair	
Detroit, Michigan	29.18	741.2	29.85	758.2	40	4.4	100	NE	5	2.2	.....	.....	10n	.....	Calm	0.10	2.5	Light rain	
Dodge City, Kansas	27.74	704.6	30.23	767.8	21	— 6.1	78	N	10	4.5	.....	0	Haze	.....	Calm	0	0	Clear	
Dubuque, Iowa	29.48	748.8	30.23	767.8	25	— 3.9	75	N	10	4.5	.....	.....	10s	.....	.....	0.43	10.9	Cloudy	
Duluth, Minnesota	29.69	754.1	30.43	772.9	18	— 7.8	83	Calm	0	0	.....	Haze	10n	Calm	Calm	Inap.	Inap.	Light snow	
Eagle Pass, Texas	29.36	745.7	30.11	764.8	57	13.9	93	NW	10	4.5	.....	0	0	.....	.....	0.05	1.3	Clear	
Eastport, Maine	30.26	768.6	30.33	770.4	36	2.2	53	SW	4	1.8	.....	.....	10s	.....	W	0	0	Cloudy	
Erie, Pennsylvania	29.15	740.4	29.86	758.4	52	11.1	53	S	14	6.3	.....	.....	10s	.....	SW	0.01	0.3	Cloudy	
Escanaba, Michigan	29.55	750.6	30.25	768.3	23	— 5.0	86	N	24	10.7	.....	.....	10s	.....	N	0	0	Cloudy	
Florence, Arizona	28.44	722.4	30.04	763.0	40	4.4	48	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Fort Bayard, New Mexico	24.16	613.6	30.16	766.1	33	0.6	43	SW	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Fort Craig, New Mexico	25.78	653 5	.....	.....	29	— 1.7	67	W	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Fort Gibson, Indian Ter	29.71	754.6	30.28	769.1	37	2.8	71	N	24	10.7	.....	.....	10s	.....	N	0.04	1.0	Cloudy	
Fort Griffin, Texas	29.04	737.6	30.37	771.4	39	3.9	72	NW	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	29.05	737.9	30.23	767.8	33	0.6	89	N	26	11.6	.....	0	2s	.....	N	0	0	Clear	
Galveston, Texas	29.94	760.5	29.98	761.5	68	20.0	100	E	5	2.2	.....	0	8ks	.....	E	1.78	45.2	Threatening	
Grand Haven, Michigan	29.33	745.0	30.01	762.2	27	— 2.8	100	NE	21	9.4	.....	.....	10n	.....	Calm	0.61	15.5	Light snow	
Indianapolis, Indiana	29.07	738.4	29.84	757.9	49	9.4	85	SW	7	3.1	.....	.....	10s	.....	SW	0.09	2.3	Threatening	
Indianola, Texas	30.01	762.2	30.03	762.7	69	20.6	90	N	18	8.0	.....	0	0	.....	.....	3.80	96.5	Clear	
Jacksboro, Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Jacksonville, Florida	30.08	764.0	30.10	764.5	65	18.3	90	NE	4	1.8	.....	.....	10s	.....	E	0	0	Cloudy	
Keokuk, Iowa	29.48	748.8	30.12	765.0	32	0.0	79	N	20	8.9	.....	.....	10s	.....	Calm	0.56	14.2	Cloudy	
Key West, Florida	29.98	761.5	30.01	762.2	78.5	25.8	80	E	8	3.6	.....	1k	2ks	E	E	0.01	0.3	Fair	
Kittyhawk, North Carolina	30.20	767.1	30.23	767.8	64	17.8	83	SE	22	9.8	.....	2cs	5ks	SE	SE	0	0	Fair	
Knoxville, Tennessee	29.08	738.6	30.10	764.5	46	7.8	85	Calm	0	0	.....	.....	10ks	.....	SW	0.11	2.8	Cloudy	
La Crosse, Wisconsin	29.54	750.3	30.33	770.4	21	— 6.1	71	N	6	2.7	.....	0	0	.....	.....	0.53	13.5	Clear	
La Mesilla, New Mexico	26.26	667.0	30.41	772.4	38	0.6	51	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Laredo, Texas	.....	.....	.....	.....	62	16.7	100	N	9	4.0	.....	.....	10n	.....	Calm	0.31	7.9	Light rain	
Leavenworth, Kansas	29.44	747.8	30.34	770.6	26	— 3.3	76	N	20	8.9	.....	2ks	0	N	.....	0.41	10.4	Clear	
Los Angeles, California	29.74	755.4	30.08	764.0	54	12.2	38	NE	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Louisville, Kentucky	29.37	746.0	29.92	760.0	55	12.8	79	SW	6	2.7	.....	.....	10n	.....	SW	0.12	3.0	Light rain	
Lynchburg, Virginia	29.51	749.5	30.20	767.1	47	8.3	62	Calm	0	0	.....	2c	8s	SW	Calm	0	0	Cloudy	
Maricopa Wells, Arizona	.....	.....	.....	.....	30	— 1.1	28	N	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Marquette, Michigan	29.48	748.8	30.23	767.8	25	— 3.9	75	N	12	5.4	.....	.....	10s	.....	Calm	0.04	1.0	Threatening	
Mason, Texas	28.56	725.4	30.38	771.6	43	6.1	83	NW	16	7.2	.....	0	0	.....	.....	0	0	Clear	
Memphis, Tennessee	29.70	754.4	30.02	762.5	55	12.8	93	SW	6	2.7	.....	.....	10n	.....	SW	0.44	11.2	Light rain	
Milwaukee, Wisconsin	29.40	746.7	30.12	765.0	26	— 3.3	100	N	23	10.3	.....	.....	10n	.....	.....	0.90	22.9	Light snow	
Mobile, Alabama	30.04	763.0	30.08	764.0	62	16.7	91	E	5	2.2	.....	.....	10n	.....	Calm	0.04	1.0	Light rain	
Montgomery, Alabama	29.90	759.4	30.14	765.5	56	13.3	90	SE	4	1.8	.....	.....	10n	.....	SE	0.42	10.7	Light rain	
Morgantown, West Virginia	28.95	735.3	30.00	762.0	49	9.4	63	S	4	1.8	.....	.....	10s	.....	SW	0	0	Cloudy	
Mt. Washington, N. H.	23.69	601.7	30.05	763.3	22	— 5.6	100	W	96	42.9	.....	8ks	Fog	W	W	0	0	Cloudy	
Nashville, Tennessee	29.47	748.5	30.01	762.2	52	11.1	93	S	4	1.8	.....	.....	10n	.....	S	0.09	2.3	Light rain	
New Haven, Connecticut	30.12	765.0	30.24	768.1	42	5.6	75	Calm	0	0	.....	.....	10s; fg	.....	S	0	0	Cloudy	
New London, Connecticut	30.23	767.8	30.28	769.1	40	4.4	82	Calm	0	0	.....	8cs	Fog	W	Calm	0	0	Fair	
New Orleans, Louisiana	29.98	761.5	30.04	763.0	64	17.8	94	NE	4	1.8	.....	.....	10n	.....	Calm	0.05	1.3	Light rain	
Newport, Rhode Island	30.23	767.8	30.28	769 1	51	10.6	65	S	12	5.4	.....	.....	10s	.....	SW	0	0	Cloudy	
New York, New York	30.06	763.5	30.24	768.1	47	8.3	62	SW	12	5.4	.....	.....	10s	.....	Calm	0	0	Cloudy	
Norfolk, Virginia	30.18	766.6	30.24	768.1	52	11.1	93	SE	1	0.4	.....	8ck	Fog	SE	Calm	0	0	Cloudy	
North Platte, Nebraska	27.43	696.7	30.23	767.8	19	— 7.2	85	NE	8	3.6	.....	.....	10s	.....	Calm	0.01	0.3	Cloudy	
Olympia, Washington Ter.	29.53	750.0	29.57	751.1	46	7.8	92	S	1	0.4	.....	.....	10n	.....	Calm	0.86	21.8	Heavy rain	
Omaha, Nebraska	29.26	743.2	30.45	773.4	16	— 8.9	92	NW	9	4.0	.....	0	0	.....	.....	0.06	1.5	Clear	
Oswego, New York	29.64	752.8	29.96	761.0	49	9.4	50	SE	6	2.7	.....	.....	10s	.....	Calm	0.02	0.5	Cloudy	
Pembina, Dakota	29.64	752.8	30.55	776.0	10	—12.2	79	NW	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Philadelphia, Pennsylvania	30.20	767.1	30.25	768.3	45	7.2	76	SW	7	3.1	.....	2cs	8cs; fg	Calm	SW; W	0	0	Cloudy	
Phœnix, Arizona	.....	.....	.....	.....	42	5.6	34	NE	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Pike's Peak, Colorado	17.66	448.6	29.80	758.4	— 1	—18.3	37	N	30	13.4	.....	8cs	0	Calm	.....	0.04	1.0	Cloudy	
Pioche, Nevada	24.18	614.2	29.95	760.7	34	1.1	71	SW	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Pittsburg, Pennsylvania	29.15	740.4	29.95	760.7	52	11.1	53	SW	10	4.5	.....	.....	10s	.....	SW	0	0	Cloudy	
Port Huron, Michigan	29.18	741.2	29.84	757.9	40	4.4	91	N	12	5.4	.....	.....	10n	.....	N	0.26	6.6	Heavy rain	
Portland, Maine	30.19	766.8	30.24	768.1	48	8.9	63	S	11	4.9	.....	10k	Haze	W	.....	0	0	Cloudy	
Portland, Oregon	29.70	754.4	29.79	756.7	48	8.9	92	Calm	0	0	.....	.....	10n	.....	Calm	0.92	23.4	Light rain	
Prescott, Arizona	24.91	632.7	30.27	768.8	25	— 3.9	76	NW	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Punta Rassa, Florida	30.04	763.0	30.06	763.5	73	22.8	90	NE	8	3.6	.....	.....	Fog	.....	Calm	0	0	Foggy	
Red Bluff, California	29.77	756.1	30.13	765.3	52	11.1	93	S	10	4.5	.....	.....	10n	.....	Calm	0.19	4.8	Light rain	
Rochester, New York	29.28	743.7	29.90	759.4	47	8.3	55	SW	9	4.0	.....	.....	10s	.....	Calm	0	0	Cloudy	
Roseburg, Oregon	29.26	743.2	29.82	757.4	55.5	13.1	77	S	2	0.9	.....	.....	10s	.....	Calm	0.38	9.7	Cloudy	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	BAROMETER. Corrected for instrum'tal error and temperature. Inches.	BAROMETER. Corrected for instrum'tal error and temperature. Millimeters	BAROMETER. Reduced to sea-level. Inches.	BAROMETER. Reduced to sea-level. Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Upper. From—	CLOUDS. Direction. Lower. From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	WEATHER.	OBSERVER.
Sacramento, California	30.10	764.5	30.18	766.6	54	12.2	90	SE	4	1.8	.....	.....	10n	.....	Calm	0.03	0.8	Light rain	
St. Louis, Missouri	29.42	747.3	30.00	762.0	40	4.4	91	NW	24	10.7	.....	.....	10n	.....	Calm	0.16	4.1	Light rain	
St. Marks, Florida	30.06	763.5	30.08	764.0	61	16.1	88	E	5	2.2	.....	8k	0	W	.....	0	0	Fair	
St. Paul, Minnesota	29.49	749.0	30.39	771.9	17	--8.3	83	NW	4	1.8	.....	0	Sm'e	.....	Calm	0	0	Clear	
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salt Lake City, Utah	25.81	655.6	30.14	765.5	40	4.4	65	SE	4	1.8	.....	.....	10s	.....	Calm	0	0	Cloudy	
San Antonio, Texas	29.37	746.0	29.96	761.0	58	14.4	82	N	14	6.3	.....	0	0	.....	.....	0.25	6.3	Clear	
San Diego, California	30.02	762.5	30.09	764.3	55	12.8	44	NE	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Sandusky, Ohio	29.20	741.7	29.87	758.7	50	10.0	78	NW	3	1.3	.....	.....	10s	.....	S	0	0	Cloudy	
Sandy Hook, New Jersey	30.22	767.6	30.24	768.1	48	8.9	70	S	6	2.7	.....	10ck	0	W	.....	0	0	Cloudy	
San Francisco, California	30.10	764.5	30.17	766.3	56	13.3	93	SE	4	1.8	.....	.....	10s	.....	Calm	0.30	7.6	Cloudy	
Santa Fé, New Mexico	23.39	594.1	29.93	760.2	26.5	—3.1	72	N	6	2.7	.....	Haze	0	.....	.....	0	0	Clear	
Savannah, Georgia	30.05	763.3	30.14	765.5	59	15.0	87	NE	5	2.2	.....	8ck	2s	W	SE	0	0	Cloudy	
Shreveport, Louisiana	29.86	758.4	30.08	764.0	58	14.4	100	Calm	0	0	.....	.....	10s	.....	S	0.19	4.8	Cloudy	
Smithville, North Carolina	30.17	766.3	30.21	767.3	53	11.7	93	N	6	2.7	.....	2cs	5cs	W	SW	0	0	Cloudy	
Springfield, Massachusetts	30.03	762.7	30.17	766.3	36	2.2	80	Calm	0	0	.....	.....	10s	.....	S	0	0	Cloudy	
Stanwix, Arizona	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Stockton, Texas	27.21	691.1	30.21	767.3	39	3.9	63	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Thatcher's Island, Mass	30.21	767.3	30.26	768.6	49	9.4	63	S	20	8.9	.....	10cs	0	S	.....	0	0	Cloudy	
Toledo, Ohio	29.18	741.2	29.85	758.2	47	8.3	100	S	12	5.4	.....	.....	10n	.....	S	0.24	6.1	Heavy rain	
Tucson, Arizona	27.73	704.3	30.28	769.1	34	1.1	45	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Tybee Island, Georgia	30.10	764.5	30.13	765.3	63	17.2	94	NE	12	5.4	.....	.....	10ks	.....	SW	0	0	Threatening	
Umatilla, Oregon	29.56	750.6	.....	.....	45	7.2	84	SE	8	3.6	.....	.....	10s	.....	S	0.14	3.6	Cloudy	
Vicksburg, Mississippi	29.82	757.4	30.08	764.0	60	15.6	88	NW	4	1.8	.....	.....	10n	.....	N	1.50	38.1	Light rain	
Virginia City, Montana	24.32	617.7	29.80	756.9	23	—5.0	73	SE	10	4.5	.....	.....	10s	.....	Calm	0.01	0.3	Cloudy	
Visalia, California	29.81	757.2	30.19	766.8	47	8.3	77	SE	2	0.9	.....	Haze	0	Calm	.....	0	0	Clear	
Washington, D. C	30.11	764.8	30.22	767.6	45	7.2	80	S	8	3.6	.....	2cs	8s	W	SW	0	0	Cloudy	
Wickenburg, Arizona	.....	.....	.....	.....	29	—1.7	45	S	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Wilmington, N. Carolina	30.11	764.8	30.19	766.8	51	10.6	72	NE	3	1.3	.....	5c	0	W	.....	0	0	Fair	
Winnemucca, Nevada	25.74	653.8	30.10	764.5	39	3.9	91	SW	6	2.7	.....	0	5s	.....	Calm	0.15	3.8	Fair	
Wood's Holl, Mass	30.17	766.3	30.22	767.6	51	10.6	65	SW	19	8.5	.....	.....	10s	.....	SW	0	0	Cloudy	
Yankton, Dakota	29.17	740.9	30.02	777.7	10	—12.2	79	NW	14	6.3	.....	0	0	.....	.....	0.01	0.3	Clear	
Yuma, Arizona	29.98	761.5	30.15	765.8	50	10.0	32	N	1	0.4	.....	.....	.....	.....	.....	0	0	Clear	
SUB-SERIES.																			
York Factory, B. A	30.05	763.3	30.11	764.8	—2.1	—18.9	84	SW	2	0.9	.....	.....	9s	.....	.....	0.06	1.5	Snowing	J. Fortescue, W. Wood
Havana, Cuba, W. I	29.91	759.7	29.93	760.2	79	26.1	82	SE	1.2	0.5	.....	0	2ks	.....	SE	Inap.	Inap.	Fair	Chas. Hasselbrink.
Kingston, Jamaica, W. I	30.05	763.3	30.06	763.5	77	25.0	86	Calm	0	0	.....	2c	2s	SE	SE	0	0	.....	James Gall.
Navassa, W. I	29.77	756.1	29.85	758.2	82	27.8	.....	E	10	4.5	.....	.....	.....	.....	.....	0	0	Cloudy	F. M Everett.
St. Thomas, W. I	.....	.....	.....	.....	82	27.8	83	NE	17	7.6	.....	2c	10k	E	.....	0.95	24.1	.....	G. O. Gellich.
Paramaribo, D. Guiana, S. A	.....	.....	29.96	761.0	83	28.3	79	E	.....	.....	2	4k	7ks	E	.....	0	0	Fair	C. J. Hering.
Batavia, Dutch Guiana, S. A	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Dr. H. Groot.
Medellin, Colombia, S. A	25.16	639.0	.....	.....	65.0	18.3	87	Calm	.....	.....	0	.....	10s;ks	.....	.....	1.39	35.3	Cloudy	Thomas Herran.
Honolulu, Oahu, H. I	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Daniel Smith.
Makawao, Maui, H. I	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters: Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Ploche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Ploche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

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

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

STATIONS AND VESSELS.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard Mare Island, Cal.	30.17	766.3	50	10.0	54	12.2	100	SE	1	0.4	.....	.....	10	.....	Calm	0.135	3.43	.....	.....	Raining.....	
Navy Yard, Pensacola, Fla.	30.15	765.8	.....	.....	66	18.9	89	NE	12	5.4	.....	.....	10	.....	SSE	0.65	16.5	.....	.....	Raining.....	
Navy Yard, Portsmouth, N.H	30.22	767.6	64	17.8	43	6.1	67	SSW	4	1.8	.....	.....	10	.....	.....	0	0	.....	.....	Threatening	
Naval Hospital, Yokohama, Japan.....	29.66	753.4	59	15.0	55	12.8	54	ENE	.....	.....	3	.....	8ks	.....	WNW	0.25	6.3	.....	.....	Cloudy.....	
Adams. S. 40° 56′ 23″. W. 60° 2′ 45″...	30.33	770.4	52	11.1	52	11.1	66	S	.....	.....	1	.....	4	.....	S	0	0	Long	S	D. clouds.....	
Alert. N. 34° E. 136°.....	29.89†	759.2†	59	15.0	59	15.0	76	NNE	.....	.....	6	.....	4	.....	NE	.....	.....	Moderate.	NE	Squally.....	
Alliance, Constantinople, Turkey.	30.24	768.1	67	19.4	53	11 7	80	NNE	.....	.....	2	.....	10	.....	NNE	.....	.....	.....	.....	Overcast.....	
Ashuelot. Tientsin, China.....	30.35	770.9	50	10.0	38	3.3	41	Calm	.....	.....	0	.....	2	.....	Calm	.....	.....	Smooth	.....	D. clouds.....	
Canonicus, New Orleans, La.....	30.05	763.3	50	10.0	65	18.3	94	N	.....	.....	1	.....	10	.....	.....	.....	.....	.....	.....	Rainy.....	
Colorado, New York, N. Y.....	30.34	770.6	73	22.8	48	8.9	78	S	6	2.7	.....	.....	9	.....	WSW	0.01	0.3	.....	.....	Dense fog....	
Despatch, Constantinople, Turkey.	30.25	768.3	75	23.9	52	11.1	86	NW	.....	.	2	.....	10	.....	N	.....	.....	.....	.....	Threatening	
Essex. Cape Palmas, Guinea...	29.83	757.7	83	28.3	82	27.8	??	S	.....	.....	2	.....	7	.....	.....	.....	.....	Long	SW	D. clouds.....	
Franklin, Norfolk, Va.....	30.30	769.6	50	10.0	53	11.7	86	SSE	24	1.1	.....	.....	9	.....	SSE	0.1	3.	.....	.....	Cloudy.....	
Gettysburg, Syracuse, Sicily.....	29.94‡	760 5‡	.....	.....	77	25.0	100	N	.....	.....	0–1	.....	6	.....	Calm	Blank	Blank	Light	SE	D. clouds,...	
Guard, N. 38° 20′, W. 63° 58′.....	30.50	774.7	59	15.0	59	15.0	76	NE	.....	... .	1	.....	4	.....	NE	.....	.....	Smooth	.....	D. clouds.....	
Marion, Smyrna, Turkey.....	30.32	770.1	62	16.7	60	15.6	60	NE	.....	.....	4	.....	4	.....	NE	0	0	Smooth	NE	D. clouds. ...	
Michigan, Erie, Pa.....	29.37	746.0	55	12.8	54	12.2	44	SW	.....	.....	5	.....	10	.....	SW	.....	.....	.....	.....	Raining	
Monocacy, Yokohama, Japan.....	29.65	753.1	57	13.9	54	12.2	80	NNE	.....	.....	3–5	.....	10	.....	.....	.....	.....	.....	.....	Misty.....	
Monongahela, Gibraltar, Spain.....	30.13	765.3	67	19.4	67	19.4	74	SW	.....	.....	1	.....	8	.....	.....	.....	.....	Smooth	.....	D. clouds.....	
New Hampshire, Port Royal, S.C.....	30.30	769.6	.....	.....	61	16.1	88	NE	12	5.4	.....	.....	7	.....	NW	0	0	.....	.....	D. clouds.....	
Omaha. Callao Bay, Peru.....	30.03	762.7	71.5	21.9	69	20.6	90	ESE	8	3.8	.....	.....	10	.....	ESE	0	0	Smooth	.....	Dull	
Onward, Callao, Peru.....	30.02	762.5	70	21.1	69	20.6	82	SE	.....	.....	2	.....	10	.....	.....	.....	.....	Long	W	Hazy.....	
Ossipee, Hampton Roads, Va.....	30.30	769.6	67	19.4	59	15.0	82	SE	.....	.....	3	.....	9	.....	SE	.....	.....	.....	.....	D. clouds.....	
Palos, Shanghai, China.....	30.30	769.6	58	14.4	52	11.1	79	NNW	.....	.....	1–2	.....	10	.....	Calm	.....	.....	.....	.....	Overcast.....	
Pensacola, Mare Island, Cal.....	30.26	768.6	.....	.....	57	13.9	87	Calm	.....	.....	0	.....	10	.....	.....	0.135	3.43	.....	.....	Overcast.....	
Plymouth. Norfolk, Va.....	30.10	764.5	64	17.8	55	12.8	93	SSE	.....	.....	2	.....	9	.....	.....	.....	.....	.....	.....	Misty.....	
Ranger, Shanghai, China.....	30.40	772.1	.....	.....	55	12.8	87	N	.....	.....	2	.....	10	.....	Calm	.....	.....	.....	.....	Rainy.....	
Rio Bravo, Brownsville, Texas.....	29.87	758.7	.....	.....	71	21.7	95	NNW	.....	.....	2	.....	10	.....	NNW	.....	.....	.....	.....	Misty.....	
Santee, Annapolis, Md.....	30.25	768.3	56	13.3	51	10.6	72	SW	.....	.....	1	.....	10	.....	N	.....	.....	.....	.....	Overcast.....	
Saratoga, Hampton Roads, Va.....	30.58†	776.7†	.....	.....	60	15.6	100	SE	.....	.....	3	.....	9	.....	W	0	0	.....	.....	Cloudy	
St. Louis, League Island, Pa	30.12	765.0	44	6.7	44	6.7	84	WSW	1	0.4	.....	.....	7	.....	SW	0	0	.....	.....	Cloudy.....	
Swatara, Hampton Roads, Va.....	30.22	767.6	.....	.....	60	15.6	82	SSE	.....	.....	2	.....	9	.....	S&E	.....	.....	.....	.....	D. clouds.....	
Tennessee, Yokohama, Japan.....	29.79	756.7	65	18.3	55	12.8	62	NNE	3	1.3	.....	.....	10	.....	NNE	0.5	13.	None	.....	Overcast.....	
Trenton, Villefranche, France.....	30.14	765.5	68	20.0	65	18.3	73	E	4	1.8	.....	.....	7	.....	E	0	0	.....	.....	D. clouds.....	
Vandalia, Villefranche, France,...	30.11	764.8	65	18.3	64	17.8	78	ESE	.....	.....	1	.....	3	.....	ESE	.....	.....	.....	.....	D. clouds.....	
Wabash, Boston, Mass.....	30.25	768.3	53	11.7	45	7.2	68	SSW	4	1.8	.....	.....	10	.....	Calm	0	0	.....	.....	D. clouds.....	
Wyoming, Washington, D. C.....	30.42†	772.7†	.....	.....	50	10.0	.....	SW	.....	.....	3	.....	10	.....	N	.....	.....	.....	.....	Squally.....	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. ‡ Barometer corrected for instrumental error and reduced to sea-level.

UNITED STATES MARINE SERIES.

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

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Character.	Direction from—		
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama, N. 20° 58′ 10″, W. 107° 52′ 13″			29.73	755.1	83	28.3	79	NE			3		7		NNE	Light	NNW	Fine	Capt. Howard.
S. S. City of Peking, N. 35° 28′, E. 141° 52′			29.79*	756.7*	56	13.3	100	NNW			6		10		NNW	Rough	NNW	Raining	Lt. Z. L. Tanner, U.S.N.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio, N. 35° 10′, W. 130° 24′			30.14	765.5	60	15.6		SW			7		7		WSW	Chop	NW; W	Overcast	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

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

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

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.																			
S. S. Belgic, N. 30° 42′, E. 176° 19′			30.22†	767.6†				N			4		Light		WNW	Moderate	N	Fine	Capt. John Metcalf.
S. S. Gaelic																			Capt. W. H. Ridley.
S. S. Oceanic																			Capt. H. Parsell.

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

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.																			
Furnished by the coöperation of A. Schumacher & Co., Agents.																			
S. S. Baltimore																			Capt. H. Andressen
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig																			Capt. K. Undütsch.
S. S. Nürnberg, N. 39° 51′, W. 66° 46′			30.38	771.6	60.0	15.6	65	NW			6		k		NNW	Rough	NW	D. clouds	Capt. A. Jaeger.
S. S. Ohio, N. 49° 38′, W. 9° 41′			29.87	758.7	57.0	13.9	87	SW			4		10			High	WSW	Overcast	Capt. G. Meyer.

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

UNITED STATES MARINE SERIES.—Continued.

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

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Lo'wr	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second	0—10.	0—10.	0—10.	From—	From—	Character	Direction From—		
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, Philadelphia, Pa			30.19*	766.8*	58	14.4	88	WNW			3		4		WNW				Captain Sargent.
S. S. Ohio. N. 45° 47′, W. 50° 58′			30.07	763.8	43	6.1	83	W			7		1		W	High	W	Fair	Captain Morrison.
S. S. Pennsylvania, N. 49° 26′, W. 30° 34′			29.64†	752.8†	52	11.1	93	WSW			6		7?		W	Large	WSW	Clear?	Captain Harris.

NOTE.—The originals give the barometer as read off; the wind-force by the scale 0 to 12. *Aneroid; correction for elevation applied, instrumental error not known.
†Corrected for temperature and elevation, instrumental error not known.

RED STAR LINE MARINE SERIES.

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

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

ALLAN LINE MARINE SERIES.

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

S. S. Hibernian																			
S. S. Scandinavian																			Capt. W. Richardson.

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, Provincetown, Mass.			30.31	769.9	54	12.2	67	SSE	12	5.4			10k		W			Cloudy	Capt. James Jorgensen.

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

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

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

Albert J. Myer

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

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON NOVEMBER 6, 1877.

7:35 A. M. WASHINGTON mean time.

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

ALGERIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours	.....	.....	30.06	763.5	69.4	20.8	68	N	.....	.....	2	.....	1	.....	.....	0	0	Very fair	Michel.
Algiers	.....	.....	30.04	763.0	68.7	20.4	80	NE	.....	.....	1	.....	2	.....	.....	0	0	Fair	Peter.
La Calle	.....	.....	30.15	765.7	65.8	18.8	61	ENE	.....	.....	3	.....	2	.....	.....	0	0	Fair	Fleury.
Tunis	.....	.....	30.19	766.7	67.6	19.8	58	NE	.....	.....	2	.....	4	.....	.....	0	0	Cloudy	Jacques.
Sfax	.....	.....	30.18	766.6	69.8	21.0	.....	NW	.....	.....	1	.....	2	.....	.....	0	0	Fair	Husson.
Saida	.....	.....	30.14	765.6	69.1	20.6	45	SSW	.....	.....	1	.....	2	.....	.....	0	0	Fair	Millot.
Tebessa	.....	.....	30.13	765.3	.....	.....	.....	Calm	.....	.....	0	.....	0	.....	.....	.....	.....	Clear	Bourgeois.
Geriville	.....	.....	30.09	764.2	58.8	14.9	61	SE	.....	.....	4	.....	6	.....	.....	0	0	Cloudy	Lemaillot.
Laghouat	.....	.....	30.13	765.3	68.0	20.0	40	Calm	.....	.....	0	.....	2	.....	.....	0.039	1.0	Fair	Guyot.
Biskra	.....	.....	30.18	766.5	71.6	22.0	27	SE	.....	.....	1	.....	3	.....	.....	0	0	Fair	Kuntz.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

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

AUSTRIAN SERIES.

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

Agram	29.08	753.8	30.24	768.0	51.3	10.7	60	NE	.....	.....	2	.....	0	.....	.....	0	0	.....	Prof. Ivan Stozir
Cracow, I. R. Observatory	29.40	746.7	30.17	766.3	55.8	13.2	55	WSW	.....	.....	2	.....	0	.....	.....	0	0	.....	Dr. Wierzbiski.
Eperies	29.34	745.3	30.24	768.2	45.7	7.6	72	S	.....	.....	1	.....	0	.....	.....	0	0	.....	Julius Mikolik.
Gratz	28.95	735.2	30.22	767.6	48.2	9.0	69	S	.....	.....	1	.....	0	.....	.....	0	0	.....	Andreas Rospini.
Hermannstadt	28.80	731.4	30.24	768.1	46.7	8.3	47	N	.....	.....	1	.....	0	.....	.....	0	0	.....	Prof. Reissenberger.
Kremsmünster	28.76	730.6	30.13	765.3	46.0	7.8	81	NE	.....	.....	1	.....	0	.....	.....	0	0	.....	Prof. C. Wagner.
Lemberg	29.17	740.9	30.17	766.4	48.2	9.0	77	W	.....	.....	1	.....	0	.....	.....	0	0	.....	Dr. T. Stanecki.
Pola	30.09	764.2	30.20	767.1	58.1	14.5	60	WSW	.....	.....	1	.....	0	.....	.....	0	0	Foggy	I.R.Hydrographic Office.
Szathmar	29.80	756.9	30.28	769.0	47.1	8.4	70	SE	.....	.....	2	.....	0	.....	.....	0	0	.....	Johann Tamas, S. J.
Szegedin	29.03	760.2	30.22	767.5	50.0	10.0	64	Calm	.....	.....	0	.....	0	.....	.....	0	0	.....	Karl Stancel.
Trieste	30.12	765.1	30.23	767.7	55.8	13.2	93	SW	.....	.....	1	.....	0	.....	.....	0	0	Clear	P. Busin.
Vienna	29.49	749.0	30.20	767.0	50.2	10.1	69	S	.....	.....	1	.....	0	.....	.....	0	0	.....	I. R. Central Met. Obs'y.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

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

BELGIAN SERIES.

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

Arlon	28.53	724.6	30.05	763.3	48.0	9.4	83	S	.....	.....	4	.....	0	.....	.....	0	0	.....	Prof. M. Passau.
Brussels	29.69	754.0	29.89	759.1	52.3	11.3	82	SSW	.....	.....	6	.....	10	.....	SSW	0.098	2.50	.....	Royal Observatory.
Furnes	29.80	757.0	29.83	757.6	52.7	11.5	94	SSW	.....	.....	6	.....	10	.....	.....	0.039	1.0	Raining	M. E. de Cae.
Maeseyck	29.78	756.5	29.91	759.8	53.4	11.9	86	SSW	.....	.....	6	.....	10	.....	.....	0.047	1.2	.....	M. Pierrot.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

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

BRITISH SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Aberdeen	29.22	742.2	29.32	744.7	51.0	10.6	.....	SW	17	7.6	.....	.....	4	.....	.....	0.065	1.65	Blue sky	W. Boswell.
Ardrossan	29.36	745.7	29.37	746.0	53	11.7	.....	SW	.....	.....	3	.....	8	.....	.....	.....	.....	Overcast	William McNeil.
Armagh, Observatory	.....	.....	29.44	747.8	51.0	10.6	.....	SSW	11	4.9	.....	.....	.....	.....	.....	.....	.....	.....	S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)	.....	.....	29.49	749.0	55.9	13.3	.....	S	10	4.5	.....	.....	10	.....	.....	.....	.....	Raining	John Hartnup.
Birr Castle, (Parsonstown)	.....	.....	29.43	747.6	53.7	12.1	.....	S	.....	.....	1	.....	10	.....	.....	.....	.....	Overcast	J. Dreyer.
Bradford, Yorkshire	29.15	740.4	29.55	750.6	55.9	13.3	.....	SW	.....	.....	1	.....	10	.....	.....	0.06	1.5	Overcast	J. McLandsborough.
Bridgetown, (Barbados)	29.88	758.9	29.91	759.7	82.0	27.8	.....	NE	.....	.....	2	.....	2	.....	.....	.....	.....	D. clouds	Pvt. G. W. Roberts, A.
Cambridge, Observatory	.....	.....	29.64	752.8	58.9	14.9	.....	SW	.....	.....	2	.....	10	.....	.....	Blank	Blank	Overcast	H. Todd. [H. C.
Cardington	.....	.....	29.65	753.1	59.0	15.0	.....	SW	.....	.....	2	.....	10	.....	.....	.....	.....	Overcast	John McLaren.
Chatham, School M. E	29.57	751.1	29.70	754.4	53.2	11.8	.....	SW	.....	.....	2	.....	10	.....	.....	.....	.....	Drizzling	Lt. Col. C. M. Martin, R. E.
Dartmoor	28.23	717.0	29.69	754.1	52.5	11.4	.....	SW	.....	.....	6	.....	10	.....	.....	.....	.....	Rain & fog	Alexander Watt.
Davos Platz (Switzerland)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Francis Redford, M. A.
Donaghadee	29.37	746.0	29.40	746.7	51	10.6	.....	WSW	.....	.....	3	.....	10	.....	.....	.....	.....	Overcast	J. Mac Gowan.
Dover	29.73	755.1	29.75	755.6	56	13.3	.....	SW	.....	.....	6	.....	9	.....	.....	.....	.....	Drizzling	J. Costello.
Eccles, (near Manchester)	.....	.....	29.50	749.3	55.4	13.0	.....	SW	3.4	1.5	.....	.....	10	.....	.....	.....	.....	Raining	Thomas Mackereth.
Falmouth, Observatory	29.47	748.5	29.70	754.4	56.1	13.4	.....	SSW	.....	.....	5	.....	10	.....	.....	.....	.....	Drizzling	The Staff.
Fort Napier, (Natal)	27.49	698.2	29.68	753.9	80.6	27.0	.....	NE	.....	.....	1	.....	10n	.....	.....	.....	.....	Overcast	Pvt. G. Salmon, A. H. C.
Free Town, (Sierra Leone)	.....	.....	29.89	759.2	86	30.0	.....	Calm	.....	.....	0	.....	5	.....	.....	.....	.....	D. clouds	.....
Galway, Queen's College	.....	.....	.....	.....	53	11.7	.....	SW	.....	.....	4	.....	4	.....	.....	.....	.....	D. clouds	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	29.95	760.7	30.00	762.0	66.2	19.0	.....	E	.....	.....	4	.....	4	.....	.....	.....	.....	D. clouds	Corpl. C. Aitken, A. H. C.
Glasgow, Observatory	29.16	740.7	29.37	746.0	50.9	10.5	.....	SSW	.....	.....	3	.....	10	.....	.....	.....	.....	Gloomy	D. G. Maclean.
Great Yarmouth	29.65	753.1	29.65	753.1	55	12.8	.....	SW	.....	.....	4	.....	8	.....	.....	.....	.....	Gloomy	G. T. Watson.
Greenwich, Royal Obs'y	29.52	749.8	29.69	754.1	57.3	14.1	.....	SW	.....	.....	4	.....	10	.....	.....	.....	.....	Raining	The Staff, for G. B. Airy.
Guernsey	29.59	751.6	29.80	756.9	58	14.4	.....	SSW	.....	.....	5	.....	10	.....	.....	.....	.....	Raining	Dr. S. E. Hoskins, F. R. S.
Helston	.....	.....	29.78	756.4	57	13.9	.....	SW	.....	.....	4	.....	10n	.....	.....	0.13	3.3	Raining	M. P. Moyle.
Holyhead	29.40	746.7	29.45	748.0	53	11.7	.....	SSW	.....	.....	3	.....	10	.....	.....	.....	.....	Misty	John Tilston.
Jersey	29.58	751.3	29.87	758.7	58.0	14.4	.....	SW	.....	.....	6	.....	10	.....	.....	Blank	Blank	Overcast	J. Fisher.
Kew, Observatory	.....	.....	29.70	754.4	57.2	14.1	.....	SSW	17	7.6	.....	.....	10	.....	.....	.....	.....	Raining	The Staff.
Kingstown	29.43	747.5	29.45	748.0	54	12.2	.....	Calm	.....	.....	0	.....	10	.....	.....	.....	.....	Gloomy	George Mitchell.
Leicester, Museum	.....	.....	29.60	751.8	57.2	14.0	.....	SW	.....	.....	1	.....	10	.....	.....	.....	.....	Overcast	Wm. J. Harrison, F. G. S.
Malta, (Mediterranean)	30.04	763.0	30.11	764.8	67	19.4	.....	NE	.....	.....	3	.....	6	.....	.....	.....	.....	D. clouds	S'gt. C. Arbelter, A. H. C.
Nairn	29.17	740.9	29.26	743.2	49	9.4	.....	SW	.....	.....	3	.....	5	.....	.....	.....	.....	½ clouded	W. D. Penny.
Nassau, (Bahamas)	.....	.....	29.97	761.2	80.6	27.0	.....	NE	.....	.....	1	.....	8	.....	.....	.....	.....	D. clouds	C. S. Duncombe.
Nottingham, Observatory	29.38	746.2	29.56	750.8	58.5	14.7	.....	SSW	.....	.....	3	.....	10n	.....	SW	0.308	7.82	Raining	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.06	738.1	29.57	751.1	56.2	13.4	.....	S	.....	.....	2	.....	10	.....	.....	.....	.....	Drizzling	Rev. Stephen Whitty
Oxford, Radcliffe Obs'y	.....	.....	29.65	753.1	59	15.0	.....	SW	.....	.....	2	.....	10	.....	.....	.....	.....	Raining	F. Lucas
Plymouth	29.64	752.8	29.71	754.6	57.0	13.9	.....	SW	.....	.....	4	.....	10	.....	.....	.....	.....	Drizzling	John Merrifield.
Roche's Point	29.43	747.5	29.47	748.5	54	12.2	.....	WSW	.....	.....	4	.....	10	.....	.....	.....	.....	Misty	W. Kennedy.
Saint Ann's Head	29.40	746.7	29.56	750.8	56	13.3	.....	SW	.....	.....	5	.....	10	.....	.....	.....	.....	Raining	John C. Walker.
Sandwick Manse, (Orkneys)	.....	.....	29.18	741.2	47.9	8.8	.....	WSW	26	11.6	.....	.....	0?	.....	.....	.....	.....	Showery?	Rev. C. Clouston, LL. D
Scutari, Cemetery, (Turkey)	.....	.....	30.20	767.1	56.4	13.6	.....	N	.....	.....	1	.....	10	.....	.....	.....	.....	Raining	Sergt. W. H. Lyne.
Sheffield	29.31	744.5	29.54	750.3	58.0	14.4	.....	SW	.....	.....	2	.....	10	.....	.....	0.09	2.3	Gloomy	W. F. Cooper.
Silloth Rectory	29.30	744.2	29.32	744.7	51.9	11.1	89	W	.....	.....	2	.....	5	.....	.....	0.146	3.69	D. clouds	Rev. F. Redford, M. A.
Stonyhurst, Observatory	.....	.....	.....	.....	52.3	11.8	.....	SW	.....	.....	2	.....	10	.....	.....	.....	.....	Gloomy	Rev. S. J. Perry.
Stornoway, Lewis C. (Hebr.)	.....	.....	29.12	739.6	45	7.2	.....	SW	.....	.....	3	.....	5	.....	.....	.....	.....	D. clouds	John Smith.
Stratfield Turgiss	29.49	749.0	29.71	754.6	57.7	14.3	.....	SW	.....	.....	2	.....	10	.....	.....	.....	.....	Raining	Rev. C. H. Griffith, F. M. S.
Thurso	.....	.....	29.19	741.4	51	10.6	.....	WSW	.....	.....	4	.....	4	.....	.....	.....	.....	D. clouds	John Trotter.
Truro, Royal Institution	.....	.....	29.69	754.1	57	13.9	.....	SW	.....	.....	6	.....	10	.....	.....	.....	.....	Raining	W. Newcombe.
Valencia, Observatory	.....	.....	29.40	746.7	54.0	12.2	.....	S	31	13.9	.....	.....	10	.....	.....	.....	.....	D. clouds	The Staff.
SUB-SERIES.																			
Calf of Man, (Isle of Man)	.....	.....	.....	.....	51	10.6	.....	S	.....	.....	4	.....	10	.....	.....	0.30	7.6	.....	Henry Mercer.
Cape Good Hope, Obs'y	29.97	761.2	30.01	762.2	64.8	18.2	97	NW	10	4.5	.....	4	6	.....	.....	.....	.....	.....	The Staff, for E. J. Stone.
Hobart Town, (Tasmania)	.....	.....	29.86	758.4	47.5	8.6	86	NW	.....	.....	2	.....	4k	.....	.....	0.01	0.3	.....	Francis Abbott, F. R. A. S.
Leith, Restalrig Park	.....	.....	29.40	746.7	52.0	11.1	.....	W	.....	.....	3	10cs	.....	.....	.....	Blank	Blank	Overcast	Andrew Gibb.
Mauritius, Observatory	29.86	758.4	30.04	763.1	79.3	26.3	67	W	14.0	6.3	.....	1	2	.....	W	0	0	Fine	C. Meldrum.
Melbourne, Observatory	29.95	760.7	30.04	765.0	55.1	12.8	91	W	4	1.8	.....	.....	10	.....	.....	0.08	2.0	Dull	R. L. J. Ellery.
Monach L't-house, (Hebrides)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Youngclause.
North Unst, (Shetland Is.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Robert Burnet.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series: 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m. *Rain-fall during the month.

Marine Series. Vessels.	Sea or swell. Height scale 0—9	Sea or swell. Direction from—	Weather	Observer.
S. S. Algeria, N. 42° 45′, W. 55° 55′	*5	S	Overcast	Capt. W. Watson.
S. S. Batavia	.....	.....	.....	Capt. J. E. Mouland.
Ship Camperdown	.....	.....	.....	Capt. A. T. Miller.
Brig Catherine, N. 49° 30′, W. 6° 5′	5	.....	Drizzling	Capt. Adam Smith.
Barque Celeste	.....	.....	.....	Capt. D. F. McKechnie
S. S. Hibernia	.....	.....	.....	Capt. W. R. Cato.
Barque Maroon	.....	.....	.....	Capt. A. T. Brown.
Ship Mikado	.....	.....	.....	Capt. C. C. Prehn.
S. S. Seine	.....	.....	.....	Capt. H. Manning.
Barque Sorata	.....	.....	.....	Capt. Jas. J. Price.
Schooner Traveller, N. 53° 0′, E. 0° 55′	.....	.....	Overcast	Capt. Alex Simpson.
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....

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

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
San José	26.19	665.2			68.4	20.2	95	NE			1	3c				0.6	15.		Federico Maison.

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

DANISH SERIES.

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

Copenhagen	29.64	752.8	29.69	754.0	48.9	9.4	88	SW			4		10					
Faröe	29.55	750.6	29.57	751.1	50.2	10.1	98	SW			6		10					Raining...
Godthaab, (Greenland)	29.51	749.5	29.55	750.6	27.7	— 2.4	87	Calm			0		10					Snowing
Stykkisholm, (Iceland)	29.27	743.5	29.32	744.6	31.5	— 0.3	85	NE			7		8					
Thorshavn, (Faröe)	28.93	734.8	28.97	735.7	44.1	6.7	78	WNW			2		4					
Vestervig	29.25	742.9	29.42	747 2	50.0	10.0	100	SW			7		10					Raining

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

FRENCH SERIES.

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

Alençon, Normal School	29.48	748.8	30.03	762.8	53.6	12	83	SW			1		10			0	0	Covered	Collignon, Director.
Amiens, Normal School	29.79	756.7	29.90	759.5	55.8	13.2	83	SW			3		5		S	0	0	Cloudy	Bonvarne, Director.
Avignon, Normal School	30.11	764.9	30.19	766.9	61.3	16.3	77	NE			1		10			0	0	Covered	Mr. Giraud, Director.
Bar-sur-Seine	29.52	749.7	30.08	764.1	57.9	14.4	92	SW			3		2k		W	0.059	1.5	Slightly cl'dy	C. Saillard.
Beaumette Obs'y (Angers)	29.81	757.2	29.97	761.3	58.3	14.6	82	SSW	14.3	6.4					SW	0.008	0.2		Albert Cheux.
Beauvais	29.68	753.8	29.92	760.0	55.0	12.8	86	S			3		10		SW	0	0	Covered	Normal School.
Besançon	29.26	743.1	30.15	765.7	59.0	15	72	SW			3		2			0	0	Slightly cl'dy	Normal School.
Bourg-en-Bresse	29.28	743.6	30.21	767.3	58.8	14.9	66	S			2		0			0	0	Clear	Normal School.
Bourges, Normal School	29.60	751.9	30.11	764.8	55.9	13.3	77	SW			2		2		N	0.071	1.8	Slightly cl'dy	A. Wagner, Director.
Brest, Naval Observatory	29.58	751.2	29.80	756.8	57.0	13.9	93	SW			5		10		SW	0.157	4.00	Raining	The Staff.
Carcassonne, Normal School	29.73	755.2	30.15	765.7	59.7	15.4	89	E			2		1		E	0.31	8.	Clear	Vateau, Director.
Caen	29.81	757.2	29.89	759.1	57.9	14.4	89	N			3		10		NNE	0	0	Covered	Normal School.
Chartres, Normal School	29.45	748.1	30.02	762.5	55.8	13.2	83	SSW			6		10		NNE	0.177	4.5	Covered	Lequin, Director.
Châlons-sur-Marne, N. Sch'l	29.71	754.7	30.03	762.8	55.0	12.8	79	S			4		8k		S	0.012	0.3	Very cloudy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.74	730.0	30.08	764.1	61.2	16.2	50	E			1		0			0	0	Clear	Alluard, Director.
Commercy, Normal School	29.21	741.9	30.12	765.1	54.3	12.4	68	WSW			4		2		WSW	0	0	Slightly cl'dy	Dr. Goulet, Director.
Commune de Gréasque*	28.93	734.7	30.07	763.7	62.4	16.9	61	E			2		8		NW	0	0	¾ covered	M. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	29.84	757.8	30.05	763.3	58.3	14.6	82	SSE			6		8		SSE	0.008	0.2	Very cloudy	Mouillot, Director.
Le Mans, Normal School	29.69	754.2	30.00	762.0	54.1	12.3	95	SW			6		8		SSW	0	0	Very cloudy	Poirrier, Director.
Lons-le-Saulnier, N. School	29.22	742.1	30.14	765.5	56.5	13.6	90	WSW			4		0			0	0	Clear	Pin, Director.
Lorient, Naval Observatory	29.87	758.6	29.97	761.2	59.0	15.0	89	S			4		10			0.378	9.6	Covered	T. Carré, Director.
Mâcon, Normal School	29.45	747.9	30.14	765.5	52.3	11.3	95	Calm			0		0			0	0	Clear	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	29.03	737.9	30.10	764.4	55.4	13	66	SW					5		NE	0	0	Cloudy	Normal School.
Nismes, Normal School	29.90	759.5	30.11	764.7	59.0	15	87	SE			2		5		N	0	0	Cloudy	Boyer, Director.
Orleans, Normal School	29.65	753.2	30.04	762.9	54.3	12.4	83	NW			2		8		W	0.08	2.	Very cloudy	Bernard, Director.
Paris, Observatory	29.76	756.0	30.00	762.1	55.2	12.9	81	SW			2		10k		SW	0.026	0.67	Covered	National Observatory.
Privas	29.11	739.4	30.19	766.7	55.4	13	82	SW			2		5		SW	0	0	Cloudy	Normal School
Rochefort, Naval Obs'y	30.05	763.3	30.08	764.1	59.0	15.0	80	S			4		10		S	0	0	Covered	Lt. Decante, Director.
Rouen, Normal School	29.83	757.7	29.92	759.9	57.9	14.4	76	S			2		10		SW	0	0	Covered	F. Lucard, Director.
Tarbes, Normal School																			T. Hugues, Director.
Villefranche	29.44	747.8	30.15	765.9	59.9	15.5	90	SE			2		0			0	0	Clear	Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.79	756.6	29.82	757.3	79.2	26.2										0.08	2.		L'Abbé Marchési.
Marseilles, Observatory			30.18	766.6	66.9	19.4	66	WSW			0–1		9			0	0	Cloudy	The Staff.
Mont-Louis	24.98	634.4	30.29	769.4	49.8	9.9	59	SW	13.0	5.83			2		SW	0	0		Mr. Falguère.
Nice			30.20	767.1	61.0	16.1	77	S					5		WSW	0	0	Cloudy	Dr. A. Niepce.
Paris, Montsouris Obs'y	29.72	754.9	30.00	761.9	55.0	12.8	81	SW			4–6		10		SSW	Inap.	Inap.		Marié Davy, Director.
Perpignan			30.15	765.8	60.8	16.0	83	SE	13.0	5.83			7		SW	0.051	1.3		Dr. Fines.
Pic du Midi, (Summit,) H. P.	21.29	540.7			36.5	2.5		SW			2		1					Clear	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.68	573.5			40.5	4.7		SW			2		0			0	0	Clear	Gen'l de Nansouty.
Saint Maur, (near Paris)	29.85	758.1	30.01	762.3	64.7	12.6	83	S			3		10		SW	0.016	0.4		E. Renou.
Toulouse, Observatory	29.45	748.1	30.18	766.5	55.0	12.8	94	SE			1		8			0	0		The Staff.
Tours	29.85	758.3	30.05	763.3	56.1	13.4	84	SSW			2		10		WSW	0.028	0.7		C. Marquet.
Versailles, (near Paris)			30.00	761.9	54.7	12.6	83	SW			3		10			0.003	0.07	Covered	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.37	771.5	30.40	772.1	44.4	6.9	86	NNW	7.2	3.2			10n			0.685	17.4	Covered	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; for Montsouris, the barometer reduced to freezing but not to sea-level. At Mirecourt the cloud direction is apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,368 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

GERMAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10	Clouds. Amount. Up'er 0-10	Clouds. Amount. Low'r 0-10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Berlin	29.79	756.7	29.96	761.0	56.3	13.5	71	SW			2		8			0.022	0.56		Prof. Arndt.
Breslau	29.58	751.3	30.11	764.8	55.2	12.9	81	SSW			4		3			0	0		Royal University Obs'y.
Carlsruhe	29.64	752.9	30.07	763.7	60.1	15.6	64	SW			3		10			0	0		Albert Senz.
Cassel	29.44	747.8	30.05	763.3	54.3	12.4	72	WSW			6		8	SSW		0	0		Dr. H. Möhl.
Crefeld	29.74	755.5	29.91	759.6	56.3	13.5	72	S			4		9			0	0		Director Lose.
Emden	29.82	757.5	29.86	758.4	49.1	9.5	95	SW			3		10			0	0		Prof. Prestel.
Frankfort on the Main	29.75	755.6	30.11	764.9	57.2	14		SW			2		7			0	0		Physical Society.
Friedrichshafen	28.72	729.6	30.19	766.7	48.6	9.2	87	WNW			2		0			0	0		M. Wilhelm.
Hamburg	29.75	755.7	29.82	757.5	52.9	11.6	84	SW			5		10			0	0	Cloudy	Captain F. Hegemann.
Kiel	29.73	755.2	29.75	755.7	51.6	10.9	84	SW			6		10			0	0		Prof. G. Karsten.
Königsberg, (Prussia)	29.86	758.4	29.93	760.2	52.2	11.2	79	SW										Cloudy	Prof. E. Luther.
Köslin			29.88	759.0	52.5	11.4		SSW			4		4			0	0		H. Müller.
Leipsic, Observatory	29.62	752.4	30.04	763.0	57.6	14.2	66	SW			3		6	SW		0	0		Prof. Bruhns.
Memel, Naval School	29.85	758.3	29.90	759.5	48.7	9.3	91	SW			3		10ks						Reinbrecht von Skalweit.
Neufahrwasser	29.93	760.2	29.95	760.6	55.0	12.8	93	S			3		9			0	0		A. Lothes.
Posen	29.76	755.9	30.05	763.3	55.0	12.8	74	SW			3–4		2					Clear	Dr. Magener.
Strassburg Obs., (in Alsace	29.56	750.7	30.10	764.5	61.5	16.4	60	SW			3		9	SW		0	0		Dr. Schur.
Stuttgart	29.12	739.6	30.05	763.2	60.8	16.0	47	SW			3		7	W		0	0		Prof. Schoder.
Treves, (Trier)	29.41	746.9	29.93	760.1	56.5	13.6	72	W			7		6			0	0	Foggy	Prof. Flesch.
Weissenburg, (Bavaria)	28.59	726.1	30.08	764.1	56.8	13.8	60	SSW	2	1			2ck		W	0	0		Dr. Von Bebber.
Wustrow, Naval School	29.84	757.9	29.89	759.2	51.4	10.8	80	S			4		8					Cloudy	E. F. Schütz.
German Naval Series.																			

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

GREEK SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10	Clouds. Amount. Up'er 0-10	Clouds. Amount. Low'r 0-10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Athens	29.80	756.9	30.19	766.9	57.6	14.2		NE										½ Clear	Dr. J. F. J. Schmidt.

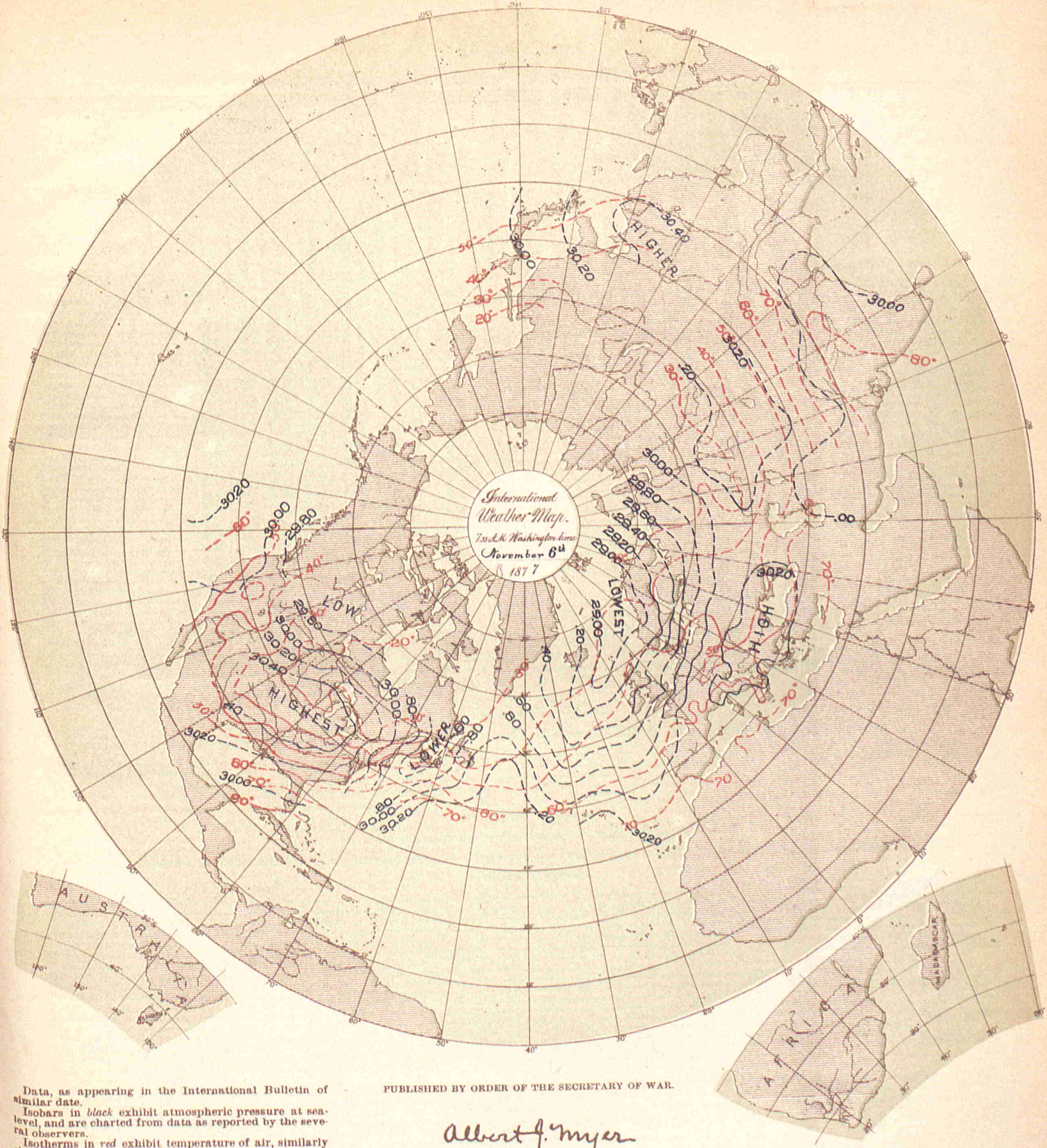
NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and wind-force. They omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10	Clouds. Amount. Up'er 0-10	Clouds. Amount. Low'r 0-10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Kurrachee	29.91	759.6	29.96	761.0	82.2	27.9	73	WSW	24.0?	10.7?			1			0	0	D. clouds	
Deesa	29.47	748.6	29.95	760.7	85.6	29.8	43	S					0			0	0	Blue sky	
Bombay	29.90	759.4	29.94	760.3	83.2	28.4	74	NW	12.0	5.4			0			0	0	Blue sky	
Poona	27.93	709.4	29.93	760.3	80.3	26.8	46	E					0			0	0	Blue sky	
Lahore	29.18	741.3	29.93	760.3	78.9	26.1	41	SW	3.6	1.6			6			0	0	Cloudy	
Belgaum	27.42	696.5	29.98	761.4	75.0	23.9	50	Calm					1			0	0	D. clouds	
Bangalore																			
Roorkee	28.98	736.0	29.88	758.9	78.8	26.0	39	Calm	1.4	0.6			0			0	0		
Agra	29.32	744.8	29.89	759.1	83.7	28.7	40	W								0	0		
Trichinopoly																			
Nagpur	28.94	735.1	29.99	761.8	79.3	26.3	33	Calm	1.8	0.8			0			0	0	Blue sky	
Madras																			
Lucknow	29.53	750.1	29.90	759.6	80.3	26.8	55	NW	1.2	0.5						0	0	Blue sky	
Allahabad	29.58	751.4	29.90	759.4	78.7	25.9	50	Calm	1.5	0.7			0			0	0	Blue sky	
Patna	29.77	756.2	29.96	760.8	80.3	26.8	51	W	1.1	0.5			0			0	0	Blue sky	
Hazaribagh	27.93	709.4	29.97	761.3	72.8	22.7	57	Calm	3.6	1.6			0			0	0	Blue sky	
Cuttack	29.91	759.8	30.00	761.9	77.1	25.1	78	W	0.3	0.1			1			0	0	D. clouds	
Calcutta (Alipore)	29.96	760.8	29.98	761.4	75.5	24.2	79	W	2.0	0.9			2			0	0	Blue sky	
Goalpara	29.56	750.8	29.96	760.8	75.7	24.3	65	Calm	0.4	0.2			0			0	0		
Chittagong	29.88	758.8	29.97	761.2	77.6	25.3	59	Calm	0.3	0.1			8			0	0		
Sibsagar	29.65	753.0	29.99	761.7	71.9	22.2	88	SE	0.8	0.4			2			0	0	Blue sky	
Rangoon																			
Jubbulpore	28.58	725.9	29.95	760.8	78.5	25.8	49	NE	1.9	0.8			0			0	0	Blue sky	

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



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

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

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

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

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

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

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

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 1—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	22.30	566.3	30.19	766.9	31.5	— 0.3	67	E			1		0			0	0		Ab. Dom. Morgini.
Stelvio	22.29	566.1	30.24	768.0	32.0	0.0		SSE			1		0			0	0		Signora Ernesta Manfredi.
Udine	29.76	755.9	30.18	766.5	58.6	14.8	39	S	0.7	0.3			0			0	0		Prof. Giovanni Clodig.
Padua	30.08	764.0	30.19	766.9	57.4	14.1	45	N	1.8	0.8			0			0	0		Prof. Dott. Lorenzoni.
Vicenza	30.00	761.9	30.19	766.9	57.7	14.3	41	N	0	0			0			0	0		Conte Alm. Da Schio.
Verona	29.92	760.0	30.15	765.8	63.0	17.2	60	SW	0	0			0			0	0		Dott. B. Bertoncelli.
Bergamo																			Prof. Trionfini Carlo.
Domodossola	29.17	741.0	30.22	767.6	59.9	15.5	59	SW			2		0			0	0		Prof. Giuseppe Calza
Milan	29.71	754.6	30.24	768.1	54.3	12.4		SSW			1		4	SSE		0	0		Ab. Gio. Capelli.
Pavia	29.88	758.9	30.23	767.9	51.4	10.8	75	S			4		4	SW		0	0		Prof. Gio. Cantoni.
Moncalieri	29.33	744.9	30.26	768.5	52.9	11.6	71	ENE	0	0			0			0	0		Prof. P. F. Denza.
Mondovi	28.29	718.6	30.23	767.8	51.6	10.9	59	NW			2		0			0	0		Prof. D. C. Bruno.
Porto Maurizio	30.00	762.0	30.23	767.7	62.4	16.9	50	E	0.7	0.3			0			0	0		Prof. L. Vassallo.
Genoa	30.03	762.7	30.20	767.0	63.9	17.7	46	N	1.8	0.8			0			0	0		Prof. G. M. Garibaldi.
Piacenza	29.97	761.3	30.23	767.9	55.0	12.8	66	NW	4.3	1.9			4			0	0		Dott. G Manzi.
Parma	29.90	759.4	30.22	767.6	58.5	14.7	46	NE			2		1			0	0		Prof. P. Pigorini.
Florence	29.95	760.7	30.21	767.4	60.8	16.0	50	NW			2		0			0	0		Cav. F Meucci.
Leghorn	30.11	764.8	30.20	767.0	64.9	18.3	52	ENE	5.6	2.5			4			0	0		Prof. P. Monte.
Siena	28.97	735.9	30.19	766.9	59.0	15.0	46	NW	0	0			0			0	0		Prof. L. Toscani.
Urbino	28.67	728.1	30.24	768.2	52.0	11.1	67	NE			2		1			0	0		Prof. P. Serpieri.
Pesaro	30.17	766.4	30.23	767.7	53.8	12.1	73	NE	23.0	10.3			0			0	0		Prof. Luigi Guidi.
Ancona	30.11	764.9	30.23	767.7	56.5	13.6	75	NW			4		1			0	0		Prof. F. DeBosis.
Grosseto	30.09	764.3	30.21	767.2	64.0	17.8	49	N			2		4	SE		0	0		Avv. P. Ponticelli.
Rome	30.02	762.4	30.19	766.9	61.3	16.3	53	N	0	0			0			0	0		Prof. P. A Secchi.
Naples, O. U	30.00	761.9	30.20	767.1	65.1	18.4	42	NNW			2		1			0	0		Prof. L. Palmieri.
Lecce					59.4	15.2	69	NNE	4.9	2.2			9	S		0	0		Prof. C. De Giorgi.
Cosenza	29.32	744.6	30.22	767.6	59.2	15.1	70	NE	1.3	0.6			2			0	0		Prof. F. D. Conti.
Cagliari	29.94	760.5	30.13	765.4	64.8	18.2	67	S			2		1			0	0		Prof. A. Pacinotti.
Riposto, (Sicily)	30.05	763.3	30.10	764.5	62.6	17.0	71	Calm			0		9			0	0		Prof. F. Cafiero.
Palermo	29.85	758.3	30.11	764.8	62.2	16.8	64	NE	2.5	1.1			1			0	0		Prof. G. Cacciatore.
Caltanissetta	28.16	715.3	30.12	765.0	57.7	14.3	50	ENE			1		4	E		0.012	0.3		Prof. A. Pagani.
Syracuse	30.02	762.6	30.10	764.5	64.0	17.8	67	NW			2		9	W		0	0		Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.65	753.0	30.20	767.1	61.2	16.2	43	NNE	0	0			0			0	0		Prof. F. Brioschi.

Note.—The originals give the wind-force on the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,543.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo, 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft; Siena, 348.5 m., or 1,143.3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft.

JAPANESE SERIES.

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

Tokei (Yeddo)																			The Observatory.
Tokei (Yeddo) University	29.92	760.0	30.02	762.6	49.3	9.6	76	Calm	0	0			108			0	0	Cloudy	Prof. P. V. Veeder.

MEXICAN SERIES.

By authority of the Secretary of Public Works.

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

Aguascalientes																			I. N. Marin, M. D.
Córdoba																			C. Peña, M. D.
Cuernavaca																			L. Castillo, A. E.
Guadalajara																			Prof. L. Perez.
Guanajuato																			Prof. V. Fernandez.
Leon																			Prof. M. Leal.
Mexico	28.18	588.8	30.35	770.9	53.4	11.9	82	Calm	0	0		0	9K			0	0	Cloudy	Central Observatory.
Orizaba																			N. N.
Orizaba																			I. Orozco, M. D.
Pabellon, (Aguascalts)																			M. V. de Leon, M. E.
Puebla																			Prof. B. Gonzalez.
Toluca																			Prof. C. Velazquez.
Tlacotalpam																			Prof. F. R. Bayly.
San Luis Potosí																			G. Barroeta, M. D.
Vera-Cruz																			Prof. J. Rossell.
Zacatecas																			J. A. Bonilla, M. E.

Note.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,230 m., or 7,512.9 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosí, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,493 m., or 8,183.6 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

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

Flushing	29.82	757.5	29.82	757.5	52.5	11.4		SSW			5					0.008	0.2		
Groningen	29.71	754.6	29.76	756.0	49.5	9.7		SSW			5					0.016	0.4		
Helder	29.70	754.3	29.70	754.3	51.8	11.0		SSW			5					0.110	2.8		
Hellevoetsluis			29.80	756.9	52.2	11.2	88	SSW			6								H. v d Brink.
Utrecht	29.77	756.2	29.82	757.4	51.8	11.0	85	SSW			5		10			0.091	2.3	Dull	

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

NORWEGIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	29.10	739.1	29.15	740.5	48.2	9.0	87	S	16.3	7.3	.....	.....	10	.....	.....	0.236	6.0	Light rain...	
Brönö	28.84	732.6	28.88	733.6	44.2	6.8	63	SSE	18	8	.....	.....	10	.....	.....	1.063	27.0	.....	
Christiania	29.01	736.9	29.16	740.6	49.3	9.6	89	SSW	13	6	.....	.....	10	.....	.....	0.197	5.0	.....	
Tromsö	28.90	734.1	28.95	735.2	36.0	2.2	93	SW	9	4	.....	.....	10	.....	.....	0.150	3.8	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

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

PORTUGUESE SERIES.

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

Angra, (Azores)	30.00	762.1	30.19	766.9	63.5	17.5	90	NW	6.9	3.1	.....	.....	3	.....	.....	0.079	2.0	.....	Dr. J. A. Sampaio
Campo Major	29.07	738.4	30.08	764.1	68.4	20.2	41	ESE	3.8	1.7	.....	.....	2	.....	.....	0	0	.....	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.01	762.2	30.10	764.4	71.2	21.8	64	SW	3.8	1.7	.....	.....	9	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.73	755.1	30.09	764.2	62.1	16.7	57	E	6.3	2.8	.....	.....	1	.....	.....	0	0	.....	The Staff.
Ponta Delgada, (Azores)	30.13	765.4	30.21	767.2	68.5	20.3	81	W	6.3	2.8	.....	.....	3	.....	.....	0.035	0.9	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

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

Naval Series. Vessels.	Sea or swell. Height scale 0–9	Sea or swell. Direction from—	
S. S. India.			A. D. Pedroso, Com'd't Lt. S. A. P. de Mirando
.....	.....	.....	.....
.....	.....	.....	.....

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

RUSSIAN SERIES.

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

Warsaw	29.67	753.6	30.10	764.4	52.7	11.5	69	SSW	11	5	.....	.....	9	.....	.....	.....	.....	.....	Astronomical Obs.
Wilna	29.60	751.9	30.02	762.6	47.8	8.8	88	S	2	1	.....	.....	10	.....	.....	.....	.....	.....	Astronomical Obs.
Dorpat	29.51	749.5	29.75	755.7	46.4	8.0	92	SW	11	5	.....	.....	10	.....	.....	.....	.....	.....	Prof. Dr. Weihrauch.
St. Petersburg	29.61	752.2	29.63	752.6	45.3	7.4	84	SW	18	8	.....	.....	10	.....	.....	.....	.....	Light rain....	Central Physical Obs.
Kuopio	29.04	737.7	29.37	745.9	41.0	5.0	100	SW	13	6	.....	.....	10	.....	.....	.....	.....	.....	Ch. Forsten.
Kieff	29.52	749.7	30.17	766.3	44.8	7.1	73	SW	7	3	.....	.....	0	.....	.....	.....	.....	.....	Physical Cabinet.
Nikolaiev	30.21	767.3	30.28	769.1	48.0	8.9	65	E	0	0	.....	.....	0	.....	.....	.....	.....	.....	Kurdukof.
Kertch	30.27	768.8	30.29	769.3	48.6	9.2	79	N	4	2	.....	.....	9	.....	.....	.....	.....	.....	Lagorio.
Moscow	29.48	748.8	30.04	763.1	41.4	5.2	71	S	9	4	.....	.....	7	.....	.....	.....	.....	.....	Meteorological Obs.
Lugan	29.98	761.4	30.19	766.7	43.2	6.2	63	NNW	9	4	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Archangel	29.47	748.4	29.48	748.9	36.7	2.6	96	S	22	10	.....	.....	10	.....	.....	.....	.....	Raining.....	Ogorodnikof.
Tiflis	28.61	726.8	30.02	762.5	61.3	16.3	68	NW	45	20	.....	.....	7	.....	.....	.....	.....	.....	Physical Observatory.
Astrakhan	30.14	765.5	30.06	763.4	50.5	10.3	54	NNW	2	1	.....	.....	10	.....	.....	.....	.....	.....	Sebastianof.
Kasan	29.80	756.9	30.08	764.0	35.4	1.9	86	Calm	0	0	.....	.....	7	.....	.....	.....	.....	.....	Physical Cabinet.
Orenburg	29.83	757.6	30.23	767.7	27.3	— 2.6	68	SW	18	8	.....	.....	8	.....	.....	.....	.....	.....	Tschernischef.
Ekaterinburg	29.19	741.4	30.16	766.5	31.8	— 0.1	71	SSW	4	2	.....	.....	9	.....	.....	.....	.....	.....	Meteorological Obs.
Nukuss	29.78	756.3	30.01	762.3	40.8	8.2	52	ENE	4	2	.....	.....	7	.....	.....	.....	.....	.....	
Kasaly	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Bobrof.
Tashkend	28.50	724.0	30.24	768.2	48.6	9.2	84	NW	2	1	.....	.....	5	.....	.....	.....	.....	.....	Michelson.
Barnaul	29.59	751.5	30.13	765.3	32.5	0.3	54	SE	4	2	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Yeniseisk	29.76	755.8	30.10	764.4	25.0	— 3.9	94	Calm	0	0	.....	.....	5	.....	.....	.....	.....	.....	Marks.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Usolzef.
Oorga	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Mossin.
Peking, (China)	30.24	768.2	30.39	771.8	39.2	4.0	52	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Physical Observatory.
Nértchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nikolaievsk, on the Amoor	.....	.....	.....	.....	13.1	—10.5	77	W	13	6	.....	.....	2k	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Ekaterinburg, 306.4? m., or 1,005.2? ft.; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft.

SPANISH SERIES.

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

Barcelona, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Rave, Director.
Bilbao, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Manuel de Naveran
Burgos, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Domingo Martin y Perez.
Madrid, Royal Observatory	27.89	708.4	30.09	764.2	63.7	17.6	66	SE	3.0	1.33	.....	0	0	.....	.....	0	0	Clear.....	The Staff.
Murcia, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Olayo Diaz, Director.
Santiago, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.89	759.2	29.96	760.9	77.8	25.4	88	Calm	0	0	.....	2c;cs	0	SW	.....	0.126	3.2	Clear.....	Benito Vines, S. J.
San Fernando, Naval Obs'y	29.97	761.1	30.06	763.5	72.1	22.3	56	E	19.0	8.5	.....	0	5	.....	ESE	0	0	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.	.....	.....	29.90	759.5	81.0	27.2	88	SE	0	0	.....	2s	2k	Calm	E	0.039	1.00	Clear.....	Leonardo de Tejeda, Chief of Engineers.

NOTE.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. instead of 8:19 a m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

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

STATIONS.	Barometer. Corrected for instru-m'tal error and tem-perature. Inches.	Barometer. Corrected for instru-m'tal error and tem-perature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Low'r 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.15	740.3	29.19	741.3	36.7	2.6	.....	S	.....	.....	2	.....	4	.....	.....	0.197	5.0	.....	
Umea	29.16	740.6	29.21	741.9	38.8	3.8	83	SW	.....	.....	2	.....	9	.....	.....	0.024	0.6	Snowing	
Hernosand	29.13	739.8	29.18	741.1	39.6	4.2	93	SW	.....	.....	4	.....	10	.....	.....	0.031	0.8	Raining	
Stockholm	29.27	743.4	29.45	747.9	45.0	7.2	89	SSW	.....	.....	6	.....	10	.....	.....	0.031	0.8	.....	
Wisby	29.60	751.8	29.66	753.3	46.4	8.0	89	SW	.....	.....	7	.....	10	.....	.....	0.031	0.8	Raining	
Sub-Series.																			
Upsala	29.31	744.5	29.39	746.4	45.3	7.4	93	S	20.4	9.1	.....	.....	10	.....	WSW	0.098	2.50	Raining	Dr. Hildebrandsson.

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

SWISS SERIES.

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

Geneva	28.74	729.9	30.13	765.4	63.7	17.6	53	SSW	.....	.....	1	.....	1	.....	.....	0	0	Clear	The Observatory.
Zurich	28.52	724.4	30.15	765.9	54.7	12.6	66	W	.....	.....	1	.....	1	.....	.....	0	0	Clear	The Observatory.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—For Geneva the corresponding departures from the normal values are: Barometer, +3.7 mm; Thermometer, +9.0 cent.; Relative Humidity, —22 per cent.

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

TURKISH SERIES.

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

Constantinople	.....	.....	30.24	768.0	54.9	12.7	93	N	6	2.5	.....	.....	10	.....	N	0	0	.....	The Observatory.
Fao, (Persian Gulf)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salonica	.....	.....	30.28	769.2	63.7	17.6	.....	S	.....	.....	1	.....	5	.....	.....	.....	.....	.....	B. Stefanides.
Valona	.....	.....	30.19	766.8	64.0	17.8	.....	SW	.....	.....	1	.....	10	.....	.....	0	0	Covered	A. Bertrand.
Varna	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Imperial Observatory.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.95	760.7	30.07	763.6	70.3	21.3	57	N	.....	.....	2	.....	7ck	.....	.....	0	0	D. clouds	Prof. C. V. A. Van Dyck

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

CANADIAN SERIES.

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

Bathurst, N. B	29.54	750.3	29.61	752.1	32.2	— 0.1	87	NW	7.5	3.4	.....	8	.....	.....	.....	0	0	.....	
Brockville, Ontario	.....	.....	30.23	767.8	18	— 7.8	.....	N	1	0.4	.....	0	0	.....	.....	0.18	4.6	Clear	Hon. J. Ferguson.
*Chatham, N. B	.....	.....	29.55	750.6	36	2.2	90	NW	15	6.7	.....	.....	10n	.....	.....	.....	.....	Clear	W. R. Bigg.
Charlottetown, P. E. Island.	.....	.....	29.46	748.3	49	9.4	97	SE	13	5.8	.....	.....	10n	.....	NW	0.78	19.8	Cloudy	G. A. Blair.
Cornwall, Ontario	29.92	760.0	30.13	765.3	18.7	— 7.4	97	NW	.....	.....	1	0	0	.....	Calm	0.400	10.16	Light rain	H. J. Cundall, C. E.
Dalhousie, N. B	29.63	752.6	29.66	753.4	23.5	— 4.7	89	W	.....	.....	2	.....	.....	.....	.....	0.250	6.35	Fair	James Smith, M. A.
Esquimault, B. C	29.72	754.9	29.76	755.9	48.3	7.4	92	W	.....	.....	.....	.....	.....	.....	.....	0.30	7.6	Gloomy	H. A. Johnson.
*Father Point, Quebec	.....	.....	29.81	757.2	27	— 2.8	85	NW	30	13.4	.....	10	.....	.....	.....	.....	.....	Heavy rain	W. H. Bevis.
Fredericton, N. B	29.58	751.3	29.65	753.1	37.3	2.9	78	NW	18.0	8.8	.....	5k	2s	NW	NW	0.19	4.8	Clearing	J. McWilliams.
*Fort Garry, Manitoba	.....	.....	29.98	761.5	22	— 5.6	86	S	12	5.4	.....	.....	8ks	.....	NW	0.875	22.23	Fair	Prof. Harrison.
Goderich, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0	.....	.....	0	0	Clear	James Stewart.
Granton, Ontario	29.20	741.7	30.38	771.6	25.2	— 3.8	98	N	.....	.....	1	1cs	0	S	.....	.....	.....	.....	H. J. Strang, M. A.
*Halifax, N. S	29.36	745.7	29.50	749.3	54	12.2	97	SW	15	6.7	.....	.....	10n	.....	SW	0	0	Clear	James Grant.
Hamilton, Ontario	30.00	762.0	30.40	772.1	24.5	— 4.2	76	NW	.....	.....	1	0	.....	.....	.....	0.685	17.41	Heavy rain	F. Allison, M. A.
Heart's Content, N. F	30.04	763.0	30.07	763.8	36	2.2	90	S	.....	.....	2	.....	10	.....	.....	0.36	9.1	Clear	Geo. Dickson, M. A
*Kingston, Ontario	29.90	759.4	30.26	768.6	19	— 7.2	86	NW	3	1.3	.....	0	0	.....	.....	0.62	15.7	Clear	E. Weedon.
Little Glace Bay, N. S	29.52	749.8	29.59	751.6	46.5	8.1	100	S	11	4.9	.....	.....	10n	.....	.....	0.26	6.6	Raining	S. Woods, M. A.
*Montreal, Quebec	29.87	758.7	30.08	764.0	22	— 5.6	86	NW	12	5.4	.....	0	0	.....	.....	0.26	6.6	Clear	C. H. Rigby.
*Parry Sound, Ontario	29.54	750.3	30.29	769.4	18	— 7.8	92	E	3	1.3	.....	5k	5ks	W	W	0.03	0.8	Cloudy	C. H. McLeod, C. E.
Peterboro, Ontario	29.50	749.3	30.32	770.1	16.3	— 8.7	47	NW	.....	.....	1	0	0	.....	.....	0.63	16.0	Clear	Rev. R. Mosley.
Port Dover, Ontario	29.65	753.1	30.40	772.1	20	— 6.7	85	W	4	1.8	.....	0	0	.....	.....	0.32	8.1	Clear	J. F. Jeffers, B. A.
Port Hastings, N. S	29.56	750.8	29.61	752.1	50.8	10.4	.....	SW	10	4.5	.....	.....	.....	.....	.....	0.50	12.7	Raining	H. Morgan.
Port Stanley, Ontario	29.69	754.1	30.36	771.1	28	— 2.2	90	W	4	1.8	.....	.....	10ks	.....	W	0.12	3.0	Cloudy	Peter Grant.
*Quebec, Quebec	29.61	752.1	29.95	760.7	20	— 6.7	70	SW	12	5.4	.....	0	0	.....	.....	0.60	15.2	Clear	M. Payne.
*Rockliffe, Ontario	29.73	755.6	30.25	768.3	17	— 8.3	83	NW	14	6.3	.....	.....	8s	.....	NW	0.05	1.3	Fair	Capt. Ashe, R. N
St. John, N. B	29.40	746.7	29.56	750.8	45	7.2	92	NW	12	5.4	.....	.....	10n	.....	.....	0	0	Cloudy	W. H. McIntyre.
*Saugeen, Ontario	29.54	750.3	30.27	768.8	34	1.1	89	W	11	4.9	.....	.....	10n	.....	.....	0.15	3.8	Cloudy	G. Murdock, C. E.
Stayner, Ontario	.....	.....	30.29	769.4	28	— 2.2	89	Calm	0	0	.....	.....	8n	.....	NW	0.50	12.7	Threatening	K. Stewart.
Stratford, Ontario	29.99	736.3	30.36	771.1	22.2	— 5.4	92	NW	2.0	0.9	.....	.....	10s	.....	.....	0.253	6.43	Cloudy	R. J. Cole.
*Sydney, C. B	29.62	752.3	29.65	753.1	49	9.4	99	S	17	7.6	.....	.....	10n	.....	S	0.35	8.9	Light rain	C. J. MacGregor, M.'A.
*Toronto, Ontario	29.94	760.5	30.36	771.1	20	— 6.7	86	NW	2	0.9	.....	0	0	.....	.....	0.40	10.2	Clear	T. C. Hill.
Windsor, N. S	29.39	746.5	29.49	749.0	58.0	14.4	94	SW	10	4.5	.....	.....	10n	.....	.....	0.26	6.6	Raining	Magnetic Observatory.
Woodstock, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. John E. Oram.
Sub-Series.																			J. Montgomery.
St. Johns, Newfoundland	.....	.....	.....	.....	37.0	2.8	90	SE	.....	.....	.....	Fog	Fog	.....	.....	0	0	Foggy	John Delany
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

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

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

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.73	755.1	29.96	761.0	28	— 2.2	88	NW	20	8.9	.....	.....	10n	.....	Calm	0.22	5.6	Light snow..	
Alpena, Michigan	29.64	752.8	30.34	770.6	23	— 5.0	72	SW	4	1.8	.....	0	0	.....	.....	0.03	0.8	Clear	
Atlantic City, New Jersey	30.01	762.2	30.03	762.7	41	5.0	73	W	22	9.8	.....	.....	10s	.....	NW	0.26	6.6	Cloudy	
Augusta, Georgia	30.01	762.2	30.20	767.1	51	10.6	93	N	3	1.3	.....	Haze	8s	Calm	N	0.11	2.8	Cloudy	
Baltimore, Maryland	30.12	765.0	30.17	766.3	41	5.0	41	NW	18	8.0	.....	2k	2s	NW	NW	0.93	23.6	Fair	
Barnegat, New Jersey	29.97	761.2	29.99	761.7	40	4.4	63	NW	32	14.3	.....	0	2s	.....	NW	0.52	13.2	Clear	
Bismarck, Dakota	28.16	715.3	29.93	760.2	18	— 7.8	84	SE	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Boise City, Idaho	27.06	687.3	29.67	753.6	42	5.6	91	Calm	0	0	.....	.....	10s	.....	Calm	0.61	15.5	Cloudy	
Boston, Massachusetts	29.58	751.3	29.74	755.4	44	6.7	60	NW	18	8.0	.....	4k	5s	NW	NW	0.57	14.5	Cloudy	
Brackettville, Texas	29.13	739.9	30.19	766.8	38	3.3	71	Calm	0	0	.....	5k	0	Calm	.....	0	0	Fair	
Breckenridge, Minnesota	29.08	738.6	30.16	766.1	15	— 9.4	82	S	18	8.0	.....	0	0	.....	.....	0	0	Clear	
Brownsville, Texas	30.21	767.3	30.28	769.1	51	10.6	78	N	10	4.5	.....	0	0	.....	.....	0.07	1.8	Clear	
Buffalo, New York	29.58	751.3	30.34	770.6	25.0	— 3.9	75	N	10	4.5	.....	2k	0	NW	.....	0.67	17.0	Fair	
Burlington, Vermont	29.76	755.9	30.04	763.0	26	— 3.3	48	NW	14	6.3	.....	.....	10s	.....	NW	0.02	0.5	Cloudy	
Cairo, Illinois	30.11	764.8	30.54	775.7	28	— 2.2	77	N	16	7.2	.....	0	0	.....	.....	Inap.	Inap.	Clear	
Camp Grant, Arizona	25.18	639.6	29.98	761.5	61	16.1	20	NW	.....	.....	1	0	0	.....	.....	0	0	Clear	
Camp Verde, Arizona	26.74	679.2	30.23	767.8	35	1.7	53	NW	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Campo, California	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Cape Hatteras, N. Carolina	29.97	761.2	29.98	761.5	59	15.0	76	NW	18	8.0	.....	5k	2s	SW	SW	0.65	16.5	Fair	
Cape Henry, Virginia	30.06	763.5	30.09	764.3	49	9.4	71	NW	48	21.5	.....	.....	10s	.....	N	0.32	8.1	Cloudy	
Cape Lookout, N. Carolina	30.07	763.8	30.08	764.0	59	15.0	76	NW	20	8.9	.....	2k	0	W	.....	1.61	40.9	Fair	
Cape May, New Jersey	30.01	762.2	30.04	763.0	45	7.2	75	NW	52	23.2	.....	0	8s	.....	NW	0.31	7.9	Fair	
Charleston, South Carolina	30.08	764.0	30.15	765.8	58	14.4	87	N	7	3.1	.....	.....	10s	.....	N	0.59	15.0	Cloudy	
Cheyenne, Wyoming	23.91	607.3	29.85	758.2	33	0.6	61	SW	6	2.7	.....	8c	0	SW	.....	0	0	Fair	
Chicago, Illinois	29.76	755.9	30.51	774.9	25	— 3.9	75	NW	4	1.8	.....	0	Fog	.....	.....	0.23	5.8	Clear	
Cincinnati, Ohio	29.78	756.4	30.47	773.9	29	— 1.7	67	NE	12	5.4	.....	Haze	Sm'e	Calm	NE	0.20	5.1	Clear	
Cleveland, Ohio	29.66	753.4	30.43	772.9	34	1.1	69	N	15	6.7	.....	.....	10s	.....	N	0.29	7.4	Cloudy	
Concho, Texas	28.40	721.3	30.20	767.1	30	— 1.1	60	N	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Corsicana, Texas	29.91	759.7	30.41	772.4	33	0.6	89	N	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Davenport, Iowa	29.86	758.4	30.56	776.2	22	— 5.6	85	Calm	0	0	.....	0	Sm'e	.....	Calm	0	0	Smoky	
Denison, Texas	29.60	751.8	30.46	773.7	30	— 1.1	89	N	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Denver, Colorado	24.71	627.6	29.93	760.2	31	— 0.6	79	NE	2	0.9	.....	0	5s	.....	Calm	0	0	Fair	
Detroit, Michigan	29.72	754.9	30.45	773.4	20	— 6.7	85	NW	4	1.8	.....	0	Sm'e	.....	Calm	0.27	6.9	Clear	
Dodge City, Kansas	27.62	701.5	30.08	764.0	22	— 5.6	76	S	10	4.5	.....	0	5s	.....	Calm	0	0	Fair	
Dubuque, Iowa	29.78	756.4	30.56	776.2	12	—11.1	80	NW	1	0.4	.....	.....	Fog	.....	Calm	0	0	Foggy	
Duluth, Minnesota	29.60	751.8	30.34	770.6	19	— 7.2	70	NW	6	2.7	.....	0	0	.....	.....	Inap.	Inap.	Clear	
Eagle Pass, Texas	29.55	750.6	30.32	770.1	47	8.3	77	Calm	0	0	.....	.....	10s	.....	Calm	0	0	Cloudy	
Eastport, Maine	29.47	748.5	29.53	750.0	46	7.8	85	N	28	12.5	.....	2ck	2s	S	N	0.94	23.9	Fair	
Erie, Pennsylvania	29.62	752.3	30.38	771.6	29	— 1.7	78	N	20	8.9	.....	5k	0	N	.....	0.50	12.7	Fair	
Escanaba, Michigan	29.66	753.4	30.37	771.4	22	— 5.6	72	W	1	0.4	.....	0	0	.....	.....	Inap.	Inap.	Clear	
Florence, Arizona	28.40	721.3	30.00	762.0	40	4.4	47	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Fort Bayard, New Mexico	24.04	610.6	30.04	763.0	33	0.6	43	NE	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Fort Craig, New Mexico	25.56	649.2	.....	.....	31	— 0.6	69	W	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Fort Gibson, Indian Ter	29.85	758.2	30.43	772.9	27	— 2.8	77	N	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Fort Griffin, Texas	29.09	738.9	30.46	773.7	30	— 1.1	78	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	29.12	739.6	30.32	770.1	27	— 2.8	77	N	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Galveston, Texas	30.25	768.3	30.29	769.4	47	8.3	77	N	13	5.8	.....	0	2s	.....	Calm	0.02	0.5	Fair	
Grand Haven, Michigan	29.76	755.9	30.45	773.4	35	1.7	70	W	12	5.4	.....	2k	0	W	.....	0.06	1.5	Clear	
Indianapolis, Indiana	29.66	753.4	30.51	774.9	26	— 3.3	88	Calm	0	0	.....	0	0	.....	.....	0.11	2.8	Clear	
Indianola, Texas	30.30	769.6	30.33	770.4	45	7.2	76	N	28	12.5	.....	0	0	.....	.....	0	0	Clear	
Jacksboro, Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Jacksonville, Florida	30.10	764.5	30.13	765.3	65	18.3	73	NW	11	4.9	.....	.....	10s	.....	NW	0.11	2.8	Cloudy	
Keokuk, Iowa	29.85	758.2	30.52	775.2	25	— 3.9	75	Calm	0	0	.....	1ck	0	Calm	.....	0	0	Clear	
Key West, Florida	29.93	760.2	29.97	761.2	80.0	26.7	86	NE	11	4.9	.....	5k	2ks	E	NE	0	0	Fair	
Kittyhawk, North Carolina	30.03	762.7	30.05	763.3	55	12.8	93	N	30	13.4	.....	0	2ks	.....	N	0.64	16.3	Fair	
Knoxville, Tennessee	29.32	744.7	30.38	771.6	35	1.7	61	N	11	4.9	.....	.....	8ks	.....	NE	0.31	7.9	Cloudy	
La Crosse, Wisconsin	29.71	754.6	30.54	775.7	9	—12.8	79	S	6	2.7	.....	0	0	.....	.....	0	0	Clear	
La Mesilla, New Mexico	26.14	663.9	30.30	769.6	32	0.0	50	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Laredo, Texas	.....	.....	.....	.....	46	7.8	76	Calm	0	0	.....	10ck	0	Calm	.....	0.01	0.3	Cloudy	
Leavenworth, Kansas	29.57	751.1	30.49	774.4	24	— 4.4	87	E	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Los Angeles, California	29.65	753.1	29.99	761.7	54	12.2	53	NE	8	3.6	.....	0	5s	.....	NE	0	0	Fair	
Louisville, Kentucky	29.87	758.7	30.46	773.7	30	— 1.1	89	N	8	3.6	.....	0	5s	.....	NE	0.17	4.3	Fair	
Lynchburg, Virginia	29.51	749.5	30.21	767.3	46	7.8	84	NW	8	3.6	.....	0	0	.....	.....	0.37	9.4	Clear	
Maricopa Wells, Arizona	.....	.....	.....	.....	34	1.1	34	N	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Marquette, Michigan	29.52	749.8	30.26	768.6	25	— 3.9	63	SW	4	1.8	.....	0	0	.....	.....	0.08	2.0	Clear	
Mason, Texas	28.68	728.5	30.56	776.2	32	0.0	89	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Memphis, Tennessee	30.15	765.8	30.49	774.4	32	0.0	69	NE	8	3.6	.....	0	0	.....	.....	0.01	0.3	Clear	
Milwaukee, Wisconsin	29.79	756.7	30.56	776.2	14	—10.0	81	W	6	2.7	.....	0	Sm'e	.....	W	0.02	0.5	Clear	
Mobile, Alabama	30.23	767.8	30.27	768.8	51	10.6	86	N	16	7.2	.....	.....	10s	.....	NE	0.45	11.4	Cloudy	
Montgomery, Alabama	30.07	763.8	30.32	770.1	46.5	8.1	72	NE	15	6.7	.....	.....	10s	.....	N	0.43	10.9	Cloudy	
Morgantown, West Virginia	29.27	743.4	30.39	771.9	31	— 0.6	60	N	11	4.9	.....	5c	5s	N	N	0.67	17.0	Fair	
Mt. Washington, N. H.	23.30	591.8	29.66	753.4	12	—11.1	100	W	60	26.8	.....	.....	10n	.....	W	0.95	24.1	Light snow.	
Nashville, Tennessee	29.89	759.2	30.47	773.9	31	— 0.6	79	N	6	2.7	.....	0	2s	.....	Calm	0.08	2.0	Clear	
New Haven, Connecticut	29.76	755.9	29.87	758.7	41	5.0	72	N	20	8.9	.....	.....	10s	.....	NW	1.15	29.2	Cloudy	
New London, Connecticut	29.74	755.4	29.79	756.7	46	7.8	77	NW	16	7.2	.....	5k	2s	W	N	0.38	9.7	Fair	
New Orleans, Louisiana	30.18	766.6	30.24	768.1	55	12.8	74	N	14	6.3	.....	.....	10s	.....	N	0.20	5.1	Cloudy	
Newport, Rhode Island	29.69	754.1	29.74	755.4	52	11.1	79	NW	17	7.6	.....	.....	10ks	.....	NW	0.49	12.4	Cloudy	
New York, New York	29.79	756.7	29.97	761.2	37	2.8	63	W	30	13.4	.....	2cs	0	W	.....	0.81	20.6	Clear	
Norfolk, Virginia	30.08	764.0	30.14	765.5	47	8.3	62	N	22	9.8	.....	2k	5s	Calm	N	0.60	15.2	Fair	
North Platte, Nebraska	27.18	690.4	29.90	759.4	23	— 5.0	72	S	12	5.4	.....	2cs	0	Calm	.....	0	0	Clear	
Olympia, Washington Ter.	29.76	755.9	29.80	756.9	44	6.7	92	S	5	2.2	.....	.....	10n	.....	.....	0.42	10.7	Light rain	
Omaha, Nebraska	29.26	743.2	30.44	773.2	20	— 6.7	85	S	9	4.0	.....	0	Haze	.....	Calm	0	0	Clear	
Oswego, New York	29.91	759.7	30.25	768.3	29	— 1.7	68	NW	15	6.7	.....	.....	10s	.....	N	0.11	2.8	Cloudy	
Pembina, Dakota	29.16	740.7	30.05	763.3	13	—10.6	81	S	13	5.8	.....	0	0	.....	.....	0	0	Clear	
Philadelphia, Pennsylvania	30.01	762.2	30.06	763.5	38	3.3	63	NW	34	15.2	.....	0	0	.....	.....	1.48	37.6	Clear	
Phœnix, Arizona	.....	.....	.....	.....	41	5.0	33	E	.....	.....	.....	2cs	0	Calm	.....	0	0	Clear	
Pike's Peak, Colorado	17.64	448.0	29.84	757.9	9	—12.8	78	SW	36	16.1	.....	5cs	5s	N	SW	0	0	Cloudy	
Pioche, Nevada	23.92	607.6	29.69	754.1	40	4.4	48	S	10	4.5	.....	.....	10s	.....	Calm	0	0	Cloudy	
Pittsburg, Pennsylvania	29.51	749.5	30.37	771.4	30	— 1.1	78	N	6	2.7	.....	0	0	.....	.....	0.24	6.1	Clear	
Port Huron, Michigan	29.70	754.4	30.41	772.4	24	— 4.4	87	NW	9	4.0	.....	0	0	.....	.....	0.46	11.7	Clear	
Portland, Maine	29.67	753.6	29.72	754.9	43	6.1	67	N	18	8.0	.....	5k	2s	W	W	0.52	13.2	Clearing	
Portland, Oregon	29.85	758.2	29.95	760.7	49	9.4	85	SW	5	2.2	.....	.....	8n	.....	SW	1.12	28.4	Light rain	
Prescott, Arizona	24.72	627.9	30.08	764.0	37	2.8	38	SW	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Punta Rassa, Florida	30.00	762.0	30.02	762.5	74	23.3	85	N	8	3.6	.....	0	5ks	Calm	0	0	Fair		
Red Bluff, California	29.68	753.9	30.04	763.0	52	11.1	93	W	2	0.9	.....	.....	10s	.....	Calm	0.44	11.2	Cloudy	
Rochester, New York	29.62	752.3	30.28	769.1	26	— 3.3	88	NW	7	3.1	.....	0	0	.....	.....	0.32	8.1	Clear	
Roseburg, Oregon	29.45	748.0	30.02	762.5	45	7.2	92	Calm	0	0	.....	.....	10s	.....	Calm	1.16	29.5	Cloudy	

UNITED STATES SERIES.—Continued.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Sacramento, California	29.90	761.0	30.05	763.3	58	14.4	87	S	8	3.6	.....	.....	8s	.....	NW	0.06	1.5	Cloudy	
St. Louis, Missouri	29.93	760.2	30.55	776.0	27	—2.8	76	N	9	4.0	.....	0	5s; sm	.....	Calm	0.04	1.0	Fair	
St. Marks, Florida	30.12	765.0	30.13	765.3	62	16.7	88	N	10	4.5	.....	0	5s	.....	N	0.16	4.1	Fair	
St. Paul, Minnesota	29.48	748.8	30.38	771.6	20	—6.7	70	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salt Lake City, Utah	25.48	647.2	29.81	757.2	46	7.8	84	E	6	2.7	.....	.....	10n	.....	Calm	0.06	1.5	Light rain	
San Antonio, Texas	29.63	752.6	30.24	768.1	40	4.4	82	NE	2	0.9	.....	0	0	.....	.....	0	0	Clear	
San Diego, California	29.90	761.0	30.03	762.7	54	12.2	55	NE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Sandusky, Ohio	29.74	755.4	30.47	773.9	30	—1.1	89	NW	22	9.8	.....	0	1ks	.....	NW	0.26	6.6	Clear	
Sandy Hook, New Jersey	29.96	761.0	29.98	761.5	40	4.4	64	NW	40	17.9	.....	0	5ks	.....	NW	0.72	18.3	Fair	
San Francisco, California	29.90	761.7	30.00	763.5	55	12.8	93	W	10	4.5	.....	Haze	2s	.....	W	0.23	5.8	Fair	
Santa Fé, New Mexico	23.28	591.3	29.82	757.4	32	0.0	63	E	4	1.8	.....	Haze	2s	.....	Calm	0	0	Fair	
Savannah, Georgia	30.06	763.5	30.15	765.8	57	13.9	87	N	12	5.4	.....	1cs	0	W	.....	0.62	15.7	Clear	
Shreveport, Louisiana	30.18	766.6	30.41	772.4	40	4.4	82	E	5	2.2	.....	.....	10s	.....	E	0	0	Cloudy	
Smithville, North Carolina	30.09	764.3	30.13	765.3	56	13.3	94	N	8	3.6	.....	1cs	0	Calm	.....	0.58	14.7	Clear	
Springfield, Massachusetts	29.64	752.8	29.77	756.1	41	5.0	57	NW	12	5.4	.....	.....	10ks	.....	N	1.57	39.9	Cloudy	
Stanwix, Arizona	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Stockton, Texas	27.16	689.8	30.16	766.1	35	1.7	79	SE	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Thatcher's Island, Mass	29.67	753.6	29.72	754.9	44	6.7	84	NW	28	12.5	.....	8k	0	NW	.....	0.32	8.1	Fair	
Toledo, Ohio	29.74	755.4	30.48	774.2	24	—4.4	74	W	4	1.8	.....	0	0	.....	.....	0.46	11.7	Clear	
Tucson, Arizona	27.61	701.3	30.17	766.3	39	3.9	27	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Tybee Island, Georgia	30.10	764.5	30.13	765.3	58	14.4	87	NW	14	6.3	.....	0	5ks	.....	NW	0.52	13.2	Clearing	
Umatilla, Oregon	29.56	750.8	.....	.....	45	7.2	85	SW	8	3.6	.....	0	5s	.....	Calm	0.06	1.5	Fair	
Vicksburg, Mississippi	30.18	766.3	30.40	772.1	42	5.6	66	NE	10	4.5	.....	.....	10s	.....	NE	0.02	0.5	Cloudy	
Virginia City, Montana	24.09	611.9	29.57	751.1	35	1.7	80	Calm	0	0	.....	.....	10s	.....	Calm	0	0	Cloudy	
Visalia, California	29.67	753.6	30.04	763.0	58	11.7	80	Calm	0	0	.....	Haze	0	Calm	.....	0	0	Hazy	
Washington, D. C	30.10	764.5	30.21	767.3	40	4.4	56	NW	20	8.9	.....	2k	5s	NW	NW	0.64	16.3	Cloudy	
Wickenburg, Arizona	.....	.....	.....	.....	33	0.6	42	N	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Wilmington, N. Carolina	30.03	762.7	30.11	764.8	55	12.8	86	N	6	2.7	.....	0	0	.....	.....	0.55	14.0	Clear	
Winnemucca, Nevada	25.59	650.0	29.95	760.7	35	1.7	90	SW	4	1.8	.....	0	2s	.....	SW	0.30	7.6	Clear	
Wood's Holl, Mass	29.70	754.4	29.75	755.6	54	12.2	80	NW	8	3.6	.....	.....	10s	.....	NW	0.25	6.3	Cloudy	
Yankton, Dakota	28.98	736.1	30.38	771.6	19	—7.2	76	SE	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Yuma, Arizona	29.82	757.4	29.99	761.7	45	7.2	45	Calm	0	0	.....	8cs	0	Calm	.....	0	0	Fair	
Sub-Series.																			
York Factory, B. A	29.62	752.3	29.68	753.9	19.0	—7.2	92	W	3	1.3	.....	.....	9s	.....	.....	0.03	1.5	Cloudy	J. Fortescue, W. Wood
Havana, Cuba, W. I	29.90	759.4	29.92	760.0	80	26.7	86	Calm	0	0	.....	8c	4ks	Calm	E	0.10	2.5	Cloudy	Chas. Hasselbrink.
Kingston, Jamaica, W. I	30.07	763.8	30.08	764.0	70	20.1	91	Calm	0	0	.....	5c	8n	.....	SE	0.02	0.5	.....	James Gall.
Navassa, W. I	29.81	757.2	29.89	759.2	82	27.8	.....	E	30	13.4	.....	.....	.....	.....	.....	1.55	39.4	Cloudy	F. M Everett.
St. Thomas, W. I	.....	.....	.....	.....	81	27.2	87	E	3	1.3	.....	2c	4ks	NE	.....	0.65	16.5	.....	G. O. Gellich.
Paramaribo, D. Guiana, S. A	.....	.....	29.97	761.2	83	28.3	79	E	.....	.....	3	5k	8ks	E	.....	0	0	½ cloudy	C. J. Hering.
Batavia, Dutch Guiana, S. A	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Dr. H. Groot.
Medellin, Colombia, S. A	25.20	640.1	.....	.....	64.5	18.1	87	Calm	.....	.....	0	.....	10s; ks	.....	.....	0.46	11.7	Cloudy	Thomas Herran.
Honolulu, Oahu, H. I	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Daniel Smith.
Makawao, Maui, H. I	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. L. Clarke.

Note.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters: Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,883 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,102 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.468 inches; Campo, 2.67 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in. Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

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

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

STATIONS AND VESSELS.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard Mare Island, Cal.	30.05	763.3	55	12.8	53	11.7	93	NW	0.5	0.2	.....	.....	3n	.....	W	0.02	0.5	.....	.....	.....	
Navy Yard, Pensacola, Fla.	30.29	769.4	.....	.....	59	15.0	82	N	10	4.5	.....	.....	4	.....	.....	0	0	.....	.....	D. clouds.....	
Navy Yard, Portsmouth, N.H	29.67	753.6	62	16.7	42	5.6	74	WNW	5	2.2	.....	.....	10	.....	.....	0.9	23.	.....	.....	Cloudy.....	
Naval Hospital, Yokohama, Japan	29.91	759.7	57	13.9	49	9.4	85	Calm	.....	.....	0	.....	10s	.....	SW	0	0	.....	.....	Cloudy.....	
Adams. S. 43° 50′ 23″, W. 62° 41′	30.10	764.5	55	12.8	54	12.2	80	NW	.....	.....	3	.....	0	.....	.....	0	0	Long	NW	Blue sky.....	
Alert. N. 34° 30′, E. 138° 40′	30.07†	763.8†	60	15.6	60	15.6	76	NNE	.....	.....	2	.....	10	.....	NE	.....	.....	Smooth	.....	D. clouds.....	
Alliance, Constantinople, Turkey.	30.35	770.9	74	23.3	57	13.9	87	NE	.....	.....	1–2	.....	10	.....	NE	.....	.....	.....	.....	Overcast.....	
Ashuelot. Tientsin, China	30.37	771.4	53	11 7	36	2.2	46	S&W	.....	.....	1	.....	0	.....	.....	.....	.....	.....	.....	Blue sky.....	
Canonicus, New Orleans, La	30.18	766.6	45	7.2	56	13.3	75	N	.....	.....	3	.....	10	.....	.....	.....	.....	.....	.....	Cloudy.....	
Colorado, New York, N. Y.	30.04	763.0	64	17.8	50	10.0	58	NW	30	13.4	.....	.....	4	.....	NW	1.03	26.2	.....	.....	Fair	
Despatch, Constantinople, Turkey.	30.38	771.6	70	21.1	57	13.9	87	NW	.....	.....	2–3	.....	10	.....	N	.....	.....	.....	.....	Cloudy.....	
Essex. Cape Palmas, Guinea	29.82	757.4	80	26.7	80	26.7	??	SSW	.....	.....	2	.....	10	.....	S	.....	.....	Long	SW	Showery.....	
Franklin, Norfolk, Va	30.22	767.6	51	10.6	48	8.9	56	N	21.5	9.6	.....	.....	7	.....	N	0.2	5.	.....	.....	Cloudy.....	
Gettysburg. Malta	29.97‡	761.2‡	.....	.....	72	22.2	100	Calm	.....	.....	0	.....	3	.....	Calm	0	0	.....	.....	D. clouds.....	
Guard, N. 38° 58′, W. 60° 40′	30.30	769.6	71	21.7	73	22.8	??	SW	.....	.....	6–8	.....	9	NE	SW	.....	.....	Rough	SW	Squally	
Marion, Smyrna, Turkey	30.15	765.8	64	17.8	65	18.3	53	WSW	.....	.....	1	.....	3	.....	Calm	0	0	Smooth	.....	D. clouds.....	
Michigan, Erie, Pa	29.78	756.4	51	10.6	31	— 0.6	79	N	.....	.....	3	.....	2	.....	N	.....	.....	.....	.....	. .....	
Monocacy, Yokohama, Japan	29.90	759.4	61	16.1	52	11.1	73	Var.	.....	.....	0–1	.....	10	.....	.....	.....	.....	.....	.....	D. clouds.....	
Monongahela, Gibraltar, Spain	30.11	764.8	66	18.9	67	19.4	79	N	.....	.....	2–4	.....	kn	.....	.....	.....	.....	Smooth	.....	D. clouds.....	
New Hampshire, Port Royal, S.C	30.28	769.1	.....	.....	58	14.4	94	NW	17	7.6	.....	.....	10	.....	NW	0.05	1.3	.....	.....	D. clouds.....	
Omaha, Callao, Peru	30.05	763.3	73	22.8	70	21.1	80	Calm	0	0	.....	.....	10	.....	Calm	0	0	Smooth	.....	Dull	
Onward, Callao, Peru	30.01	762.2	72	22.2	69	20.6	77	N	.....	.....	1	.....	9	.....	.....	.....	.....	Long	W	Hazy.....	
Ossinee, Hampton Roads, Va	30.16	766.1	71	21.7	49	9.4	64	NW	.....	.....	7	.....	7	.....	SW	.....	.....	.....	.....	Squally.....	
Palos, Shanghai, China	30.36	771.1	57	13.9	47	8.3	92	NNW	.....	.....	2	.....	10	.....	W	.....	.....	.....	.....	Raining.....	
Pensacola, Mare Island, Cal.	30.14	765.5	.....	.....	55	12.8	93	SSW	.....	.....	1	.....	3	.....	.....	0.02	0.5	.....	.....	Damp	
Plymouth. Norfolk, Va	30.16	766.1	60	15.6	49	9.4	100	NNW	.....	.....	4	.....	7	.....	.....	.....	.....	.....	.....	Overcast.....	
Ranger, Shanghai, China	30.48	774.2	.....	.....	52	11.1	86	NNW	.....	.....	2	.....	10	.....	Calm	.....	.....	.....	.....	Rainy.....	
Rio Bravo, Brownsville, Texas	30.14	765.5	.....	.....	51	10.6	86	NW	.....	.....	4–5	.....	4	.....	NW	.....	.....	.....	.....	Squally.....	
Santee, Annapolis, Md	30.21	767.3	58	14.4	43	6.1	59	NW	.....	.....	4	.....	4	.....	NW	0.6	15.	.....	.....	Clear	
Saratoga, Hampton Roads, Va	30.42†	772.7†	.....	.....	60	15.6	71	NW	.....	.....	6	.....	3	.....	NW	0	0	.....	.....	Cloudy	
St. Louis, League Island, Pa	29.98	761.5	40	4.4	38	3.3	81	NW	30	13.4	.....	.....	5	.....	NW	1.15	29.2	.....	.....	Fair.....	
Swatara, Hampton Roads, Va	30.17	766.3	.....	.....	49	9.4	71	NNW	.....	.....	7	.....	2	.....	N&W	.....	.....	.....	.....	D. clouds.....	
Tennessee, Yokohama, Japan	30.02	762.5	62	16.7	53	11.7	73	NW	4	1.8	.....	.....	10	.....	N&W	0	0	Slight	N&W	Overcast.....	
Trenton, Villefranche, France	30.26	768.6	66	18.9	66	18.9	74	E	5	2.2	.....	.....	7	.....	E	0	0	.....	.....	D. clouds.....	
Vandalia, Villefranche, France.	30.19	766.8	64	17.8	63	17.2	78	Calm	.....	.....	0	.....	2	.....	Calm	.....	.....	.....	.....	D. clouds.....	
Wabash, Boston, Mass	29.73	755.1	51	10.6	45	7.2	76	NW	14	6.3	.....	.....	9	.....	Calm	0.28	7.1	.....	.....	D. clouds.....	
Wyoming, Washington, D. C.	30.40†	772.1†	.....	.....	45	7.2	.....	NW	.....	.....	4	.....	7	.....	.....	.....	.....	.....	.....	D. clouds....	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. ‡ Barometer corrected for instrumental error and reduced to sea-level.

UNITED STATES MARINE SERIES.

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

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.	Character.	Direction from—		
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—				
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of ————, President; Williams, Blanchard & Co.. Agents.																			
S. S. Alaska																			Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama, N. 18° 33′ 58″, W. 104° 22′ 37″			29.65	753.1	84	28.9	79	SE			1		6		S	Light	NW to SW	D. clouds	Capt. Howard.
S. S. City of Peking, N. 37° 04′, E. 146° 25′			30.09*	764.3*	56	13.3	51	NNW			1		2		NNW	Long	NNW	Showery	Lt. Z. L. Tanner, U.S.N.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio, N. 38° 24′, W. 134° 09′			30.25	768.3	68	20.0		NW			5		8		W	Long	WNW	Overcast	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

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

WHITE STAR LINE MARINE SERIES.

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

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

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

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

S. S. Belgic, N. 30° 33′, E. 171° 7′			30.21†	767.3†				SE			4		Heavy		SSE	Long	SE	Cloudy	Capt. John Metcalf.
S. S. Gaelic																			Capt. W. H. Kidley.
S. S. Oceanic																			Capt. H. Parsell.

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

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

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

S. S. Baltimore																			Capt. H. Andressen
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig																			Capt. K. Undütsch.
S. S. Nürnberg, N. 41° 10′, W. 60° 9′			30.35	770.9	64.0	17.8	58	SW			3-4		c		SW	Smooth	SW	Clear	Capt. A. Jaeger.
S. S. Ohio, N. 40° 28′, W. 15° 5′			29.49	749.0	55.0	12.8	90	W			5		10			dough	W	Drizzling	Capt. G. Meyer.

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

UNITED STATES MARINE SERIES.—Continued.

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

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Lo'wr	Upper.	Lower.	Character	Direction From—		
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second	0—10.	0—10.	0—10.	From—	From—				
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, Philadelphia, Pa			30.29*	769.4*	47	8.3	77	NW			4		7		WNW			Cloudy	Captain Sargent.
S. S. Ohio. N. 47° 43′, W. 43° 39′			30.21	767.3	42.6	5.8	87	WNW			6		??		NW	High	NW	Clear?	Captain Morrison.
S. S. Pennsylvania, N. 49° 02′, W. 32° 01′			29.48†	748.8†	48	8.9	92	NW			8		6?		WNW	Heavy	WNW	Clear?	Captain Harris.

NOTE.—The originals give the barometer as read off; the wind-force by the scale 0 to 12. *Aneroid; correction for elevation applied, instrumental error not known.
†Corrected for temperature and elevation, instrumental error not known.

RED STAR LINE MARINE SERIES.

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

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

ALLAN LINE MARINE SERIES.

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

S. S. Hibernian																			Capt. W. Richardson.
S. S. Scandinavian																			

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, Provincetown, Mass.			29.67	753.6	56	13.3	81	NW	18	8.0		2c	1ks	NW				Clear.	Capt. James Jorgensen.

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

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

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

Albert J. Myer

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

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON NOVEMBER 7, 1877.

7:35 A. M. WASHINGTON mean time.

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

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

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

ALGERIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Nemours	.....	.....	30.02	762.5	81.3	27.4	31	SW	.....	.....	3	.....	2	.....	.....	0	0	Fair	Michel.
Algiers	.....	.....	29.98	761.6	71.6	22.0	72	N	.....	.....	1	.....	3	.....	.....	0	0	Pretty fair.	Peter.
La Calle	.....	.....	30.08	764.1	71.2	21.8	54	SE	.....	.....	2	.....	1	.....	.....	0	0	Very fair	Fleury.
Tunis	.....	.....	30.18	766.5	66.2	19.0	61	E	.....	.....	3	.....	4	.....	.....	0	0	Cloudy	Jacques.
Sfax	.....	.....	30.17	766.4	68.0	20.0	.....	NW	.....	.....	2	.....	3	.....	.....	0	0	Pretty fair.	Husson.
Saida	.....	.....	30.11	764.8	66.6	19.2	42	S	.....	.....	2	.....	2	.....	.....	0	0	Fair	Millot.
Tebessa	.....	.....	30.11	764.9	.....	.....	.....	Calm	.....	.....	0	.....	0	.....	.....	.....	.....	Clear	Bourgeois.
Geriville	.....	.....	30.10	764.4	60.4	15.8	53	SE	.....	.....	5	.....	4	.....	.....	0	0	Cloudy	Lemaillot.
Laghouat	.....	.....	30.13	765.3	64.4	18.0	44	W	.....	.....	4	.....	4	.....	.....	0	0	Cloudy	Guyot.
Biskra	.....	.....	30.16	766.0	71.4	21.9	26	SE	.....	.....	1	.....	4	.....	.....	0	0	Cloudy	Kuntz.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

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

AUSTRIAN SERIES.

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

Agram	29.67	753.5	30.22	767.6	52.7	11.5	50	SW	.....	.....	3	.....	6	.....	.....	0	0	.....	Prof. Ivan Stozir
Cracow, I. R. Observatory	29.38	746.2	30.15	765.8	53.6	12.0	56	NE	.....	.....	1	.....	0	.....	.....	0	0	.....	Dr. Wierzbiski.
Eperies	29.33	744.9	30.23	767.8	45.9	7.7	71	Calm	.....	.....	0	.....	0	.....	.....	0	0	.....	Julius Mikolik.
Gratz	28.93	734.9	30.21	767.4	46.9	8.3	70	S	.....	.....	2	.....	0	.....	.....	0	0	.....	Andreas Rospini.
Hermannstadt	28.80	731.6	30.25	768.3	48.9	9.4	62	E	.....	.....	1	.....	0	.....	.....	0	0	.....	Prof. Reissenberger.
Kremsmünster	28.73	729.8	30.11	764.7	43.5	6.4	86	NE	.....	.....	1	.....	0	.....	.....	0	0	.....	Prof. C. Wagner.
Lemberg	29.17	740.8	30.17	766.4	47.3	8.5	88	SW	.....	.....	1	.....	1	.....	.....	0	0	.....	Dr. T. Stanecki.
Pola	30.10	764.5	30.21	767.4	57.0	13.9	76	W	.....	.....	0	.....	0	.....	.....	0	0	Foggy	I.R.Hydrographic Office.
Szathmar	29.81	757.1	30.28	769.1	48.2	9.0	70	S	.....	.....	2	.....	0	.....	.....	0	0	.....	Johann Tamas, S. J.
Szegedin	29.96	761.0	30.24	768.2	54.7	12.6	61	S	.....	.....	2	.....	0	.....	.....	0	0	.....	Karl Stancel.
Trieste	30.14	765.6	30.24	768.2	55.4	13.0	87	SW	.....	.....	1	.....	0	.....	.....	0	0	Clear	P. Busin.
Vienna	29.45	748.0	30.16	766.1	46.8	8.2	74	WSW	.....	.....	1	.....	0	.....	.....	0	0	.....	I. R. Central Met. Obs'y.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

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

BELGIAN SERIES.

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

Arlon	28.43	722.2	29.93	760.1	56.1	13.4	72	SW	.....	.....	1	.....	9	.....	.....	0.055	1.4	.....	Prof. M. Passau.
Brussels	29.61	752.2	29.81	757.2	55.4	13.0	88	SSW	.....	.....	5	.....	10	.....	SSW	0.136	3.45	Light rain	Royal Observatory.
Furnes	29.76	755.8	29.79	756.6	54.9	12.7	94	SSW	.....	.....	4	.....	10	.....	.....	0.217	5.5	.....	M. E. de Cae.
Maeseyck	29.72	754.8	29.85	758.1	58.3	14.6	81	SSW	.....	.....	6	.....	10	.....	.....	0.028	0.7	.....	M. Pierrot.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

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

BRITISH SERIES.

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

STATIONS.	Barometer. Corrected for instrum't'al error and temperature. Inches.	Barometer. Corrected for instrum't'al error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	29.31	744.5	29.41	747.0	49.4	9.7		S	10	4.5			4			0	0	Blue sky	W. Boswell.
Ardrossan	29.40	746.7	29.42	747.3	51	10.6		SW			3		5					D. clouds	William McNeil.
Armagh, Observatory			29.45	748.0	50.9	10.5		SSW	16	7.2			3					D. clouds	S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)			29.55	750.6	52.5	11.4		SW	12	5.4			9					Raining	John Hartnup.
Birr Castle, (Parsonstown)			29.48	748.8	52.7	11.5		SW			1		3					D. clouds	J. Dreyer.
Bradford, Yorkshire	29.16	740.7	29.57	751.1	53.1	11.7		S			2		5			0.17	4.3	D. clouds	J. McLandsborough.
Bridgetown, (Barbados)	29.87	758.7	29.90	759.4	83.0	28.3		NE			1		2					D. clouds	Pvt. G. W. Roberts, A.
Cambridge, Observatory			29.65	753.1	54.0	12.2		SSW			1		10					Overcast	H. Todd. [H. C.
Cardington			29.67	753.6	56.0	13.3		SW			1		10					Overcast	John McLaren.
Chatham, School M. E.	29.52	749.8	29.65	753.1	54.2	12.3		SW			2		10					Drizzling	Lt. Col. C. M. Martin, R. E.
Dartmoor	28.34	719.8	29.88	758.9	48.6	9.2		SW			2		6					D. clouds	Alexander Watt.
Davos Platz (Switzerland)																			Francis Redford, M. A.
Donaghadee	29.42	747.3	29.45	748.0	51	10.6		WSW			2		0					Blue sky	J. Mac Gowan.
Dover	29.67	753.6	29.69	754.1	56	13.3		SW			5		7					Drizzling	J. Costello.
Eccles, (near Manchester)			29.56	750.8	54.6	12.6		SW	3.2	1.4			5					D. clouds	Thomas Mackereth.
Falmouth, Observatory	29.43	747.5	29.66	753.4	56.0	13.3		SW			3		6					Overcast	The Staff.
Fort Napier, (Natal)	27.77	705.4	29.97	761.2	71.1	21.7		E			3		10					Overcast	Pvt. G. Salmon, A. H. C.
Free Town, (Sierra Leone)			29.90	759.4	85.5	29.7		Calm			0		4					D. clouds	
Galway, Queen's College					50	10.0		SW			3		2					Gloomy	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	29.93	760.2	29.98	761.5	67.8	19.9		NE			2		4					D. clouds	Corpl. C. Aitken, A. H. C.
Glasgow, Observatory	29.22	742.2	29.42	747.3	49.6	9.8		SSW			4		3					Blue sky	D. G. Maclean.
Great Yarmouth	29.64	752.8	29.64	752.8	52	11.1		NW			2		8					Drizzling	G. T. Watson.
Greenwich, Royal Obs'y	29.49	749.0	29.66	753.4	53.5	11.9		SW			1		10					Overcast	The Staff, for G. B. Airy.
Guernsey	29.47	748.5	29.69	754.1	56	13.3		SW			1		8					D. clouds	Dr. S. E. Hoskins, F. R. S.
Helston			29.66	753.4	58	14.4		SW			4		2ck			0.18	4.6	Fine	M. P. Moyle.
Holyhead	29.48	748.8	29.53	750.0	53	11.7		SW			4		1					Blue sky	John Tilston.
Jersey	29.45	748.0	29.74	755.4	55.5	13.1		WSW			4		10			Blank	Blank	Overcast	J. Fisher.
Kew, Observatory			29.66	753.4	55.0	12.8		W	4	1.8			9sd					Hazy	The Staff.
Kingstown	29.47	748.5	29.50	749.3	53	11.7		SSW			4		4					D. clouds	George Mitchell.
Leicester, Museum			29.60	751.8	53.9	12.2		SW			1		10					Overcast	Wm. J. Harrison, F. G. S.
Malta, (Mediterranean)	30.08	764.0	30.16	766.1	65.2	18.4		NE			6		4					D. clouds	S'gt. C. Arbeiter. A. H. C.
Nairn	29.25	742.9	29.34	745.2	47	8.3		W			2		5					½ clouded	W. D. Penny.
Nassau, (Bahamas)			29.98	761.5	76.2	24.6		NE			1		10			Blank	Blank	Gloomy	C. S. Duncombe.
Nottingham, Observatory	29.42	747.3	29.61	752.1	55.0	12.8		SSW			2		10k;d		WSW	0.050	1.27	Overcast	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.08	738.6	29.60	751.8	53.2	11.8		SW			3		10					Overcast	Rev. Stephen Whitty
Oxford, Radcliffe Obs'y			29.63	752.6	56	13.3		WSW			1		8					Overcast	F. Lucas
Plymouth	29.58	751.3	29.66	753.4	55.0	12.8		SW			2		10					Overcast	John Merrifield.
Roche's Point	29.48	748.8	29.52	749.8	53	11.7		SW			4		8					Showery	W. Kennedy.
Saint Ann's Head	29.42	747.3	29.58	751.3	54	12.2		SW			3		6					Showery	John C. Walker.
Sandwick Manse, (Orkneys.)			29.32	744.7	45.3	7.4		W	13	5.8			0?					Showery?	Rev. C. Clouston, LL. D
Scutari, Cemetery, (Turkey)			30.17	766.3	58.8	14.9		NE			1		9					Drizzling	Sergt. W. H. Lyne.
Sheffield	29.33	745.0	29.56	750.8	54.1	12.3		SW			1		6			0	0	D. clouds	W. F. Cooper.
Silloth Rectory	29.45	748.0	29.48	748.8	55.3	12.9	69	SW			3		0			0	0	Blue sky	Rev. F. Redford, M. A.
Stonyhurst, Observatory					51.2	10.7		SW			1		10					Misty	Rev. S. J. Perry.
Stornoway, Lews C., (Hebr.)			29.27	743.4	45	7.2		WSW			1		5					D. clouds	John Smith.
Stratfield Turgiss	29.44	747.8	29.65	753.1	54.3	12.4		SW			1		8					D. clouds	Rev. C. H. Griffith, F. M. S.
Thurso			29.30	744.2	48	8.9		SW			1		5					D. clouds	John Trotter.
Truro, Royal Institution			29.64	752.8	57	13.9		SW			6		7					D. clouds	W. Newcombe.
Valencia, Observatory			29.47	748.5	52.6	11.4		SW	25	11.2			6					D. clouds	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)					51	10.6		SW			4		2			0.04	1.0		Henry Mercer.
Cape Good Hope, Obs'y	29.91	759.7	29.95	760.7	74.4	23.6	45	NW	10	4.5		10	10						The Staff, for E. J. Stone.
Hobart Town, (Tasmania)			29.66	753.4	58.0	14.4	65	NW			1		10n			0.03	0.8	Covered	Francis Abbott, F. R. A. S.
Leith, Restalrig Park			29.48	748.8	52.6	11.4		SW			2		2k			0	0	Fine	Andrew Gibb.
Mauritius, Observatory	29.83	757.7	30.02	762.4	76.7	24.8	76	ENE	8.0	3.6		0	8		SE	0	0	Cloudy	C. Meldrum.
Melbourne, Observatory	29.78	756.4	29.88	758.9	58.3	14.6	86	WSW	6	2.7			3			0	0	Very fine	R. L. J. Ellery.
Monach L't-house, (Hebrides)																			J. Youngclause.
North Unst, (Shetland Is.)																			Robert Burnet.

Note.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m.

Marine Series. Vessels.	Sea or swell. Height scale 0—9	Sea or swell. Direction from—	Weather.	Observer.
S. S. Algeria, N. 41° 50′, W. 60° 40′	*15	NW	D. clouds	Capt. W. Watson.
S. S. Batavia				Capt. J. E. Mouland.
Ship Camperdown				Capt. A. T. Miller.
Brig Catherine				Capt. Adam Smith.
Barque Celeste				Capt. D. F. McKechnie.
S. S. Hibernia				Capt. W. R. Cato.
Barque Maroon				Capt. A. T. Brown.
Ship Mikado				Capt. C. C. Prehn.
S. S. Seine				Capt. H. Manning.
Barque Sorata				Capt. Jas. J. Price.
Schooner Traveller, N. 53° 2′, E. 0° 25′			Misty	Capt. Alex Simpson.

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

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

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

STATIONS.	BAROMETER. Corrected for instrum'tal error and temperature.		BAROMETER. Reduced to sea-level.		TEMPERATURE OF THE AIR.		RELATIVE HUMIDITY.	WIND. Direction.	WIND. Velocity.		WIND. Force.	CLOUDS. Amount.		CLOUDS. Direction.		RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS.		WEATHER.	OBSERVER.
	Inches.	Millimeters.	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	Up'er 0—10.	Low'r 0—10.	Upper. From—	Lower. From—	Inches.	Millimeters.		
San José	26.19	665.2			68.0	20.0	91	NE			2					Inap.	Inap.		Federico Maison.

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

DANISH SERIES.

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

Copenhagen	29.66	753.3	29.71	754.5	52.5	11.4	97	SW			2		10					Foggy	
Fanöe	29.59	751.5	29.61	752.0	52.2	11.2	97	SW			4		10						
Godthaab, (Greenland)	29.45	748.1	29.50	749.2	24.1	—4.4	86	NE			4		8						
Stykkisholm, (Iceland)	29.58	751.4	29.63	752.5	23.2	—4.9	95	NE			8		5					Snowing	
Thorshavn, (Farõe)	29.27	743.5	29.31	744.4	39.9	4.4	80	NW			2		3						
Vestervig	29.40	746.7	29.57	751.0	51.1	10.6	95	SW			4		8						

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

FRENCH SERIES.

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

Alençon, Normal School	29.34	745.3	29.89	759.3	53.6	12	87	SW			1		10			0.08	2.	Covered	Collignon, Director.
Amiens, Normal School	29.67	753.6	29.78	756.4	56.1	13.4	91	SW			2		10			0.031	0.8	Covered	Bonvarne, Director.
Avignon, Normal School	30.04	762.9	30.11	764.9	59.9	15.5	78	SE			3		10		S			Light rain	Mr. Giraud, Director.
Bar-sur-Seine	29.35	745.4	29.90	759.4	64.2	17.9	56	SW			2		5n		SW	0	0	Cloudy	C. Saillard.
Beaumette Obs'y (Angers)	29.65	753.1	29.81	757.2	54.7	12.6	100	S	6.0	2.7			10		SW	0.669	17.0	Raining	Albert Oheux.
Beauvais	29.57	751.0	29.85	758.2	56.3	13.5	88	S			2		10		SSW	0.128	3.25	Covered	Normal School.
Besançon	29.13	740.0	29.98	761.4	63.0	17.2	64	SSW			4		5		SW	0	0	Cloudy	Normal School.
Bourg-en-Bresse	29.17	740.9	30.09	764.3	60.8	16	61	S			6		10cn		S	0	0	Covered	Normal School.
Bourges, Normal School	29.37	746.1	29.92	760.0	61.0	16.1	79	SW			2		5		NE	0	0	Cloudy	A. Wagner, Director.
Brest, Naval Observatory	29.45	747.9	29.66	753.4	56.3	13.5	88	SW			3		10		SW	0.404	10.25	Raining	The Staff.
Carcassonne, Normal School	29.67	753.5	30.08	763.9	65.3	18.5	74	E			2		1		E	0	0	Clear	Vateau, Director.
Caen	29.68	753.9	29.76	755.8	57.6	14.2	89	NE			3		10		NE	0.028	0.7	Covered	Normal School.
Chartres, Normal School	29.29	743.9	29.85	758.2	56.3	13.5	86	SW			2		10		ENE	0.24	6.	Covered	Lequin, Director.
Châlons-sur-Marne, N. Sch'l	29.57	751.0	29.88	759.0	61.2	16.2	67	S			2		8ck		S	0	0	Very cloudy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.57	725.6	29.88	758.9	66.9	19.4	45	S			3		2			0	0	Slightly cl'dy	Alluard, Director.
Commercy, Normal School	29.68	738.7	30.00	762.0	54.1	12.3	86	WSW			4		2		SSW	0	0	Slightly cl'dy	Dr. Goulet, Director.
Commune de Gréasque*	29.08	738.0	30.20	767.0	55.2	12.9	90	SE			2		10		SE			Light rain	M. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	29.63	752.6	29.84	758.0	55.6	13.1	98						10			0.118	3.0	Covered	Mouillot, Director.
Le Mans, Normal School	29.53	750.1	29.84	757.9	54.1	12.3	95	SW			6		8		S	0.264	6.7	Very cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.05	737.8	29.96	760.9	61.9	16.6	59	S			6		10		S	0	0	Covered	Pin, Director.
Lorient, Naval Observatory	29.68	753.8	29.78	756.3	57.6	14.2	93	SW			3		10		SW	0.272	6.9	Covered	T. Carré, Director.
Mâcon, Normal School	29.31	744.4	29.95	760.7	59.9	15.5	86	S			2		5		N	0	0	Cloudy	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	28.93	734.8	29.97	761.2	57.6	14.2	69	SSW					2		NNE	0	0	Slightly cl'dy	Normal School.
Nismes, Normal School	29.90	759.5	30.11	764.7	58.6	14.8	87	SE			2		5		N	0.08	2.	Cloudy	Boyer, Director.
Orleans, Normal School	29.46	748.2	29.84	757.9	53 0	12.8	83	S			2		8		W	0	0	Very cloudy	Bernard, Director.
Paris, Observatory	29.61	752.1	29.85	758.2	55.4	13.0	88	SSW			1		10k		SW	0.015	0.37	Covered	National Observatory.
Privas	29.05	737.8	30.11	764.8	57.2	14	73	S			6		5		S	0	0	Cloudy	Normal School
Rochefort, Naval Obs'y	29.85	758.3	29.89	759.1	57.9	14.4	86	S			3		2		S	0.51	13.	¾ covered	Lt. Decante, Director.
Rouen, Normal School	29.72	754.9	29.81	757.1	55.9	13.3	90	S			2		10			0.236	6.0	Covered	F. Lucard, Director.
Tarbes, Normal School																			T. Hugues, Director.
Villefranche	29.33	745.0	30.04	762.9	61.7	16.5	93	SE			4		5		Calm	0	0	Cloudy	Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.78	756.4	29.84	757.9	81.3	27.4										0	0		L'Abbé Marchési.
Marseilles, Observatory			30.12	765.1	57.4	14.1	91	SE			1		10			0.181	4.60	Rainy	The Staff.
Mont-Louis	24.89	632.2	30.21	767.2	48.9	9.4	60	SSW	24.2	10.83			4		SSW	0	0		Mr. Falguère.
Nice			30.19	766.8	62.8	17.1	67	SE					5		WSW	0	0	Cloudy	Dr. A. Niepce.
Paris, Montsouris Obs'y	29.57	751.0	29.84	758.0	55.2	12.9	88	SSW			3		10		SSW	0.028	0.7	Sprinkling	Marié Davy, Director.
Perpignan			29.95	760.7	70.7	21.5	50	SW	20.5	9.17			1		W	0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.	21.20	538.5			31.6	— 0.2		S			3		10					Cloudy	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.50	571 4			37.4	3.0		S			4		10			0	0	Cloudy	Gen'l de Nansouty.
Saint Maur, (near Paris)	29.09	754.1	29.85	758.3	56.5	13.6	85	S			2		10		SW	0.114	2.9	Raining	E. Renou.
Toulouse, Observatory	29.24	742.8	29.97	761.2	66.6	19.2	54	SE			3		7			0	0		The Staff.
Tours	29.67	753.9	29.87	758.6	56.5	13.6	89	SW			1		10		W	0	0		C. Marquet.
Versailles, (near Paris)			29.85	758.2	55.8	13.2	88	SW			1		10			0.059	1.51	Light rain	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.34	770.7	30.37	771.3	44.8	7.1	86	NE	2.5	1.1			0			0	0	Clear	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; for Montsouris, the barometer reduced to freezing but not to sea-level. At Mirecourt the cloud direction is apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,368 m., or 7,769.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

GERMAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Berlin	29.77	756.1	29.94	760.5	58.8	14.9	69	SW			1		4			0	0		Prof. Arndt.
Breslau	29.55	750.5	30.08	764.0	57.7	14.3	75	S			3		2			0	0		Royal University Obs'y.
Carlsruhe	29.56	750.7	29.98	761.4	61.3	16.3	57	SW			3		1			0	0		Albert Senz.
Cassel	29.36	745.8	29.97	761.2	58.1	14.5	82	SSW			1		7	SW		0	0		Dr. H. Möhl.
Crefeld	29.68	753.9	29.84	758.0	57.2	14.0	78	SE			4		9			0.12	3.		Director Lose.
Emden	29.72	755.0	29.76	755.9	53.8	12.1	96	SW			3		10			0.185	4.7		Prof. Prestel.
Frankfort on the Main	29.67	753.6	30.03	762.8	59.9	15.5		SSW			1		3			0	0		Physical Society.
Friedrichshafen	28.65	727.6	30.10	764.5	49.6	9.8	81	SW			1		0			0	0		M. Wilhelm.
Hamburg	29.75	755.7	29.82	757.5	56.5	13.6	87	SW			3		8k			0.075	1.9	Pleasant	Captain F. Hegemann.
Kiel	29.74	755.5	29.76	755.9	55.0	12.8	91	SW			2		10			0.233	5.93		Prof. G. Karsten.
Königsberg, (Prussia)	29.82	757.4	29.89	759.2	52.7	11.5	82	SW										Cloudy	Prof. E. Luther.
Köslin			29.87	758.7	53.8	12.1		SSW			4		4			0	0		H. Müller.
Leipsic, Observatory	29.59	751.6	30.01	762.2	61.2	16.2	69	SSW			5		6			0.028	0.7		Prof. Bruhns.
Memel, Naval School	29.80	757.0	29.85	758.2	50.5	10.3	89	SSW			6		10n					Foggy	Reinbrecht von Skalweit.
Neufahrwasser	29.90	759.4	29.91	759.8	53.6	12.0	84	SSW			3		9	WSW		0	0		A. Lothes.
Posen	29.74	755.4	30.03	762.7	56.3	13.5	69	WSW			2		6					Cloudy	Dr. Magener.
Strassburg Obs., (in Alsace	29.46	748.3	30.00	762.1	60.6	15.9	61	SSW			3		4	W		0	0		Dr. Schur.
Stuttgart	29.07	738.4	30.00	762.0	60.3	15.7	57	SW			1		2	W		0	0		Prof. Schoder.
Treves, (Trier)	29.30	744.3	29.82	757.5	59.2	15.1	72	SW			4		10			0	0	Foggy	Prof. Flesch.
Weissenburg, (Bavaria)	28.54	725.0	30.04	763.0	57.0	13.9	57	S	7	3			1c		S	0	0		Dr. Von Bebber.
Wustrow, Naval School	29.83	757.7	29.88	758.9	54.7	12.6	85	S			4		10					Covered	E. F. Schütz.
German Naval Series.																			

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

GREEK SERIES.

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

Athens	29.82	757.4	30.21	767.3	61.3	16.3		N										½ clear	Dr. J. F. J. Schmidt.

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

INDIAN SERIES.

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

Kurrachee	29.96	761.0	30.01	762.3	82.1	27.8	73	W	18.0?	8.0?			8			0	0	D. clouds	
Deesa	29.54	750.3	30.01	762.3	86.7	30.4	40	Calm					2	NW		0	0	D. clouds	
Bombay	29.94	760.4	29.97	761.3	83.6	28.7	73	NW	10.0	4.5			0			0	0	Misty	
Poona	27.94	709.5	29.94	760.4	80.1	26.7	47	E					1			0	0	D. clouds	
Lahore	29.26	743.2	30.01	762.3	77.9	25.5	39	NW	4.2	1.9			0			0	0	Blue sky	
Belgaum	27.44	696.9	29.99	761.8	74.3	23.5	45	E					0			0	0	Blue sky	
Bangalore																			
Roorkee	29.06	738.1	29.97	761.2	76.8	24.9	49	SE	1.8	0.8			0			0	0		
Agra	29.42	747.1	29.99	761.7	76.7	24.8	57	S								0	0		
Trichinopoly																			
Nagpur	28.95	735.4	30.00	762.0	79.1	26.2	39	Calm	1.0	0.4			0			0	0	Blue sky	
Madras																			
Lucknow	29.62	752.3	29.99	761.8	79.3	26.3	54	N	1.8	0.8			7	SE		0	0	D. clouds	
Allahabad	29.64	753.0	29.96	760.9	80.1	26.7	54	Calm	0.7	0.3			0			0	0	Blue sky	
Patna	29.79	756.6	29.97	761.3	81.5	27.5	47	W	1.1	0.5			0			0	0	Blue sky	
Hazaribagh	27.94	709.8	29.95	761.4	75.6	24.2	45	WNW	5.5	2.5			0			0	0	Blue sky	
Cuttack	29.90	759.4	29.98	761.5	80.0	26.7	86	Calm	0.5	0.2			0			0	0	Blue sky	
Calcutta (Alipore)	29.96	760.9	29.98	761.4	73.7	23.2	81	WSW	1.0	0.4			0			0	0	Blue sky	
Goalpara	29.55	750.7	29.95	760.7	75.4	24.1	73	Calm	2.1	0.9			0			0	0	Blue sky	
Chittagong	29.89	759.2	29.98	761.6	75.8	24.3	56	Calm					10			0	0	Overcast	
Sibsagar	29.64	752.9	29.99	761.6	72.0	22.2	88	ENE	1.1	0.5			8			0	0	D. clouds	
Rangoon																			
Jubbulpore	28.62	726.9	29.99	761.8	78.5	25.8	49	W	1.9	0.8			2	W		0	0	D. clouds	

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

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	OBSERVER.
Valdobbia	22.27	565.7	30.17	766.3	30.0	— 1.1	82	NE	.....	.....	2	.....	2	NW	.....	0	0	.....	Ab. Dom. Mongini.
Stelvio	22.25	565.1	30.20	767.0	31.6	— 0.2	.....	SSE	.. ...	.....	1	.....	0	.....	.....	0	0	.....	Signora Ernesta Manfredi.
Udine	29.78	756 3	30.19	766.9	56.3	13.5	43	SE	0.7	0.3	.....	.....	0	.....	.....	0	0	.....	Prof.Giovanni Clodig.
Padua	30.09	764.2	30.20	767.1	54.7	12.6	54	S	0	0	.....	.....	0	.....	.....	0	0	.....	Prof. Dott.Lorenzoni.
Vicenza	30.00	762.1	30.20	767.1	56.1	13.4	46	E	0	0	.....	.....	0	.....	.....	0	0	.....	Conte Alm.Da Schio.
Verona	29.97	761.1	30.19	766.9	60.6	15.9	55	SW	0	0	.....	.....	0	.....	.....	0	0	.....	Dott. B. Bertoncelli.
Bergamo	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Giuseppe Calza
Domedossola	29.17	740.9	30.22	767.5	52.0	11.1	63	S	.....	.....	4	.....	3	.....	.....	0	0	.....	Ab. Gio. Capelli.
Milan	29.70	754 3	30.23	767.8	55.4	13.0	.....	WSW	.....	.....	2	.....	2	WNW	.....	0	0	.....	Prof. Gio. Cantoni.
Pavia	29.87	758.8	30.23	767.8	48.6	9.2	81	SW	.....	.....	1	.....	9	SW	.....	0	0	.....	Prof. P. F. Denza.
Moncalieri	29.31	744.5	30.24	768.1	51.8	11.0	73	SE	0	0	.....	.....	0	.....	.....	0	0	.....	Prof. D. C. Bruno.
Mondovi	28.28	718.2	30.21	767.4	51.3	10.7	68	NW	.....	.....	2	.....	0	.....	.....	0	0	.....	Prof. L. Vassallo.
Porto Maurizio	29.98	761.6	30.21	767.3	61.0	16.1	56	E	0 7	0.3	.....	.....	2	.....	.....	0	0	.....	Prof. G. M. Garibaldi.
Genoa	30.03	762.8	30.20	767.1	60.4	15.8	69	NE	0.7	0.3	.....	.....	8	S	.....	0	0	.....	Dott. G Manzi.
Piacenza	29.97	761.3	30.23	767.9	51.8	11.0	73	NW	1.8	0.8	.....	.....	10	W	.....	0	0	.....	Prof. P. Pigorini.
Parma	29.91	759.6	30.23	767.8	57.0	13.9	55	WNW	.....	.....	2	.....	9	.....	.....	0	0	.....	Cav. F Meucci.
Florence	29.97	761.1	30.23	767.8	58.5	14.7	49	W	.....	.....	2	.....	0	.....	.....	0	0	.....	Prof. P. Monte.
Leghorn	30.11	764.9	30.20	767.1	62.6	17.0	63	SW	4.3	1.9	.....	.....	8	W	.....	0	0	.....	Prof. L. Toscani.
Siena	28.98	736.1	30.20	767.1	58.3	14.6	49	NW	0	0	.....	.....	0	.....	.....	0	0	.....	Prof. P. Serpieri.
Urbino	28.67	728.3	30.26	768.5	52.9	11.6	67	NE	.....	.....	2	.....	1	.....	.....	0	0	.....	Prof. Luigi Guidi.
Pesaro	30.19	766.7	30.24	768.0	52.7	11.5	74	NE	19.2	8.6	.....	.....	0	.....	.....	0	0	.....	Prof. F. DeBosis.
Ancona	30.11	764.9	30.23	767.7	56.5	13.6	73	Calm	.....	.....	0	.....	2	.....	.....	0	0	.....	Avv. P. Ponticelli.
Grosseto	30.11	764.7	30.22	767.6	62.2	16.8	60	WNW	.....	.....	2	.....	4	SE	.....	0	0	.....	Prof. P. A Secchi.
Rome	30.03	762.7	30.21	767.2	60.8	16.0	52	N	0	0	.....	.....	0	.....	.....	0	0	.....	Prof. L. Palmieri.
Naples, O. U	30.03	762.7	30.23	767.9	64.0	17.8	46	SW	.....	.....	4	.....	1	E	.....	0	0	.....	Prof. C. De Giorgi.
Lecce	.....	.....	.....	.....	60.4	15.8	67	ENE	6.3	2.8	.....	.....	3	.....	.....	0	0	.....	Prof. F. D. Conti.
Cosenza	29.35	745.5	30.26	768.5	58.3	14.6	70	NE	0.7	0.3	.....	.....	2	.....	.....	0	0	.....	Prof. A. Pacinotti.
Cagliari	29.93	760.3	30.13	765.2	65.1	18.4	64	SW	.....	.....	2	.....	2	N	.....	0	0	.....	Prof. F. Cañero.
Riposto, (Sicily)	30.11	764.8	30.16	766.0	59.5	15.3	75	NW	.....	.....	2	.....	7	SE	.....	0	0	.....	Prof. G. Cacciatore.
Palermo	29.89	759.3	30.15	765.8	62.1	16.7	60	NE	5.6	2.5	.....	.....	2	.....	.....	0	0	.....	Prof. A. Pagani.
Caltanissetta	28.19	716.0	30.15	765.7	58.5	14.7	47	N	.....	.....	1	.....	0	.....	.....	0	0	.....	Prof. V. Giuliano.
Syracuse	30.08	764.1	30.16	766.0	64.4	18.0	69	NW	.....	.....	2	.....	9	SE	.....	0	0	.....	
SUB-SERIES.																			
Naples, S. R.	29.68	753.8	30.23	767.9	61.9	16.6	48	SW	0	0	.....	.....	0	.....	.....	0	0	.....	Prof. F. Brioschi.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give the wind-force on the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,548.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,350.3 ft.; Bergamo, 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Siena, 348.5 m., or 1,143.3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft.

JAPANESE SERIES.

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

Tokei (Yeddo)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	The Observatory.
Tokei (Yeddo) University	29.95	760.7	30.05	763.2	46.5	8.1	66	NW	7	3.1	.....	.....	1ks	.....	.....	0	0	Fair	Prof. P. V. Veeder.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

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

Aguascallentes	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	I. N. Marin, M. D.
Córdoba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	C. Peña, M. D.
Cuernavaca	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	L. Castillo, A. E.
Guadalajara	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. L. Perez.
Guanajuato	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. V. Fernandez.
Leon	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. M. Leal.
Mexico	29.12	587.2	30.27	768.8	50.4	10.2	86	Calm	0	0	.....	0	0	.....	.....	0	0	Fair	Central Observatory.
Orizaba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	N. N.
Orizaba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	I. Orozco, M. D.
Pabellon, (Aguascalts)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. V. de Leon, M. E.
Puebla	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. B. Gonzalez.
Toluca	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. C. Velazquez.
Tlacotalpam	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. F. R. Bayly.
San Luis Potosí	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	G. Barroeta, M. D.
Vera-Cruz	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. J. Rossell.
Zacatecas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. A. Bonilla, M. E.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The elevation of Aguascallentes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594,2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,230 m., or 7,312.9 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.3 ft.; San Luis Potosí, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,493 m., or 8,188.6 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

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

Flushing	29.78	756.4	29.78	756.4	54.3	12.4	.....	S	.....	.....	4	.....	.....	.....	.....	0.063	1.6	.....	
Groningen	29.70	754.3	29.75	755.7	54.7	12.6	.....	SSW	.....	.....	4	.....	.....	.....	.....	0.165	4.2	.....	
Helder	29.69	755.1	29.69	754.1	54.3	12.4	.....	SSW	.....	.....	4	.....	.....	.....	.....	0.663	1.6	.....	
Hellevoetsluis	.....	.....	29.76	755.8	54.7	12.6	93	S	.....	.....	5	.....	.....	.....	.....	.....	.....	.....	H. v d Brink.
Utrecht	29.74	755.5	29.79	756.7	54.3	12.4	91	SSW	.....	.....	5	.....	10	.....	.....	0.102	2.6	Dull	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

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

NORWEGIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum't'al error and temperature. Inches.	Barometer. Corrected for instrum't'al error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	29.06	738.2	29.12	739.6	47.5	8.6	81	S	35.3	15.8	.....	.....	10	.....	.....	0.358	9.1	Raining	
Brönö	29.06	738.2	29.10	739.2	42.8	6.0	85	SW	18	8	.....	.....	10	.....	.....	.....	.....	Raining	
Christiania	29.15	740.3	29.29	744.0	45.1	7.3	94	SW	0	0	.....	.....	10	.....	.....	0	0	Light fog	
Tromsö	28.99	736.4	29.04	737.5	32.4	0.2	85	Calm	0	0	.....	.....	9	.....	.....	0.07	1.2	.....	

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

PORTUGUESE SERIES.

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

Angra, (Azores)	30.14	765.5	30.33	770.4	60.4	15.8	81	N	8.1	3.6	.....	.....	3	.....	.....	0	0	.....	Dr. J. A. Sampaio.
Campo Major	29.01	736.9	30.04	763.0	59.9	15.5	71	Calm	0	0	.....	.....	10	SSW	.....	0.051	1.3	Light rain	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.03	762.8	30.12	765.0	72.0	22.2	59	WSW	6.9	3.1	.....	.....	1	.....	.....	0.051	1.3	.....	Capt. D. A. da Cunha.
Lisbon, Observatory	29.69	754.2	30.06	763.4	60.1	15.6	84	SW	7.4	3.3	.....	.....	0?	.....	.....	0.024	0.6	Light rain?	The Staff.
Ponta Delgada, (Azores)	30.26	768.6	30.33	770.4	64.4	18.0	55	N	3.8	1.7	.....	.....	3	.....	.....	0.016	0.4	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

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

Naval Series. Vessels.	Sea or swell. Height scale 0–9	Sea or swell. Direction from—		
S. S. India.	.....	.....	.....	A. D. Pedroso, Com'd't; Lt. S. A. P. de Mirando
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....

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

RUSSIAN SERIES.

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

Warsaw	29.64	752.9	30.07	763.6	54.1	12.3	65	S	11	5	.....	.....	3	.....	.....	.....	.....	.....	Astronomical Obs.
Wilna	29.54	750.2	29.96	760.9	50.5	10.3	79	SSW	7	3	.....	.....	10	.....	.....	.....	.....	Raining	Astronomical Obs.
Dorpat	29.42	747.3	29.67	753.5	47.8	8.8	96	SSW	9	4	.....	.....	10	.....	.....	.....	.....	.....	Prof. Dr. Weihrauch.
St. Petersburg	29.54	750.3	29.66	750.7	47.7	8.7	82	WSW	16	7	.....	.....	10	.....	.....	.....	.....	.....	Central Physical Obs.
Knopio	28.96	735.5	29.28	743.7	41.0	5.0	84	W	27	12	.....	.....	10	.....	.....	Blank	Blank	.....	Ch. Forsten.
Kieff	29.53	750.1	30.18	766.5	51.6	10.9	92	SW	7	3	.....	.....	3	.....	.....	.....	.....	.....	Physical Cabinet.
Nikolaiev	30.32	770.1	30.39	771.9	47.8	8.8	73	N	0	0	.....	.....	0	.....	.....	.....	.....	.....	Kurdakof.
Kertch	30.32	770.1	30.34	770.6	46.2	7.9	81	NE	9	4	.....	.....	7	.....	.....	.....	.....	.....	Lagorio.
Moscow	29.40	746.8	29.96	760.9	46.2	7.9	85	SSW	7	3	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Lugan	30.04	763.0	30.24	768.2	49.1	9.5	59	WSW	9	4	.....	.....	5	.....	.....	.....	.....	.....	Meteorological Obs.
Archangel	29.05	737.8	29.07	738.3	39.9	4.4	97	SSW	22	10	.....	.....	10	.....	.....	.....	.....	Raining	Ogorodnikof.
Tiflis	28.81	731.7	30.22	767.5	61.9	16.6	30	NNW	4	2	.....	.....	7	.....	.....	.....	.....	.....	Physical Observatory.
Astrakhan	30.33	770.4	30.25	768.3	41.5	5.3	65	NW	4	2	.....	.....	10	.....	.....	.....	.....	.....	Sebastianof.
Kasan	29.76	755.9	30.04	763.0	35.2	1.8	84	SSW	4	2	.....	.....	9	.....	.....	.....	.....	.....	Physical Cabinet.
Orenburg	29.76	756.0	30.16	766.0	28.0	— 2.2	69	WSW	13	6	.....	.....	10	.....	.....	.....	.....	Snowing	Tschernischef.
Ekaterinburg	29.05	737.8	30.02	762.6	34.0	1.1	48	SW	7	3	.....	.....	6	.....	.....	.....	.....	.....	Meteorological Obs.
Nukuss	29.87	758.6	30.10	764.6	46.0	7.8	83	WNW	4	2	.....	.....	2	.....	.....	.....	.....	.....	
Kasaly	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Bobrof.
Tashkend	28.90	726.4	30.35	771.0	46.0	7.8	94	N	2	1	.....	.....	10	.....	.....	.....	.....	Raining	Michelson.
Barnaul	29.78	756.5	30.34	770.5	29.7	— 1.3	86	SW	4	2	.....	.....	10	.....	.....	.....	.....	Snowing	Meteorological Obs.
Yeniseisk	29.90	759.5	30.24	768.2	27.3	— 2.6	96	Calm	0	0	.....	.....	10	.....	.....	Blank	Blank	.....	Marks.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Usolzef.
Oorga	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Mossin.
Peking, (China)	30.13	765.4	30.28	769.0	44.1	6.7	42	Calm	0	0	.....	.....	9	.....	.....	.....	.....	.....	Physical Observatory.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nikolaievsk, on the Amoor	.....	.....	.....	.....	8.2	—13.2	80	W	22	10	.....	.....	10s	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Ekaterinburg, 306.4? m., or 1,005.2? ft.; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft.

SPANISH SERIES.

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

Barcelona, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Rave, Director.
Bilbao, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Manuel de Naveran
Burgos, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Domingo Martin y Perez.
Madrid, Royal Observatory	27.79	705.9	29.99	761.7	63.7	17.6	64	S	0.8	0.3?	.....	1	8	NW	.....	0	0	Clouds	The Staff.
Murcia, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Olayo Diaz, Director.
Santiago, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.86	758.4	29.93	760.1	78.1	25.6	92	Calm	0	0	.....	.....	8s;n	.....	.....	0.776	19.7	Raining	Benito Vines, S. J.
San Fernando, Naval Obs'y.	29.92	760.1	30.02	762.5	71.2	21.8	62	ESE	8.3	3.7	.....	0	9	.....	SE	0.095	2.4	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.	.....	.....	29.89	759.1	81.0	27.2	85	SE	0	0	.....	1c	2k	SE	SE	0.030	0.75	Clear	Leonardo de Tejeda, Chief of Engineers.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. m. instead of 8:19 a. m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.6 ft.

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

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

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

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

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

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

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

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

SWEDISH SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Low'r 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.09	738.9	29.13	739.9	34.2	1.2	.....	W	.....	.....	2	.....	2	.....	.....	0.354	9.0	.....	
Umea	29.17	741.0	29.22	742.3	39.6	4.2	80	W	.....	.....	2	.....	6	.....	.....	0.331	8.4	.....	
Hernosand	29.22	742.2	29.27	743.5	41.2	5.1	74	SW	.....	.....	2	.....	8	.....	.....	0.026	0.7	Raining	
Stockholm	29.23	742.4	29.41	746.9	48.6	9.2	95	SSW	.....	.....	4	.....	10	.....	.....	0.067	1.7	Raining	
Wisby	29.53	750.0	29.59	751.5	50.4	10.2	95	WSW	.....	.....	6	.....	10	.....	.....	0.098	2.5	.....	
Sub-Series.																			
Upsala	29.30	744.3	29.38	746.2	46.8	8.2	99	S	11.6	5.2	.....	.....	10	.....	.....	0.036	0.92	.....	Dr. Hildebrandsson.

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

SWISS SERIES.

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

Geneva	28.65	727.6	30.08	763.9	52.7	11.5	73	N	.....	.....	1	.....	1	.....	.....	0	0	Clear	The Observatory.
Zurich	28.45	722.0	30.09	764.2	53.1	11.7	70	W	.....	.....	1	.....	0	.....	.....	0	0	Clear	The Observatory.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—For Geneva the corresponding departures from the normal values are: Barometer, +1.4 mm; Thermometer, +3.1 cent.; Relative Humidity, —2 per cent.

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

TURKISH SERIES.

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

Constantinople	.....	.....	30.23	767.7	58.1	14.5	89	NNE	9	4.0	.....	.....	9	.....	NE	0	0	.....	The Observatory.
Fao, (Persian Gulf)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salonica	.....	.....	30.31	769.8	64.0	17.8	.....	NW	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	B. Stefanides.
Valona	.....	.....	30.21	767.2	62.2	16.8	.....	SW	.....	.....	1	.....	10	.....	.....	.....	.....	.....	A. Bertrand.
Varna	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	5	.....	.....	0	0	Cloudy	Imperial Observatory.
Sub-Series.																			
Beirut,(Syria,) Lee Obs'y	29.94	760.5	30.06	763.5	72.9	22.7	54	NW	.....	.....	2	.....	3k	.....	SW	0	0	D. clouds	Prof. C. V. A. Van Dyck

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

CANADIAN SERIES.

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

Bathurst, N. B	30.10	764.5	30.17	766.3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0	.....	Hon. J. Ferguson.
Brockville, Ontario	.....	.....	30.44	773.2	32	0.0	.....	SW	6	2.7	.....	0	0	.....	.....	0	0	Clear	W. R. Bigg.
*Chatham, N. B	.....	.....	30.20	767.1	23	— 5.0	93	SW	5	2.2	.....	5ck	2ks	NW	NW	0	0	Fair	G. A. Blair.
Charlottetown, P. E. Island	.....	.....	30.21	767.3	26	— 3.3	64	NW	13	5.8	.....	0	5s	.....	Calm	Inap.	Inap.	Fair	H. J. Cundall, C. E.
Cornwall, Ontario	30.18	766.6	30.39	771.9	30.8	— 0.7	96	SW	.....	.....	2	0	0	.....	.....	0	0	Bright	James Smith, M. A.
Dalhousie, N. B	30.12	765.0	30.15	765.8	..	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0	Gloomy	H. A. Johnson.
Esquimault, B. C	30.01	762.2	30.06	763.5	45.3	7.4	96	NE	.....	.....	.....	3ck	0	.....	.....	†0.31	† 7.9	Cloudy	W. H. Bevis.
*Father Point, Quebec	.....	.....	30.12	765.0	29	— 1.7	87	SW	18	8.0	.....	2k	8s	W	W	0	0	Cloudy	J. McWilliams.
Fredericton, N. B	30.26	768.6	30.33	770.4	29.0	— 1.7	77	W	1.0	0.4	.....	0	0	.....	.....	0	0	Fair	Prof. Harrison.
*Fort Garry, Manitoba	.....	.....	29.63	752.3	26	— 3.3	88	S	13	5.8	.....	2k	2ks	SW	SW	0	0	Fair	James Stewart.
Goderich, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	H. J. Strang, M. A.
Granton, Ontario	29.27	743.4	30.46	773.7	19.3	— 7.1	96	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	James Grant.
*Halifax, N. S	30.13	765.3	30.27	768.8	28	— 2.2	77	NW	14	6.3	.....	0	0	.....	.....	0.113	2.87	Clear	F. Allison, M. A.
Hamilton, Ontario	30.10	764.5	30.50	774.7	26.2	— 3.2	73	W	.....	.....	1	0	.....	.....	.....	0	0	Clear	Geo. Dickson, M. A
Heart's Content, N. F	29.62	752.3	29.65	753.1	31	— 0.6	57	NW	.....	.....	7	2k	2ks	NW	NW	0.97	24.6	Fine	E. Weedon.
*Kingston, Ontario	30.13	765.3	30.48	774.2	32	0.0	89	W	2	0.9	.....	0	0	.....	.....	0	0	Clear	S. Woods, M. A.
Little Glace Bay, N. S	30.03	762.7	30.07	764.0	31.5	— 0.3	95	N	8	3.6	.....	10k	.....	N	.....	0.80	20.3	Threatening	C. H. Rigby.
*Montreal, Quebec	30.17	766.3	30.36	771.6	32	0.0	87	SW	16	7.2	.....	0	2ks	.....	W	0	0	Clear	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.64	752.8	30.36	771.1	36	2.2	80	W	8	3.6	.....	2cs	0	W	.....	0	0	Fair	Rev. R. Mosley.
Peterboro, Ontario	29.66	753.4	30.47	773.9	17.5	— 8.1	62	W	.....	.....	.....	.....	10n	.....	.....	0	0	Cloudy	J. F. Jeffers, B. A.
Port Dover, Ontario	29.72	754.9	30.46	773.7	24	— 4.4	100	NW	5	2.2	.....	0	0	.....	.....	0	0	Clear	H. Morgan.
Port Hastings, N. S	30.10	764.5	30.14	765.5	30.7	— 0.7	.....	N	15	6.7	.....	.....	.....	.....	.....	0	0	Fine	Peter Grant.
Port Stanley, Ontario	29.74	755.4	30.44	773.2	22	— 5.6	88	N	5	2.2	.....	2k	0	S	.....	0	0	Clear	M. Payne.
*Quebec, Quebec	29.97	761.2	30.31	769.9	29	— 1.7	89	SW	5	2.2	.....	.....	10n	.....	SW	0	0	Cloudy	Capt. Ashe, R. N
*Rockliffe, Ontario	29.86	758.4	30.35	770.9	21	— 6.1	97	SW	6	2.7	.....	.....	Fog	.....	.....	0	0	Foggy	W. H. McIntyre.
St. John, N. B	30.17	766.3	30.35	770.9	25	— 3.9	87	SW	2	0.9	.....	0	0	.....	.....	0	0	Clear	G. Murdock, C. E.
*Saugeen, Ontario	29.65	753.1	30.39	771.9	25	— 3.9	98	SW	1	0.4	.....	0	0	.....	.....	0	0	Clear	K. Stewart.
Stayner, Ontario	.....	.....	30.42	772.7	21	— 6.1	80	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	R. J. Cole.
Stratford, Ontario	29.07	738.4	30.46	773.7	19.2	— 7.1	94	Calm	0	0	.....	0	.....	.....	.....	0	0	Fine	C. J. MacGregor, M. A.
*Sydney, C. B	30.06	763.5	30.09	764.3	31	— 0.6	75	W	16	7.2	.....	.....	8ks	.....	NW	0.84	21.3	Cloudy	T. C. Hill.
*Toronto, Ontario	30.08	764.0	30.49	774.4	25	— 3.9	86	W	1	0.4	.....	0	0	.....	.....	0	0	Clear	Magnetic Observatory.
Windsor, N. S	30.20	767.1	30.30	769.6	27.5	— 2.5	82	W	10	4.5	.....	3k	0	.....	.....	0	0	Clear	Prof. John E. Oram.
Woodstock, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Montgomery.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	32.0	0.0	90	W	.....	.....	.....	2k	5s	.....	.....	Inap.	Inap.	Stormy	John Delany
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

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

UNITED STATES SERIES.

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

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	30.25	768.3	30.50	774.7	32	0.0	79	NW	3	1.3		0	0			0.03	0.8	Clear.	
Alpena, Michigan	29.64	752.8	30.34	770.6	27	— 2.8	77	SW	7	3.1		0	0			0	0	Clear.	
Atlantic City, New Jersey	30.51	774.9	30.53	775.4	33	0.6	69	NW	4	1.8		0	0			0	0	Clear.	
Augusta, Georgia	30.21	767.3	30.40	772.1	41	5.0	52	E	8	3.6		0	8s		SE	0	0	Fair	
Baltimore, Maryland	30.50	774.7	30.55	776.0	38	3.3	54	NW	2	0.9		2c	Fog	Calm		0	0	Foggy	
Barnegat, New Jersey	30.50	774.7	30.52	775.2	34	1.1	74	NW	9	4.0		0	0			0	0	Clear.	
Bismarck, Dakota	27.85	707.4	29.52	749.8	37	2.8	80	NW	10	4.5			10s		Calm	0	0	Cloudy	
Boise City, Idaho	27.38	695.4	30.10	764.5	36	2.2	80	Calm	0	0		0	5s		Calm	0.04	1.0	Fair	
Boston, Massachusetts	30.29	769.4	30.46	773.7	32	0.0	89	SW	2	0.9		0	Sm'e			Inap	Inap.	Clear.	
Brackettville, Texas	28.73	729.7	29.77	756.1	45	7.2	76	Calm	0	0		0	0			0	0	Clear	
Breckenridge, Minnesota	28.74	730.0	29.76	755.9	29	— 1.7	89	S	18	8.0			10s		Calm	0	0	Cloudy	
Brownsville, Texas	29.86	758.4	29.92	760.0	57	13.9	87	Calm	0	0			10s		SE	0	0	Cloudy	
Buffalo, New York	29.69	754.1	30.45	773.4	34.0	1.1	79	Calm	0	0		5k	Sm'e	SW	SE	0	0	Fair	
Burlington, Vermont	30.15	765.8	30.43	772.9	33	0.6	80	S	6	2.7		0	0			0	0	Clear	
Cairo, Illinois	29.80	756.9	30.21	767.3	35	1.7	70	E	4	1.8			10s		Calm	0	0	Cloudy	
Camp Grant, Arizona	25.18	639.6	29.98	761.5	59	15.0	23	NW			2	0	0			0	0	Clear.	
Camp Verde, Arizona	26.84	681.7	30.33	770.4	44	6.7	45	NW				0	0			0	0	Clear.	
Campo, California																			
Cape Hatteras, N. Carolina	30.32	770.1	30.33	770.4	58	14.4	58	NE	20	8.9		8k	0	NE		0	0	Fair	
Cape Henry, Virginia	30.45	773.4	30.48	774.2	44	6.7	68	NE	10	4.5		0	5s		NE	0	0	Fair	
Cape Lookout, N. Carolina	30.38	771.6	30.39	771.9	51	10.6	79	NE	27	12.1		0	2ks		NE	0	0	Fair	
Cape May, New Jersey	30.51	774.9	30.54	775.7	36	2.2	61	N	8	3.6		0	0			0	0	Clear	
Charleston, South Carolina	30.29	769.4	30.36	771.1	46	7.8	69	N	13	5.8			10s		N	0	0	Cloudy	
Cheyenne, Wyoming	23.84	605.5	29.78	756.4	27	— 2.8	100	NW	20	8.9		8ck	2s	NW	Calm	0.01	0.3	Cloudy	
Chicago, Illinois	29.52	749.8	30.25	768.3	32	0.0	59	SW	8	3.6		5c	2s	SW	Calm	0	0	Fair	
Cincinnati, Ohio	29.61	752.1	30.29	769.4	34	1.1	70	SE	3	1.3		Haze	Fog	Calm	SE	0	0	Clear	
Cleveland, Ohio	29.68	753.9	30.46	773.7	26	— 3.3	76	E	6	2.7		Haze	0	Calm		0	0	Fair	
Concho, Texas	27.97	710.4	29.70	754.4	45	7.2	60	S	20	8.9		0	0			0	0	Clear	
Corsicana, Texas	29.44	747.8	29.92	760.0	41	5.0	91	SE	5	2.2		2ck	2s	W	Calm	0	0	Fair	
Davenport, Iowa	29.50	749.3	30.17	766.3	32	0.0	79	SE	4	1.8			10s		Calm	0	0	Cloudy	
Denison, Texas	29.11	739.4	29.92	760.0	41	5.0	73	SE	12	5.4			10ks		SE	0.01	0.3	Cloudy	
Denver, Colorado	24.57	624.1	29.79	756.7	36	2.2	52	NW	15	6.7			10s		Calm	0	0	Cloudy	
Detroit, Michigan	29.66	753.4	30.37	771.4	31	— 0.6	79	Calm	0	0		0	Sm'e		Calm	0	0	Clear	
Dodge City, Kansas	27.06	687.3	29.35	745.5	35	1.7	79	S	10	4.5		0	8s		S	0	0	Cloudy	
Dubuque, Iowa	29.41	747.0	30.15	765.8	30	— 1.1	89	S	7	3.1			10s			0	0	Cloudy	
Duluth, Minnesota	29.25	742.9	29.95	760.7	30	— 1.1	68	NW	6	2.7		Haze	8s		Calm	0	0	Fair	
Eagle Pass, Texas	29.10	739.1	29.85	758.2	42	5.6	83	SE	2	0.9		0	0			0	0	Clear	
Eastport, Maine	30.27	768.8	30.34	770.6	30	— 1.1	68	W	5	2.2		Haze	2s		W	0	0	Fair	
Erie, Pennsylvania	29.68	753.9	30.44	773.2	31	— 0.6	68	S	8	3.6		0	Sm'e			0	0	Clear	
Escanaba, Michigan	29.55	750.6	30.25	768.3	25	— 3.9	75	SW	10	4.5		2k	0	SW		0	0	Clear	
Florence, Arizona	28.46	722.9	30.06	763.5	40	4.4	32	Calm	0	0		0	0			0	0	Clear	
Fort Bayard, New Mexico	23.95	608.3	29.95	760.7	38	3.3	38	SW	2	0.9		0	0			0	0	Clear	
Fort Craig, New Mexico	25.41	645.4			35	1.7	70	NW	16	7.2		0	0			0	0	Clear	
Fort Gibson, Indian Ter	29.38	746.2	29.93	760.2	38	3.3	63	S	11	4.9			10s		SW	0	0	Cloudy	
Fort Griffin, Texas	28.53	724.6	29.81	757.2	46	7.8	61	SW	6	2.7		0	2s		Calm	0	0	Fair	
Fort St. Michael, Alaska																			
Fort Sill, Indian Territory	28.55	725.2	29.67	753.6	39	3.9	91	S	20	8.9			10s		SW	0	0	Cloudy	
Galveston, Texas	29.87	758.7	29.91	759.7	63	17.2	94	SE	14	6.3			10s		SE	0	0	Threatening	
Grand Haven, Michigan	29.63	752.6	30.32	770.1	27	— 2.8	77	SE	11	4.9		1k	0	S		0	0	Clear	
Indianapolis, Indiana	29.44	747.8	30.27	768.8	31	— 0.6	79	E	4	1.8		8cs	Sm'e			0	0	Fair	
Indianola, Texas	29.88	758.9	29.91	759.7	59	15.0	88	E	9	4.0			Fog		Calm	0	0	Foggy	
Jacksboro, Texas																			
Jacksonville, Florida	30.12	765.0	30.15	765.8	59	15.0	87	N	14	6.3			10n		N	0.20	5.1	Light rain	
Keokuk, Iowa	29.46	748.3	30.10	764.5	32	0.0	89	SE	8	3.6			10s		Calm	0	0	Cloudy	
Key West, Florida	29.88	758.9	29.92	760.0	79.0	26.1	82	NE	10	4.5		5c	0	SW		0	0	Cloudy	
Kittyhawk, North Carolina	30.44	773.2	30.46	773.7	52	11.1	72	NE	24	10.7		0	1s		NE	0	0	Clear	
Knoxville, Tennessee	29.31	744.5	30.38	771.6	31	— 0.6	79	Calm	0	0			Fog		Calm	0	0	Dense fog	
La Crosse, Wisconsin	29.33	745.0	30.10	764.5	29	— 1.7	78	S	5	2.2		Haze	Haze			0	0	Hazy	
La Mesilla, New Mexico	25.96	659.4	30.11	764.8	35.5	1.9	32	Calm	0	0		0	0			0	0	Clear	
Laredo, Texas					46	7.8	85	Calm	0	0		5k	0	Calm		0	0	Fair	
Leavenworth, Kansas	29.08	738.6	29.94	760.5	35	1.7	80	SE	9	4.0			10s		Calm	0	0	Cloudy	
Los Angeles, California	29.75	755.6	30.09	764.3	54	12.2	79	N	5	2.2		0	0			0	0	Clear	
Louisville, Kentucky	29.69	754.1	30.28	769.1	36	2.2	80	E	4	1.8		5c	Fog	SE	Calm	0	0	Fair	
Lynchburg, Virginia	29.84	757.9	30.37	776.5	37	2.8	63	Calm	0	0		0	0			0	0	Clear	
Maricopa Wells, Arizona					35	1.7	52	N				0	0			0	0	Clear	
Marquette, Michigan	29.36	745.7	30.10	764.5	27	— 2.8	67	W	4	1.8		0	0			0	0	Clear	
Mason, Texas	28.22	716.8	29.98	761.5	47	8.3	70	Calm	0	0		0	2s		Calm	0	0	Clear	
Memphis, Tennessee	29.82	757.4	30.16	766.1	33	0.6	79	NE	4	1.8		5c	Sm'e	SW	Calm	0	0	Fair	
Milwaukee, Wisconsin	29.57	751.1	30.30	769.6	26	— 3.3	76	S	8	3.6		8cs	0	W		0	0	Fair	
Mobile, Alabama	30.07	763.8	30.11	764.8	49	9.4	93	N	4	1.8			10s		Calm	0	0	Threatening	
Montgomery, Alabama	29.97	761.2	30.21	767.3	48.5	9.2	62	E	13	5.8		10k	0	S		0	0	Cloudy	
Morgantown, West Virginia	29.32	744.7	30.44	773.2	30	— 1.1	73	Calm	0	0			Fog			0	0	Foggy	
Mt. Washington, N. H.	23.80	604.6	30.16	766.1	10	—12.2	79	NW	78	34.9		0	0			0.02	0.5	Clear	
Nashville, Tennessee	29.69	754.1	30.25	768.3	33	0.6	79	E	3	1.3		2c	0	Calm		0	0	Clear	
New Haven, Connecticut	30.39	771.9	30.51	774.9	35	1.7	70	W	5	2.2		Haze	Haze			0	0	Clear	
New London, Connecticut	30.46	773.7	30.51	774.9	33	0.6	79	W	5	2.2		0	Sm'e		Calm	0.02	0.5	Clear	
New Orleans, Louisiana	29.98	761.5	30.05	763.3	51	10.6	83	E	8	3.6		0	0			0	0	Clear	
Newport, Rhode Island	30.43	772.9	30.48	774.2	37	2.8	71	W	4	1.8		0	0			Inap.	Inap.	Clear	
New York, New York	30.36	771.1	30.55	776.0	37	2.8	62	NW	4	1.8		0	Fog			0	0	Clear	
Norfolk, Virginia	30.46	773.7	30.52	775.2	42	5.6	74	Calm	0	0		5ck	Haze	E		0	0	Fair	
North Platte, Nebraska	26.77	680.0	29.36	745.7	31	— 0.6	94	NE	5	2.2			10n		Calm	0.04	1.0	Light snow	
Olympia, Washington Ter.	30.06	763.5	30.09	764.3	47	8.3	92	S	6	2.7			10n		Calm	1.18	30.0	Light rain	
Omaha, Nebraska	28.71	729.2	29.80	756.9	38	3.3	90	SE	15	6.7			10s		Calm	0	0	Threatening	
Oswego, New York	30.16	766.1	30.50	774.7	35	1.7	70	Calm	0	0		0	0			0	0	Clear	
Pembina, Dakota	28.82	732.0	29.67	753.6	29	— 1.7	78	S	12	5.4			10s		Calm	0	0	Cloudy	
Philadelphia, Pennsylvania	30.50	774.7	30.56	776.2	34	1.1	69	NW	12	5.4		0	Fog		Calm	0	0	Clear	
Phœnix, Arizona					40	4.4	40	Calm				0	0			0	0	Clear	
Pike's Peak, Colorado	17.40	442.0	29.65	752.1	0	—17.8	100	N	37	16.5			10n		Calm	0.04	1.0	Light snow	
Pioche, Nevada	24.16	613.6	29.93	760.2	32	0.0	59	N	10	4.5		0	0			0	0	Clear	
Pittsburg, Pennsylvania	29.58	751.3	30.45	773.4	26	— 3.3	88	E	4	1.8		0	Fog		E	0	0	Clear	
Port Huron, Michigan	29.69	754.1	30.40	772.1	26	— 3.3	88	Calm	0	0		0	0			0	0	Clear	
Portland, Maine	30.35	770.9	30.40	772.1	35	1.7	70	SW	1	0.4		0	Fog			0	0	Clear	
Portland, Oregon	30.14	765.5	30.24	768.1	52	11.1	79	S	1	0.4			10s		Calm	0.44	11.2	Cloudy	
Prescott, Arizona	24.85	631.2	30.21	767.3	32	0.0	59	Calm				0	0			0	0	Clear	
Punta Rassa, Florida	29.97	761.2	29.98	761.5	75	23.9	85	NE	12	5.4		0	8ks		Calm	0	0	Cloudy	
Red Bluff, California	29.90	759.4	30.27	768.8	49	9.4	85	N	6	2.7		0	0			0	0	Clear	
Rochester, New York	29.83	757.7	30.49	774.4	29	— 1.7	89	SW	6	2.7		0	0			0	0	Clear	
Roseburg, Oregon	29.69	754.1	30.27	768.8	48.5	9.2	96	Calm	0	0			10s		Calm	0.17	4.3	Cloudy	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Sacramento, California	30.15	765.8	30.23	767.8	48	8.9	92	NW	7	3.1	.....	0	0	.....	.....	0	0	Clear.	
St. Louis, Missouri	29.55	750.6	30.15	765.8	34	1.1	71	SE	9	4.0	.....	.....	10s	.....	Calm	0	0	Cloudy	
St. Marks, Flor'da	30.12	765.0	30.14	765.5	59	15.0	76	NE	12	5.4	.....	0	8s	.....	NE	0	0	Fair	
St. Paul, Minnesota	29.07	738.4	29.93	760.2	30	--1.1	78	E	6	2.7	.....	.....	10s	.....	SW	0	0	Cloudy	
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salt Lake City, Utah	25.75	654.0	30.08	764.0	39	3.9	64	NW	10	4.5	.....	0	8s	.....	Calm	0.18	4.6	Fair	
San Antonio, Texas	29.11	739.4	29.69	754.1	52	11.1	93	Calm	0	0	.....	.....	10ks	.....	SE	0	0	Cloudy	
San Diego, California	30.02	762.5	30.10	764.5	54	12.2	79	NE	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Sandusky, Ohio	29.69	754.1	30.40	772.1	33	0.6	79	SE	12	5.4	.....	0	Sm'e	.....	Calm	0	0	Clear	
Sandy Hook, New Jersey	30.50	774.7	30.53	775.4	39	3.9	63	N	7	3.1	.....	0	0	.....	.....	0	0	Clear	
San Francisco, California	30.16	766.1	30.22	767.6	53	11.7	93	Calm	0	0	.....	0	Fog	.....	SW	Inap.	Inap.	Fair	
Santa Fé, New Mexico	23.05	585.5	29.59	751.6	31.5	—0.3	54	N	12	5.4	.....	Haze	2s	.....	N	0	0	Fair	
Savannah, Georgia	30.20	767.1	30.30	769.6	47	8.3	69	NE	16	7.2	.....	.....	10s	.....	NE	0	0	Cloudy	
Shreveport, Louisiana	29.81	757.2	30.04	763.0	39	3.9	91	S	2	0.9	.....	.....	10s	.....	S	0	0	Cloudy	
Smithville, North Carolina	30.36	771.1	30.39	771.9	42	5.6	66	N	16	7.2	.....	0	8s	.....	E	0	0	Cloudy	
Springfield, Massachusetts	30.29	769.4	30.43	772.9	34	1.1	69	S	1	0.4	.....	0	0	.....	.....	Inap.	Inap.	Clear	
Stanwix, Arizona	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Stockton, Texas	29.77	680.0	29.77	756.1	45	7.2	67	S	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Thatcher's Island, Mass	30.37	771.4	30.43	772.9	34	1.1	61	W	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Toledo, Ohio	29.67	753.6	30.39	771.9	30	—1.1	78	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Tucson, Arizona	27.61	701.3	30.16	766.1	37	2.8	18	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Tybee Island, Georgia	30.22	767.6	30.26	768.6	52	11.1	86	NE	32	14.3	.....	.....	10s	.....	Calm	0	0	Cloudy	
Umatilla, Oregon	29.84	757.9	.....	.....	42	5.6	83	SE	4	1.8	.....	0	8s	.....	Calm	0.05	1.3	Fair	
Vicksburg, Mississippi	29.85	758.2	30.12	765.0	38	3.3	81	E	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Virginia City, Montana	24.36	618.7	29.84	757.9	25	—3.9	75	Calm	0	0	.....	0	0	.....	.....	0.14	3.6	Clear	
Visalia, California	29.88	758.9	30.26	768.6	43	6.1	83	SE	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Washington, D. C	30.46	773.7	30.57	776.5	29.5	—1.4	78	NW	2	0.9	.....	0	Sm'e	.....	NW	0	0	Dense smoke	
Wickenburg, Arizona	.....	.....	.....	.....	35	1.7	45	N	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Wilmington, N. Carolina	30.33	770.4	30.42	772.7	38	3.3	71	NE	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Winnemucca, Nevada	25.85	656.6	30.21	767.3	32	0.0	89	SW	5	2.2	.....	5ck	0	NW	.....	0.01	0.3	Fair	
Wood's Holl, Mass	30.13	772.9	30.49	774.4	42	5.6	58	NW	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Yankton, Dakota	28.52	724.4	29.83	757.7	33	0.6	84	SE	12	5.4	.....	.....	10s	.....	Calm	0	0	Cloudy	
Yuma, Arizona	29.98	761.5	30.15	765.8	46	7.8	40	N	4	1.8	.....	.....	.....	.....	.....	0	0	Clear	
SUB-SERIES.																			
York Factory, B. A	29.75	755.6	29.80	756.9	20.6	—6.4	100	NW	20	8.9	.....	.....	10n	.....	.....	0.06	1.5	Snowing	J. Fortescue, W. Wood
Havana, Cuba, W. I	29.87	758.7	29.89	759.2	80	26.7	91	Calm	0	0	.....	4cs	4n;ks	Calm	SE	1.12	28.4	Light rain	Chas. Hasselbrink.
Kingston, Jamaica, W. I	30.05	763.3	30.06	763.5	78	25.6	90	Calm	0	0	.....	8c	5n	Calm	Var.	0.56	14.2	.....	James Gall.
Navassa, W. I	29.80	756.9	29.88	758.9	82	27.8	.....	E	10	4.5	.....	.....	.....	.....	.....	0.70	17.8	Clear	F. M Everett.
St. Thomas, W. I	.....	.....	.....	.....	83	28.3	95	E	6	2.7	.....	2c	4k	NE	.....	0.05	1.3	.....	G. O. Gellich.
Paramaribo, D. Guiana, S. A	.....	.....	29.97	761.2	82	27.8	83	E	.....	.....	2	5k	7ks	E	.....	0	0	Fair	C. J. Hering.
Batavia, Dutch Guiana, S. A	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Dr. H. Groot.
Medellin, Colombia, S. A	25.20	640.1	.....	.....	65.0	18.3	89	Calm	.....	.....	0	.....	10c;ks	.....	.....	0.14	3.6	Cloudy	Thomas Herran.
Honolulu, Oahu, H. I	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Daniel Smith.
Makawao, Maui, H. I	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters: Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Co ıcho, 1, 760 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573,4 m.; Dodge City, 2,486 ft., or 757.5 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.: Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.: Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not certain that the weather for Batavia refers to the moment of observaion.

UNITED STATES NAVAL SERIES.

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

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

STATIONS AND VESSELS.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard Mare Island, Cal.	30.20	767.1	51	10.6	50	10.0	93	Calm	0	0	....	.....	0	.....	.....	0	0	.....	.....	Clear	
Navy Yard, Pensacola, Fla.	30.22	767.6	.....	.....	58	14.4	88	NE	12	5.4	....	.....	10	.....	.....	0	0	.....	.....	D. clouds....	
Navy Yard, Portsmouth, N.H	30.42	772.7	60	15.6	31	— 0.6	79	W	1	0.4	.....	.....	0	.....	.....	0	0	.....	.....	Clear.....	
Naval Hospital, Yokohama, Japan.....	29.92	760.0	55	12.8	48	8.9	63	NW	.....	.....	2	.....	4k	.....	SW	0	0	.....	.....	Fair	
Adams. S. 46° 33′, W. 64° 27′ 17″..	29.94	760.5	66	18.9	54	12.2	67	S	.....	.....	3	.....	8	.....	S	0	0	Light	S	D. clouds....	
Alert. Yokohama, Japan.....	30.07†	763.8†	53	11.7	53	11.7	73	NW	.....	.....	2	.....	2	.....	NW	.....	.....	Smooth	.....	D. clouds.....	
Alliance, Constantinople, Turkey.	30.33	770.4	73	22.8	61	16.1	88	NNE	.....	.....	1–2	.....	8	.....	N	.....	.....	.....	.....	Cloudy.....	
Ashuelot. Tientsin, China.....	30.36	771.1	58	14.4	45	7.2	53	Calm	.....	.....	0	.....	10	.....	Calm	.....	.....	Smooth	.....	D. clouds.....	
Canonicus, New Orleans, La.....	30.01	762.2	44	6.7	52	11.1	86	ESE	.....	.....	2	.....	2	.....	.....	.....	.....	.....	.....	Pleasant.....	
Colorado, New York, N. Y.....	30.60	777.2	67	19.4	41	5.0	74	WNW	6	2.7	.....	.....	5	.....	WNW	.....	.....	.....	.....	Foggy	
Despatch, Constantinople, Turkey.	30.38	771.6	77	25 0	59	15.0	88	NE	.....	.....	3–4	.....	7	.....	N&E	.....	.....	.....	.....	Rainy.....	
Essex. Cape Palmas, Guinea...	29.86	758.4	81	27.2	83	28.3	??	ESE	.....	.....	1	.....	5	.....	E	.....	.....	Long	SW	D. clouds.....	
Franklin, Norfolk, Va.....	30.55	776.0	44	6.7	46	7.8	62	NE	4	1.8	.....	.....	4	.....	NE	0	0	.....	.....	Clear	
Gettysburg, Malta	30.00‡	762.0‡	.....	.....	68	20.0	100	N&E	.....	.....	0–1	.....	2	.....	W	0	0	.....	.....	D. clouds.....	
Guard, N. 38° 40′, W. 57° 30′.....	30.31	769.9	68	20.0	65	18.3	94	NNW	.....	.....	4	.....	3	.....	N	.....	.....	Moderate.	N	D. clouds.....	
Marion, Smyrna, Turkey.....	30.14	765.5	64	17.8	65	18.3	73	SW	.....	.....	3	.....	4	.....	Calm	0	0	Smooth	.....	D. clouds. ...	
Michigan, Erie, Pa.....	29.88	758.9	50	10.0	30	— 1.1	68	S	.....	.....	3	.....	0	.....	.....	.....	.....	.....	.....	Clear.....	
Monocacy, Yokohama, Japan.....	29.93	760.2	64	17.8	55	12.8	39	NW	.....	.....	2	.....	2	.....	.....	.....	.....	.....	.....	D. clouds.....	
Monongahela, N. 36° 00′, W. 4° 48′.....	30.13	765.3	68	20.0	68	20.0	79	E	.....	.....	3	.....	ck	.....	.....	.....	.....	Smooth	.....	D. clouds.....	
New Hampshire, Port Royal, S.C.....	30.48	774.2	.....	.....	50	10.0	79	NE	30	13.4	.....	.....	8	.....	NW	0	0	Light	N	Squally	
Omaha, Callao, Peru.....	30.05	763.3	72	22.2	67	19.4	97	Calm	0	0	.....	.....	10	.....	Calm	0	0	.. ..	.....	Dull	
Onward, Callao, Peru.....	30.02	762.5	70	21.1	68	20.0	84	SSW	.....	.....	1	.....	10	.....	.....	.....	.....	Long	W	D. clouds.....	
Ossipee, Hampton Roads, Va.....	30.56	776.2	69	20.6	47	8.3	70	NE	.....	.....	4	.....	3	.....	E	.....	.....	.....	.....	D. clouds.....	
Palos, Shanghai, China.....	30.40	772.1	59	15.0	56	13.3	51	E	.....	.....	0–1	.....	0	.....	.....	.....	.....	.....	.....	Clear.....	
Pensacola, Mare Island, Cal.....	30.29	769.4	.....	.....	53	11.7	86	Calm	.....	.....	0	.....	0	.....	.....	.....	.....	.....	.....	Clear.....	
Plymouth, Norfolk, Va.....	30.52	775 2	50	10.0	45	7.2	84	N	.....	.....	1	.....	5	.....	N	.....	.....	.....	.....	Overcast.....	
Ranger, Shanghai, China.....	30.47	773.9	.....	.....	57	13.9	75	NW	.....	.....	1	.....	0	.....	.....	.....	.....	.....	.....	Pleasant.....	
Rio Bravo, Brownsville, Texas.....	29.94	760.5	.....	.....	58	14.4	94	N	.....	.....	1	.....	9	.....	SE	.....	.....	.....	.....	Misty.....	
Santee, Annapolis, Md.....	30.59	777.0	57	13.9	36	2.2	61	NW	.....	.....	2	.....	0	.....	.....	0	0	.....	.....	Clear.....	
Saratoga, Hampton Roads, Va.....	30.87†	784.1†	.....	.....	56	13.3	??	NE	.....	.....	2	.....	7	.....	N	0	0	.....	.....	Cloudy	
St. Louis, League Island, Pa	30.36	771.1	31	— 0.6	31	— 0.6	89	NW	5	2.2	.....	.....	0	.....	.....	0	0	.....	.....	Clear.....	
Swatara, Hampton Roads, Va.....	30.52	775.2	.....	.....	48	8.9	63	NE	.....	.....	2	.....	6	.....	S&E	.....	.....	.....	.....	D. clouds.....	
Tennessee, Yokohama, Japan.....	30.04	763.0	63	17.2	51	10.6	59	NW	4	1.8	.....	.....	2	.....	Calm	0	0	None	.....	D. clouds.....	
Trenton, Villefranche, France.....	30.24	768.1	67	19.4	65	18.3	73	Calm	0	0	.....	.....	7	.....	E	0	0	.....	.....	D. clouds.....	
Vandalia, Villefranche, France.,...	30.22	767.6	63	17.2	63	17.2	72	E	.....	.....	0–1	.....	8	.....	E	.....	.....	.....	.....	D. clouds.....	
Wabash, Boston, Mass.....	30.46	773.7	55	12.8	34	1.1	62	W	6	2.7	.....	.....	0	.....	.....	0	0	.....	.....	Blue sky.....	
Wyoming, Washington, D. C.....	30.55†	776 0†	.....	.....	32	0.0	.....	WNW	.....	.....	1	.....	1	.....	S&W	.....	.....	.....	.....	Hazy.....	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. ‡ Barometer corrected for instrumental error and reduced to sea-level.

UNITED STATES MARINE SERIES.

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

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Character.	Direction from—		
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of ——————, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama, N. 16° 40′, W. 100° 19′			29.65	753.1	84	28.9	87	ENE			1		7		NE	Light	NW to SW	D. clouds	Capt. Howard.
S. S. City of Peking, N. 38° 40′, E. 151° 18′			29.97*	761.2*	56	13.3	81	NW			4		8		NW	Mod'ate long.	NW	D. clouds	Lt. Z. L. Tanner, U.S.N.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio, N. 32° 12′, W. 140° 21′			30.15	765.8	67	19.4		S			5					Short	WNW	Blue sky	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

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

WHITE STAR LINE MARINE SERIES.

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

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

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

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

S. S. Belgic, N. 30° 38′, E. 166° 57′			30.20†	767.1†				SW			4		Heavy		SE	Smooth		Cloudy	Capt. John Metcalf.
S. S. Gaelic																			Capt. W. H. Kidley.
S. S. Oceanic, N. 22° 14′, E. 175° 8′			29.94	760.5	74	23.3	86	NE			4		6		NE	Moderate	NE	D. clouds	Capt. H. Parsell.

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

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

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

S. S. Baltimore																			Capt. H. Andresen.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig																			Capt. K. Undütsch.
S. S. Nürnberg, N. 42° 51′, W. 44° 3′			29.64	752.8	68.0	20.0	90	WNW			8		kn		NW	Heavy	WSW	Raining	Capt. A. Jaeger.
S. S. Ohio, N. 49° 23′, W. 18° 40′			29.58	751.3	52.5	11.4	83	WNW			8		k		WNW	Heavy	WNW	Blue sky	Capt. G. Meyer.

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

UNITED STATES MARINE SERIES.—CONTINUED.

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

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.		Character.	Direction from—		
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second	0—10.	Up'er 0—10.	Lo'wr 0—10.	Upper. From—	Lower. From—				
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, Philadelphia, Pa			30.50*	774.7*	43	6.1	83	NNW			5		8		NW			Cloudy	Captain Sargent.
S. S. Ohio. N. 49° 28′, W. 36° 27′			29.41	747.0	53	11.7	93	S			8		10		S	Rough	Confused	Stormy	Captain Morrison.
S. S. Pennsylvania, N. 49° 33′, W. 36° 47′			29.18†	741.2†	57	13.9	100	S			8		10		S	Heavy	SSW	Raining	Captain Harris.

NOTE.—The originals give the barometer as read off; the wind-force by the scale 0 to 12. *Aneroid; correction for elevation applied, instrumental error not known.
†Corrected for temperature and elevation, instrumental error not known.

RED STAR LINE MARINE SERIES.

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

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

ALLAN LINE MARINE SERIES.

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

S. S. Hibernian																			Capt. W. Richardson.
S. S. Scandinavian																			

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, Provincetown, Mass.			30.39	771.9	40	4.4	73	WNW	7	3.1			0					Clear.	Capt. James Jorgensen.

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

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

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

Albert J. Myer

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

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON NOVEMBER 8, 1877.

7:35 A. M. WASHINGTON mean time.

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

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

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

ALGERIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours	.....	.....	30.10	764.6	68.0	20.0	58	NW	.....	.....	2	.....	8	.....	.....	0	0	Very cloudy	Michel.
Algiers	.....	.....	30.01	762.2	72.3	22.4	66	N	.....	.....	1	.....	6	.....	.....	Inap.	Inap.	Cloudy	Peter.
La Calle	.....	.....	30.07	763.7	70.2	21.2	69	E	.....	.....	2	.....	1	.....	.....	0	0	Very fair	Fleury.
Tunis	.....	.....	30.10	764.5	72.3	22.4	56	E	.....	.....	3	.....	5	.....	.....	0	0	Cloudy	Jacques.
Sfax	.....	.....	30.16	766.0	68.0	20.0	.....	Calm	.....	.....	0	.....	9	.....	.....	0	0	Covered	Husson.
Saida	.....	.....	30.14	765.6	65.8	18.8	41	WSW	.....	.....	6	.....	4	.....	.....	0.236	6.0	Cloudy	Millot.
Tebessa	.....	.....	30.10	764.6	.....	.....	.....	Calm	.....	.....	0	.....	0	.....	.....	.....	.....	Clear	Bourgeois.
Geriville	.....	.....	30.10	764.6	59.0	15.0	68	W	.....	.....	2	.....	4	.....	.....	0	0	Cloudy	Lemaillot.
Laghouat	.....	.....	30.14	765.5	62.6	17.0	61	E	.....	.....	2	.....	4	.....	.....	0	0	Cloudy	Guyot.
Biskra	.....	.....	30.10	764.6	71.6	22.0	30	SSE	.....	.....	1	.....	0	.....	.....	0	0	Clear	Kuntz.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

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

AUSTRIAN SERIES.

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

Agram	29.58	751.3	30.13	765.4	54.0	12.2	59	SE	.....	.....	1	.....	0	.....	.....	0	0	.....	Prof. Ivan Stozir
Cracow, I. R. Observatory	29.35	745.6	30.13	765.4	49.3	9.6	87	NE	.....	.....	1	.....	0	.....	.....	0	0	.....	Dr. Wierzbiski.
Eperies	29.27	743.4	30.16	766.0	50.4	10.2	55	S	.....	.....	1	.....	4cs	.....	.....	0	0	.....	Julius Mikolik.
Gratz	28.85	732.9	30.13	765.4	46.0	7.8	75	SSW	.....	.....	2	.....	0	.....	.....	0	0	.....	Andreas Rospini.
Hermannstadt	28.72	729.5	30.17	766.2	48.9	9.4	55	E	.....	.....	1	.....	1	.....	.....	0	0	.....	Prof. Reissenberger.
Kremsmünster	28.70	728.9	30.10	764.5	33.8	1.0	96	Calm	.....	.....	0	.....	10	.....	.....	0	0	.....	Prof. C. Wagner.
Lemberg	29.13	739.9	30.13	765.2	52.2	11.2	63	S	.....	.....	1	.....	2	.....	.....	0	0	.....	Dr. T. Stanecki.
Pola	30.08	763.9	30.19	766.8	57.0	13.9	76	WNW	.....	.....	1	.....	3ks	.....	.....	0	0	.....	I.R.Hydrographic Office.
Szathmar	29.75	755.7	30.23	767.7	52.5	11.4	55	S	.....	.....	2	.....	5	.....	.....	0	0	.....	Johann Tamas, S. J.
Szegedin	29.89	759.1	30.17	766.2	56.5	13.6	60	S	.....	.....	1	.....	0	.....	.....	0	0	.....	Karl Stancel.
Trieste	30.11	764.8	30.21	767.4	54.9	12.7	90	Calm	.....	.....	0	.....	0	.....	.....	0	0	Clear	P. Busin.
Vienna	29.40	746.7	30.10	764.5	52.5	11.4	64	S	.....	.....	2	.....	0	.....	.....	0	0	.....	I. R. Central Met. Obs'y.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

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

BELGIAN SERIES.

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

Arlon	28.45	722.6	29.97	761.1	50.2	10.1	89	SW	.....	.....	2	.....	10	.....	.....	0.276	7.0	Raining	Prof. M. Passau.
Brussels	29.70	754.4	29 90	759.5	54.3	12.4	89	SSW	.....	.....	4	.....	10	.....	WSW	0.163	4.20	Light rain	Royal Observatory.
Furnes	29.86	758.4	29.88	759.0	55.9	13.3	88	WSW	.....	.....	2	.....	8	.....	.....	0.008	0.2	.....	M. E. de Cae.
Maeseyck	29.77	756.1	29.90	759.4	53.4	11.9	100	W	.....	.....	2	.....	10	.....	.....	0.252	6.4	Raining	M. Pierrot.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

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

BRITISH SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Aberdeen	29.50	749.3	29.60	751.8	47.1	8.4	.....	SW	13	5.8	.....	.....	2	.....	.....	0.065	1.65	Blue sky.....	W. Boswell.
Ardrossan	29.60	751.8	29.62	752.3	50	10.0	.....	SSW	.....	.....	4	.....	6	.....	.....	.....	.....	D. clouds....	William McNeil.
Armagh, Observatory	.....	.....	29.65	753.1	44.9	7.2	.....	S	10	4.5	.....	.....	10	.....	.....	.....	.....	Overcast.....	S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)	.....	.....	29.74	755.4	51.8	11.0	.....	SW	12	5.4	.....	.....	7	.....	.....	.....	.....	D. clouds.....	John Hartnup.
Birr Castle, (Parsonstown)	.....	.....	29.65	753.1	47.0	8.3	.....	SSE	.....	.....	1	.....	10	.....	.....	.....	.....	Overcast.....	J. Dreyer.
Bradford, Yorkshire	29.34	745.2	29.73	755.1	50.1	10.1	.....	S	.....	.....	1	.....	0	.....	.....	0.01	0.3	Blue sky.....	J. McLandsborough.
Bridgetown, (Barbados)	29.93	760.2	29.96	761.0	82.0	27.8	.....	NE	.....	.....	1	.....	3	.....	.....	.....	.....	D. clouds....	Pvt. G. W. Roberts, A.
Cambridge, Observatory	.....	.....	29.84	757.9	54.0	12.2	.....	SW	.....	.....	1	.....	7	.....	.....	Blank	Blank	D. clouds.....	H. Todd. [H.C.
Cardington	.....	.....	29.83	757.7	53.0	11.7	.....	SW	.....	.....	1	.....	1	.....	.....	.....	.....	Blue sky.....	John McLaren.
Chatham, School M. E.	29.72	754.9	29.84	757.9	57.2	14.0	.....	S	.....	.....	1	.....	4	.....	.....	Blank	Blank	Blue sky.....	Lt.-Col. C.M.Martin, R.E.
Dartmoor	28.38	720.8	29.86	758.4	47.6	8.7	.....	W	.....	.....	5	.....	7	.....	.....	.....	.....	Showery.....	Alexander Watt.
Davos Platz (Switzerland)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Francis Redford, M. A.
Donaghadee	29.61	752.1	29.64	752.8	48	8.9	.....	WSW	.....	.....	2	.....	0	.....	.....	.....	.....	Blue sky.....	J. Mac Gowan.
Dover	29.85	758.2	29.88	758.9	54	12.2	.....	WSW	.....	.....	3	.....	7	.....	.....	.....	.....	Gloomy.....	J. Costello.
Eccles, (near Manchester)	.....	.....	29.74	755.4	54.7	12.6	.....	SW	5.2	2.3	.....	.....	2	.....	.....	.....	.....	D. clouds....	Thomas Mackereth.
Falmouth, Observatory	29.60	751.8	29.82	757.4	53.8	12.1	.....	WSW	.....	.....	4	.....	6	.....	.....	.....	.....	Overcast.....	The Staff.
Fort Napier, (Natal)	27.59	700.8	29.78	756.4	82.8	28.2	.....	E	.....	.....	2	.....	8	.....	.....	.....	.....	D. clouds....	Pvt. G. Salmon, A.H.C.
Free Town, (Sierra Leone)	.....	.....	29.92	760.0	88.5	31.4	.....	Calm	.....	.....	0	.....	3	.....	.....	.....	.....	D. clouds....	
Galway, Queen's College	.....	.....	.....	.....	48	8.9	.....	S	.....	.....	2	.....	3	.....	.....	.....	.....	D. clouds....	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	30.03	762.7	30.09	764.3	63.2	17.3	.....	W	.....	.....	4	.....	1	.....	.....	.....	.....	Blue sky.....	Corpl. C. Aitken, A.H.C.
Glasgow, Observatory	29.42	747.3	29.62	752.3	48.3	9.1	.....	SSW	.....	.....	2	.....	3	.....	.....	.....	.....	Blue sky.....	D. G. Maclean.
Great Yarmouth	29.81	757.2	29.81	757.2	52	11.1	.....	WSW	.....	.....	2	.....	0	.....	.....	.....	.....	Hazy.....	G. T. Watson.
Greenwich, Royal Obs'y	29.70	754.4	29.87	758.7	57.1	13.9	.....	SW	.....	.....	2	.....	6	.....	.....	.....	.....	D. clouds....	The Staff, for G. B. Airy.
Guernsey	29.68	753.9	29.90	759.4	55	12.8	.....	SSW	.....	.....	3	.....	5	.....	.....	.....	.....	D. clouds....	Dr. S. E. Hoskins, F.R.S.
Helston	.....	.....	29.84	757.9	56	13.3	.....	SW	.....	.....	4	.....	2	.....	.....	0.06	1.5	D. clouds	M. P. Moyle.
Holyhead	29.66	753.4	29.71	754.6	52	11.1	.....	SSW	.....	.....	4	.....	3	.....	.....	.....	.....	Hazy.....	John Tilston.
Jersey	29.66	753.4	29.96	761.0	55.5	13.1	.....	SW	.....	.....	4	.....	1	.....	.....	.....	.....	Blue sky.....	J. Fisher.
Kew, Observatory	.....	.....	29.86	758.4	55.2	12.9	.....	SSW	18	8.0	.....	.....	5	.....	.....	.....	.....	D. clouds....	The Staff.
Kingstown	29.67	753.6	29.69	754.1	51	10.6	.....	S	.....	.....	3	.....	9	.....	.....	.....	.....	Overcast.....	George Mitchell.
Leicester, Museum	.....	.....	29.80	756.9	52.9	11.6	.....	SW	.....	.....	1	.....	10	.....	.....	.....	.....	Blue sky.....	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	30.04	763.0	30.12	765.0	67	19.4	.....	NE	.....	.....	4	.....	6	.....	.....	.....	.....	Overcast.....	S'gt. O. Arbeiter. A.H.C.
Nairn	29.45	748.0	29.55	750.6	46	7.8	.....	SW	.....	.....	1	.....	5	.....	.....	.....	.....	½ clouded..	W. D. Penny.
Nassau, (Bahamas)	.....	.....	30.00	762.0	80.5	26.9	.....	SE	.....	.....	1	.....	10	.....	.....	Blank	Blank	Overcast.....	C. S. Duncombe.
Nottingham, Observatory	29.60	751.8	29.79	756.7	52.0	11.1	.....	WSW	.....	.....	1	.....	7k;d	.....	W	0	0	D. clouds....	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.26	743.2	29.78	756.4	53.9	12.2	.....	SW	.....	.....	3-4	.....	7	.....	.....	.....	.....	D. clouds....	Rev. Stephen Whitty.
Oxford, Radcliffe Obs'y	.....	.....	29.78	756.4	54	12.2	.....	SW	.....	.....	2	.....	5	.....	.....	.....	.....	D. clouds....	F. Lucas.
Plymouth	29.74	755.4	29.82	757.4	53.7	12.1	.....	SW	.....	.....	3	.....	10	.....	.....	.....	.....	Overcast.....	John Merrifield.
Roche's Point	29.56	750.8	29.60	751.8	51	10.6	.....	SW	.....	.....	4	.....	10	.....	.....	.....	.....	Overcast.....	W. Kennedy.
Saint Ann's Head	29.59	751.6	29.75	755.6	54	12.2	.....	SSW	.....	.....	3	.....	8	.....	.....	.....	.....	Squally.....	John C. Walker.
Sandwick Manse, (Orkneys.)	.....	.....	29.55	750.6	44.9	7.2	.....	W	7	3.1	.....	.....	0	.....	.....	.....	.....	Blue sky.....	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey)	.....	.....	30.13	765.3	59.2	15.1	.....	NE	.....	.....	2	.....	2	.....	.....	.....	.....	D. clouds....	Sergt. W. H. Lyne.
Sheffield	29.53	750.0	29.77	756.1	52.5	11.4	.....	WSW	.....	.....	2	.....	2	.....	.....	0.08	2.0	Blue sky.....	W. F. Cooper.
Silloth Rectory	29.64	752.8	29.67	753.6	53.8	12.1	72	SW	.....	.....	2	.....	0	.....	.....	0.180	4.57	Blue sky.....	Rev. F. Redford, M. A.
Stonyhurst, Observatory	.....	.....	.....	.....	50.2	10.1	.....	SW	.....	.....	2	.....	7	.....	.....	.....	.....	Hazy.....	Rev. S. J. Perry.
Stornoway, Lews C. (Hebr.)	.....	.....	29.47	748.5	44	6.7	.....	W	.....	.....	1	.....	0	.....	.....	.....	.....	Blue sky.....	John Smith.
Stratfield Turgiss	29.64	752.8	29.86	758.4	54.8	12.7	.....	SW	.....	.....	1	.....	3	.....	.....	.....	.....	Blue sky.....	Rev. C. H. Griffith, F.M.S.
Thurso	.....	.....	29.52	749.8	50	10.0	.....	SSW	.....	.....	1	.....	2	.....	.....	.....	.....	Blue sky.....	John Trotter.
Truro, Royal Institution	.....	.....	29.83	757.7	56	13.3	.....	SW	.....	.....	6	.....	5	.....	.....	.....	.....	D. clouds....	W. Newcombe.
Valencia, Observatory	.....	.....	29.58	751.3	52.2	11.2	.....	S	35	15.6	.....	.....	10	.....	.....	.....	.....	D. clouds....	The Staff.
SUB-SERIES.																			
Calf of Man, (Isle of Man)	.....	.....	.....	.....	52	11.1	.....	SW	.....	.....	4	.....	10	.....	.....	0	0	.....	Henry Mercer.
Cape Good Hope, Obs'y	29.95	760.7	29.99	761.7	65.1	18.4	85	NW	25	11.2	.....	10	9	.....	.....	.....	.....	.....	The Staff, for E. J. Stone.
Hobart Town, (Tasmania)	.....	.....	29.62	752.3	60.0	10.0	77	NW	.....	.....	3	.....	0	.....	.....	0	0	.....	Francis Abbott, F.R.A.S.
Leith, Restalrig Park	.....	.....	29.66	755.4	50.0	10.0	.....	W	.....	.....	2	.....	.....	.....	.....	0	0	Fine	Andrew Gibb.
Mauritius, Observatory	29.73	755.1	29.92	759.9	79.0	26.1	57	W	11.0	4.9	.....	2	3	NW	WSW	0	0	Fine.....	C. Meldrum.
Melbourne, Observatory	29.90	759.4	29.99	761.7	56.3	13.5	64	WSW	10	4.5	.....	.....	4	.....	.....	0	0	Fine.....	R. L. J. Ellery.
Monach L't-house, (Hebrides)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Youngclause.
North Unst, (Shetland Is.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Robert Burnet.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series: 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is mensured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,1057 ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m.

MARINE SERIES. VESSELS.	Sea or swell. Height scale 0—9	Sea or swell. Direction from—	Weather	Observer.
S. S. Algeria, N. 41° 7', W. 66° 30'	*0	.....	Blue sky.....	Capt. W. Watson.
S. S. Batavia	.....	.....	.....	Capt. J. E. Mouland.
Ship Camperdown	.....	.....	.....	Capt. A. T. Miller.
Brig Catherine	.....	.....	.....	Capt. Adam Smith.
Barque Celeste	.....	.....	.....	Capt. D. F. McKechnie.
S. S. Hibernia	.....	.....	.....	Capt. W. R. Cato
Barque Maroon	.....	.....	.....	Capt. A. T. Brown.
Ship Mikado	.....	.....	.....	Capt. C. C. Prehn.
S. S. Seine	.....	.....	.....	Capt. H. Manning.
Barque Sorata	.....	.....	.....	Capt. Jas. J. Price.
Schooner Traveller	.....	.....	.....	Capt. Alex Simpson.
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
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.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
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.....	.....	.....	.....	.....

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

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

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

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

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

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

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

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

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

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

STATIONS.	BAROMETER. Corrected for instrumental error and temperature. Inches.	BAROMETER. Corrected for instrumental error and temperature. Millimeters.	BAROMETER. Reduced to sea-level. Inches.	BAROMETER. Reduced to sea-level. Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—1.	CLOUDS. Amount. Low'r 0—1.	CLOUDS. Direction. Upper. From—	CLOUDS. Direction. Lower. From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	WEATHER.	OBSERVER
San José	26.20	665.5			70.7	21.5	93	S			1		1cks			0.7	18.		Federico Maison.

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

DANISH SERIES.

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

Copenhagen	29.72	754.8	29.76	756.0	50.2	10.1	99	SW			2		10					Rain and fog	
Fanöe	29.75	755.6	29.77	756.1	49.5	9.7	98	WSW			2		10					Raining	
Godthaab, (Greenland)	29.26	743.3	29.31	744.4	25.2	—3.8	82	Calm			0		10						
Stykkisholm, (Iceland)	29.52	749.7	29.56	750.8	28.6	—1.9	96	SE			6		8						
Thorshavn, (Faröe)	29.56	750.9	29.60	751.8	39.7	4.3	90	NE			2		7						
Vestervig	29.57	751.1	29.74	755.4	47.5	8.6	92	Calm			0		10					Foggy	

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

FRENCH SERIES.

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

Alençon, Normal School	29.48	748.8	30.03	762.8	55.4	13	77	SW			1		5		SW	0.598	15.2	Cloudy	Collignon, Director.
Amiens, Normal School	29.82	757.4	29.93	760.3	56.1	13.4	86	SW			1		5		W	0.480	12.2	Cloudy	Bonvarne, Director.
Avignon, Normal School	30.02	762.6	30.10	764.6	58 3	14.6	91	SE			1		8		S	0.098	2.5	Raining	Mr. Giraud, Director.
Bar-sur-Seine																			C. Saillard.
Beaumette Obs'y (Angers)	29.83	757.7	29.99	761.8	55.8	13.2	59	SW	4.3	1.9					SW	0.134	3.4		Albert Cheux.
Beauvais	29.68	753.8	29.96	761 0	55.9	13.3	84	W			1		8		W	0.443	11.25	Very cloudy	Normal School.
Besançon	29.17	741.0	30.06	763.5	60.8	16	69	S			4		5		SW	0.106	2.7	Cloudy	Normal School.
Bourg-en-Bresse	29.19	741.5	30.15	765.7	60.6	15.9	59	S			6		10kn		S	0.177	4.5	Covered	Normal School.
Bourges, Normal School	29.48	748.9	30.04	763.0	54.5	12.5	87	SW			2		10		E	0.449	11.4	Covered	A. Wagner, Director.
Brest, Naval Observatory	29.65	753.1	29.87	758.6	58.1	14.5	69	SW			4		5k		SW	0.039	1.00		The Staff.
Carcassonne, Normal School	29.05	753.2	30.07	763.7	58.1	14.5	98	N			2		10		N	0	0	Covered	Vateau, Director.
Caen	29.87	758.7	29.95	760.6	55.2	12.9	77	NE			2		2		NE	0.102	2.6	Slightly cl'dy	Normal School.
Chartres, Normal School	29.41	747.1	29.97	761.3	59.0	15	86	SW			1		5		NE	0.51	13.		Lequin, Director.
Châlons-sur-Marne, N. Sch'l	29.62	752.4	29.94	760.5	53.6	12.0	93	S			2		10n		S	0	0	Covered	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.62	727.0	29.05	760.7	63.7	17.6	60	SE			3		8		S	0	0	Very cloudy	Alluard, Director.
Commercy, Normal School	29.10	739.2	29.93	760.2	56.3	13.5	77	W			2		10		W	0	0	Covered	Dr. Goulet, Director.
Commune de Gréasque*	29.04	737.5	30.18	766.5	56.7	13.7	88	SE			2		10		SE	0.291	7.4	Light rain	M. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	29.83	757.6	30.05	763.2	56.8	13.8	77	SSE			2		8		SSE	0.669	17.0	Very cloudy	Mouillot, Director.
Le Mans, Normal School	29.71	754.7	30.02	762.5	55.4	13	73	W			2		8		W	0.532	13.5	Very cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.09	738.8	30.09	761.9	58.8	14.9	80	SE			2		10		E	0.08	2.	Covered	Pin, Director.
Lorient, Naval Observatory	29.89	759.1	29.99	761.7	57.9	14.4	65	WSW			4		2		WSW	0.079	2.0	¼ covered	T. Carré, Director.
Mâcon, Normal School	29.39	746.5	30.00	762.0	59.5	15.3	80	Calm			0		10			0.047	1.2	Covered	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	28.92	734.5	29.81	757.2	58.6	14.8	58	SW					10		NE	0	0	Covered	Normal School.
Nismes, Normal School	29.04	760.5	30.15	765.7	58.0	14.8	87	E			2		5		N	0.324	8.25	Cloudy	Boyer, Director.
Orleans, Normal School	29.56	750.8	29.94	760.5	56.1	13.4	82	SW			2		8		W	0.28	7.	Very cloudy	Bernard, Director.
Paris, Observatory	29.72	755.0	29.97	761.1	54.9	12.7	81	W			1		10k		W	0.306	7.77	Covered	National Observatory.
Privas	29.66	738.0	30.12	765.1	57.2	14	74	S			6		10		S			Raining	Normal School
Rochefort, Naval Obs'y	30.00	761.9	30.03	762.7	59.4	15.2	78	WSW			3		10		WSW	0.04	1.	Covered	Lt. Decante, Director.
Rouen, Normal School	29.85	758.3	29.94	760.5	55.8	13.2	80	S			2		2		SW	0.413	10.5	Slightly cl'dy	F. Lucard, Director.
Tarbes, Normal School																			T. Hugues, Director.
Villefranche	29.33	744.9	30.03	762.8	61.7	16.5	80	SSE			4		10		NE	0.024	0.6	Covered	Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.81	757.2	29.84	757.9	79.5	26.4										0.16	4.		L'Abbé Marchési.
Marseilles, Observatory			30.11	764.7	58.5	14.7	84	SE			2		10			0.059	1.50	Raining	The Staff.
Mont-Louis	24.55	631.3	30.17	766.3	44.8	7.1	74	ESE	7.4	3.33			7		SSW	0.330	8.9		Mr. Falguère.
Nice			30.14	765.5	63.0	17.2	63	E					5		E	0	0	Cloudy	Dr. A. Niepce.
Paris, Montsouris Obs'y	29.08	753.8	29.95	760.8	54.5	12.5	87	WNW			2		10		WNW	0.287	7.3		Marié Davy, Director.
Perpignan			30.02	762.6	61.5	16 4	73	NE	7.4	3.33			8		SW	0.051	1.3		Dr. Fines.
Pic du Midi, (Summit,) H. P.	21.16	537.5			31.3	—0.4		SW			2		10					Snowy	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.46	570.6			37.4	3.0		SW			1		10			0.244	6 2	Snowy	Gen'l de Nansouty.
Saint Maur, (near Paris)	29.80	756.8	29.96	761.0	54.9	12.7	86	W			1		10		WSW; SW	0.322	8.2		E. Renou.
Toulouse, Observatory	29.37	746.0	30.09	764.3	53.1	11.7	86	WSW			2					0	0		The Staff.
Tours	29.61	757.1	30.00	762.1	55.9	13.3	82	SW			1		9		W	0.205	7.5		C. Marquet.
Versailles, (near Paris)			29.97	761.1	55.0	12.8	86	NW			1		10			0.240	6.10	Covered	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.21	767.4	30.24	768.0	51.6	10.9	98	NE	2.9	1.3			10n			0.413	10.5	Raining	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; for Montsouris, the barometer reduced to freezing but not to sea-level. At Mirecourt the cloud direction is apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

GERMAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Berlin	29.78	756.4	29.95	760.7	58.1	14.5	64	S			2		1			0	0		Prof. Arndt.
Breslau	29.54	750.4	30.08	763.9	55.4	13.0	87	S			1		0			0	0		Royal University Obs'y.
Carlsruhe	29.57	751.0	29.99	761.7	60.4	15.8	64	SW			2		10			0.008	0.2		Albert Senz.
Cassel	29.38	746.2	29.98	761.6	57.7	14.3	76	SSW			3		4	SSW		0	0		Dr. H. Möhl.
Crefeld	29.71	754.6	29.87	758.7	54.3	12.4	93	SW			3		10			0.12	3.	Drizzling	Director Lose.
Emden	29.52	757.3	29.85	758.2	54.0	12.2	97	W			3		10			0.193	4.9		Prof. Prestel.
Frankfort on the Main	29.66	753.4	30.02	762.6	60.4	15.8		SSW			2		4			0	0		Physical Society.
Friedrichshafen	28.65	727.8	30.11	764.8	48.2	9.0	81	SSW			1		2	W		0	0		M. Wilhelm.
Hamburg	29.77	756.1	29.84	757.9	55.8	13.2	91	SSW			3		10			0.024	0.6	Light rain	Captain F. Hegemann.
Kiel	29.77	756.1	29.78	756.5	54.5	12.5	97	SW			2		10			0.332	8.43		Prof. G. Karsten.
Königsberg, (Prussia)	29.88	758.9	29.95	760.7	54.0	12.2	69	SW										Clear	Prof. E. Luther.
Köslin			29.88	759.0	55.6	13.1		S			2		1			0	0		H. Müller.
Leipsic, Observatory	29.59	751.6	30.01	762.2	60.1	15.6	57	SSW			4		2			0	0		Prof. Bruhns.
Memel, Naval School	29.91	759.8	29.96	761.0	49.1	9.5	87	SSW			1		10ks						Reinbrecht von Skalweit.
Neufahrwasser	29.94	760.4	29.95	760.8	54.3	12.4	74	S			2		8	WSW		0	0		A. Lothes.
Posen	29.75	755.6	30.04	763.0	53.4	11.9	72	S			2		1					Clear	Dr. Magener.
Strassburg Obs., (in Alsace	29.48	748.9	30.03	762.7	59.9	15.5	71	SW			3		9	W		0.002	0.06	Raining	Dr. Schur.
Stuttgart	29.08	738.5	30.00	762.1	61.3	16.3	55	SW			3		6	W		Blank	Blank		Prof. Schoder.
Treves, (Trier)	29.33	744.9	29.85	758.1	57.0	13.9	79	W			3		10			0.118	3.00	Foggy	Prof. Flesch.
Weissenburg, (Bavaria)	28.53	724.6	30.02	762.6	57.6	14.2	63	Calm	0	0			2cks			0	0		Dr. Von Bebber.
Wustrow, Naval School	29.86	758.4	29.90	759.4	55.6	13.1	84	S			3		10					Covered	E. F. Schütz.
German Naval Series.																			

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

GREEK SERIES.

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

Athens	29.78	756.3	30.17	766.3	60.3	15.7		N										½ Clear	Dr. J. F. J. Schmidt.

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

INDIAN SERIES.

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

Kurrachee	29.91	759.7	29.96	761.0	82.1	27.8	73	WSW	21.0?	9.4?			1			0	0	D. clouds	
Deesa	29.50	751.6	29.98	761.4	87.9	31.1	40	Calm					8	NW	N	0	0	D. clouds	
Bombay	29.87	758.7	29.91	759.7	83.3	28.5	64	NW	12.0	5.4			0			0	0	Misty	
Poona	27.93	709.3	29.93	760.2	80.2	26.8	45	E					1			0	0	Cloudy	
Lahore	29.24	742.6	30.00	761.9	73.2	22.9	47	Calm	1.5	0.7			7			0	0	D. clouds	
Belgaum	27.44	696.9	29.99	761.7	75.8	24.3	43	E	4.0	1.8			1						
Bangalore																			
Roorkee	29.04	737.6	29.95	760.8	75.3	24.1	37	Calm	1.8	0.8			0			0	0		
Agra	29.34	745.3	29.91	759.7	79.7	26.5	42	W					2			0	0		
Trichinopoly																			
Nagpur	28.94	735.1	29.99	761.8	78.9	26.1	35	Calm	2.4	1.1			0			0	0	Blue sky	
Madras																			
Lucknow	29.60	751.8	29.98	761.4	76.3	24.6	55	NNW	1.9	0.8			0			0	0	Blue sky	
Allahabad	29.66	753.3	29.97	761.2	77.7	25.4	55	Calm	1.0	0.4						0	0	Blue sky	
Patna	29.78	756.5	29.97	761.2	79.5	26.4	50	W	0.8	0.4			0			0	0	Blue sky	
Hazaribagh	27.95	709.9	29.99	761.6	73.6	23.1	60	Calm	3.4	1.5			0			0	0	Blue sky	
Cuttack	29.58	768.9	29.96	761.0	79.6	26.4	67	WNW	0.3	0.1			0			0	0	Blue sky	
Calcutta (Alipore)	29.96	760.8	29.98	761.4	76.6	24.8	75	N	2.0	0.9			0			0	0	Blue sky	
Goalpara	29.57	751.1	29.96	761.1	75.8	24.3	70	E	1.5	0.7			0			0	0		
Chittagong	29.89	759.3	29.99	761.7	74.0	23.3	72	Calm	2.1	0.9			0			0	0		
Sibsagar	29.68	753.9	30.03	762.7	71.4	21.9	88	ENE	0.9	0.4			4			0	0	Blue sky	
Rangoon																			
Jubbulpore	28.60	726.5	29.98	761.4	79.0	26.1	48	NE	1.5	0.7			0			0	0	Blue sky	

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

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	22.25	565.2	30.15	765.8	30.9	— 0.6	90	N			2		10			0	0		Ab. Dom. Mongini.
Stelvio	22.24	564.8	30.19	766.7	29.5	— 1.4		SSE			2		7			0	0		Signora Ernesta Manfredi.
Udine	29.76	755.9	30.18	766.5	54.0	12.2	56	Calm	0	0			6			0	0		Prof. Giovanni Clodig.
Padua	30.07	763.7	30.18	766.6	54.1	12.3	63	ESE	0	0			9	W		0	0		Prof. Dott. Lorenzoni.
Vicenza	29.98	761.5	30.18	766.5	53.6	12.0	59	E	0	0			4	W		0	0		Conte Alm. Da Schio.
Verona	29.96	760.9	30.19	766.7	59.5	15.3	56	SW	0	0			0			0	0		Dott. B. Bertoncelli.
Bergamo																			Prof. Trionfini Carlo.
Domodossola	29.17	741.0	30.22	767.6	49.8	9.9	80	S			2		10			0	0		Prof. Giuseppe Calza
Milan	29.69	754.1	30.22	767.6	53.6	12.0		WNW			2		10	ENE		0	0		Ab. Gio. Capelli.
Pavia	29.86	758.5	30.22	767.5	50.0	10.0	76	SW			1		10			0	0		Prof. Gio. Cantoni.
Moncalieri	29.30	744.1	30.23	767.7	53.4	11.9	68	NNE	0	0			9			0	0		Prof. P. F. Denza.
Mondovi	28.27	718.0	30.21	767.2	53.1	11.7	53	N			2		7			0	0		Prof. D. C. Bruno.
Porto Maurizio	29.96	761.0	30.19	766.7	62.1	16.7	56	E	1.3	0.6			3			0	0		Prof. L. Vassallo.
Genoa	30.02	762.4	30.19	766.7	57.9	14.4	82	Calm	0	0			10			0.626	15.9		Prof. G. M. Garibaldi.
Piacenza	29.95	760.7	30.21	767.3	52.0	11.1	79	NW	6.9	3.1			10	W		0	0		Dott. G Manzi.
Parma	29.89	759.1	30.21	767.3	56.8	13.8	55	NW			4		10			0	0		Prof. P. Pigorini.
Florence	29.95	760.6	30.21	767.3	56.8	13.8	46	N			2		0			0	0		Cav. F Meucci.
Leghorn	30.10	764.4	30.18	766.6	61.7	16.5	64	SW	4.9	2.2			0			0	0		Prof. P. Monte.
Siena	28.96	735.6	30.18	766.6	58.3	14.6	48	WSW	0	0			0			0	0		Prof. L. Toscani.
Urbino	28.66	727.7	30.23	767.8	55.8	13.2	73	SW			2		0			0	0		Prof. P. Serpieri.
Pesaro	30.15	765.8	30.20	767.1	53.6	12.0	82	NE	19.2	8.6			0			0	0		Prof. Luigi Guidi.
Ancona	30.08	764.1	30.19	766.9	56.7	13.7	76	SE			2		2			0	0		Prof. F. DeBosis.
Grosseto	30.10	764.4	30.21	767.3	62.2	16.8	52	WSW			2		3	S		0	0		Avv. P. Ponticelli.
Rome	29.62	752.4	30.19	766.9	61.7	16.5	53	N	0	0			0			0	0		Prof. P. A Secchi.
Naples, O. U	29.99	761.8	30.20	767.0	66.2	19.0	45	S			2		3	NE		0	0		Prof. L. Palmieri.
Lecce					60.4	15.8	69	N	7.4	3.3			6	NE		0	0		Prof. C. De Giorgi.
Cosenza	29.32	744.7	30.23	767.7	59.0	15.0	66	SE	0.7	0.3			2			0	0		Prof. F. D. Conti.
Cagliari	29.87	758.6	30.06	763.5	67.1	19.5	70	S			2		1	SE		0	0		Prof. A. Pacinotti.
Riposto, (Sicily)	30.10	764.5	30.15	765.7	63.3	17.4	76	Calm			0		6	SE		0.138	3.5		Prof. F. Cafiero.
Palermo	29.86	758.5	30.12	765.0	63.0	17.2	52	NE	2.5	1.1			0			0	0		Prof. G. Cacciatore.
Caltanissetta	28.16	715.3	30.12	765.0	58.1	14.5	48	E			4		5	SW		0	0		Prof. A. Pagani.
Syracuse	30.04	763.1	30.12	765.0	63.5	17.5	73	W			2		5	NW		0.256	6.5		Prof. V. Giuliano.
SUB-SERIES.																			
Naples, S. R.	29.97	753.5	30.22	767.6	62.6	17.0	50	NE	0	0			4			0	0		Prof. F. Brioschi.

NOTE.—The originals give the wind-force on the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,513.0 meters, or 8,242.9 feet; Valdobbia, 2,543.0 m., or 8,339.3 ft.; Bergamo, 379.9 m., or 1,245.3 ft.; Moncalvi, 359 m., or 1,324.2 ft.; Siena, 348.5 m., or 1,143.3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft.

JAPANESE SERIES.

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

Tokei (Yeddo)																			The Observatory.
Tokei (Yeddo) University	29.94	760.5	30.04	762.9	49	9.4	82	Calm	0	0			2ks			0	0	Fair	Prof. P. V. Veeder.

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

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

Aguascalientes																			I. N. Marin, M. D.
Córdoba																			C. Peña, M. D.
Cuernavaca																			L. Castillo, A. E.
Guadalajara																			Prof. L. Perez.
Guanajuato																			Prof. V. Fernandez.
Leon																			Prof. M. Leal.
Mexico	29.10	586.8	30.25	768.2	55.4	13.0	73	Calm	0	0		0	0			0	0	Very fine	Central Observatory.
Orizaba																			N. N.
Orizaba																			I. Orozco, M. D.
Pabellon, (Aguascalts)																			M. Y. de Leon, M. E.
Puebla																			Prof. B. Gonzalez.
Toluca																			Prof. C. Velazquez.
Tlacotalpam																			Prof. F. R. Bayly.
San Luis Potosí																			G. Barroeta, M. D.
Vera-Cruz																			Prof. J. Rossell.
Zacatecas																			J. A. Bonilla, M. E.

NOTE.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,290 m., or 7,512.9 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabell m, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosí, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

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

Flushing	29.90	759.5	29.90	759.5	55.2	12.9		W			3					0.236	6.0		
Groningen	29.78	756.5	29.84	757.9	52.0	11.6		NW			2					0.295	7.5		
Helder	29.82	757.5	29.82	757.5	54.0	12.2		SSW			1					0.031	0.8		
Hellevoetsluis			29.87	758.6	53.8	12.1	94	SW			3								
Utrecht	29.83	757.7	29.88	758.9	54.7	12.6	83	SW			2		10			0.327	8.3	Dull	H. v d Brink.

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

NORWEGIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	29.57	751.0	29.62	752.4	48.2	9.0	89	S	22.2	9.9	.....	.....	10	.....	.....	0.315	8.0	.....	
Brönö	29.52	749.8	29.56	750.8	40.3	4.6	81	S	18	8	.....	.....	8	.....	.....	.....	.....	Raining	
Christiania	29.57	751.1	29.72	754.9	39.4	4.1	90	N	0	0	.....	.....	10	.....	.....	0.004	0.1	Light fog	
Tromsö	29.34	745.3	29.39	746.4	37.0	2.8	89	SW	7	3	.....	.....	10	.....	.....	0.138	3.5	Raining	
.....																			

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

PORTUGUESE SERIES.

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

Angra, (Azores)	30.00	761.9	30.19	766.8	62.8	17.1	88	W	12.5	5.6	.....	.....	7	.....	.....	0	0	.....	Dr. J. A. Sampaio.
Campo Major	29.10	739.0	30.13	765.3	57.6	14.2	41	NNW	13.0	5.8	.....	.....	1	.....	.....	0	0	.....	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.13	765.4	30.22	767.6	72.1	22.3	56	W	8.8	1.7	.....	.....	8	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.82	757.4	30.18	766.5	60.4	15.8	45	NNW	12.6	5.6	.....	.....	3	N	.....	0.071	1.8	.....	The Staff.
Ponta Delgada, (Azores)	30.17	766.2	30.24	768.0	68.0	20.0	58	WSW	9.4	4.2	.....	.....	3	.....	.....	0	0	.....	
.....																			
.....																			

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

Naval Series. Vessels.	Sea or swell. Height scale 0–9	Sea or swell. Direction from—	
S. S. India.	.....	.....	A. D. Pedroso, Com'd't Lt. S. A. P. de Mirando
.....	.....	.....	.....
.....	.....	.....	.....

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

RUSSIAN SERIES.

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

Warsaw	29.65	753.1	30.08	764.0	50.7	10.4	66	S	9	4	.....	.....	0	.....	.....	.....	.....	.....	Astronomical Obs.
Wilna	29.61	752.0	30.03	762.7	51.8	11.0	79	SW	4	2	.....	.....	1	.....	.....	.....	.....	.....	Astronomical Obs.
Dorpat	29.61	752.2	29.86	758.4	48.2	9.0	86	WSW	9	4	.....	.....	8	.....	.....	.....	.....	.....	Prof. Dr. Weihrauch
St. Petersburg	29.70	754.3	29.71	754.7	45.7	7.6	83	W	20	9	.....	.....	2	.....	.....	.....	.....	.....	Central Physical Obs.
Kuopio	29.27	743.4	29.59	751.6	40.5	4.7	100	W	22	10	.....	.....	10	.....	.....	Blank	Blank	.....	Ch. Forsten.
Kieff	29.50	749.3	30.15	765.9	44.8	7.1	77	Calm	0	0	.....	.....	3	.....	.....	.....	.....	.....	Physical Cabinet.
Nikolaiev	30.22	767.5	30.29	769.3	46.0	7.8	81	E	0	0	.....	.....	0	.....	.....	.....	.....	.....	Kurdakof.
Kertch	30.26	768.5	30.28	769.0	49.8	9.9	73	NE	9	4	.....	.....	1	.....	.....	.....	.....	.....	Lagorio.
Moscow	29.36	745.7	29.91	759.7	50.0	10.0	89	S	4	2	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Lugan	30.00	762.0	30.21	767.2	52.7	11.5	50	WSW	4	2	.....	.....	1	.....	.....	.....	.....	.....	Meteorological Obs.
Archangel	29.25	742.9	29.27	743.4	34.9	1.6	96	W	34	15	.....	.....	10	.....	.....	.....	.....	.....	Ogorodnikof.
Tiflis	28.77	730.7	30.19	766.7	57.4	14.1	77	Calm	0	0	.....	.....	2	.....	.....	.....	.....	.....	Physical Observatory.
Astrakhan	30.30	769.5	30.21	767.4	45.7	7.6	59	W	2	1	.....	.....	7	.....	.....	.....	.....	.....	Sebastianof.
Kasan	29.43	747.6	29.71	754.6	40.6	4.8	94	SW	4	2	.....	.....	10	.....	.....	.....	.....	.....	Physical Cabinet.
Orenburg	30.00	762.0	30.40	772.1	25.0	— 3.9	66	S	9	4	.....	.....	10	.....	.....	.....	.....	.....	Tschernischef.
Ekaterinburg	28.71	729.2	29.68	753.9	32.0	0.0	76	SW	9	4	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Nukuss	29.93	760.3	30.17	766.4	41.0	5.0	72	W	4	2	.....	.....	10	.....	.....	.....	.....	.....	
Kasaly	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Bobrof.
Tashkend	28.57	725.7	30.29	769.4	52.9	11.6	94	Calm	0	0	.....	.....	7	.....	.....	.....	.....	.....	Michelson.
Barnaul	29.76	755.9	30.32	770.0	26.1	— 3.3	82	Calm	0	0	.....	.....	1	.....	.....	.....	.....	.....	Meteorological Obs.
Yeniseisk	29.93	760.1	30.27	768.8	27.1	— 2.7	91	SE	2	1	.....	.....	10	.....	.....	.....	.....	.....	Marks.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Usolzef.
Oorga	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Mossin.
Peking, (China)	30.06	763.4	30.20	767.0	39.7	4.3	54	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Physical Observatory.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nikolaievsk, on the Amoor	.....	.....	.....	.....	20.3	— 6.5	87	W	2	1	.....	.....	10n	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Ekaterinburg, 306.4? m., or 1,005.2? ft.; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft.

SPANISH SERIES.

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

Barcelona, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Rave, Director.
Bilbao, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Manuel de Naveran
Burgos, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Domingo Martin y Perez.
Madrid, Royal Observatory	27.79	705.9	30.07	763.6	48.7	9.3	83	NW	5.2	2.33	.....	.....	10	.....	.....	0.429	10.9	Rainy	The Staff.
Murcia, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Olayo Diaz, Director.
Santiago, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.86	758.5	29.93	760.2	76.3	24.6	86	SSE	13.0	5.8	.....	.....	10n	.....	SSE	0.181	4.6	Raining	Benito Vines, S. J.
San Fernando, Naval Obs'y	30.02	762.6	30.12	765.1	62.1	16.7	57	WNW	17.3	7.8	.....	0	3	.....	NW	0.009	0.2	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.	.....	.....	29.92	760.0	79.2	26.2	91	SE	11.2	5.00	.....	3k	3kn	SE	SE	0.324	8.25	Cloudy	Leonardo de Tejeda, Chief of Engineers.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. tead of 8:19 a m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.50	749.3	29.54	750.3	28 0	— 2.2	.....	Calm	.....	.....	0	.....	4	.....	.....	0	0	.....	
Umea	29.61	752.0	29.66	753.3	38.5	3.6	77	NW	.....	.....	2	.....	0	.....	.....	0	0	.....	
Hernosand	29.65	753.2	29.71	754.5	43.7	6.5	81	W	.....	.....	2	.....	1	.....	.....	0	0	.....	
Stockholm	29.60	751.8	29.78	756.3	45.0	7.2	89	SW	.....	.....	2	.....	7	.....	.....	0.067	1.7	.....	
Wisby	29.71	754.6	29.77	756.1	49.6	9.8	92	NW	.....	.....	6	.....	10	.....	.....	0.106	2.7	Raining	
Sub-Series.																			
Upsala	29.69	754.1	29.76	756.0	44.8	7.1	90	SSW	3.8	1.7	.....	.....	8	W	.....	0.167	4.25	.....	Dr. Hildebrandsson.

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

SWISS SERIES.

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

Geneva	28.66	728.0	30.10	764.4	51.8	11.0	72	WNW	.....	.....	1	.....	8	.....	.....	0.012	0.3	Covered	The Observatory.
Zurich	28.47	723.0	30.11	764.7	53.2	11.8	71	NW	.....	.....	1	.....	7	.....	.....	0	0	Cloudy	The Observatory.

Note.—For Geneva the corresponding departures from the normal values are: Barometer, +1.8 mm; Thermometer, +2.7 cent.; Relative Humidity, —3 per cent.

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

TURKISH SERIES.

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

Constantinople	.....	.....	30.18	766.5	56.7	13.7	70	NNE	12	5.5	.....	.....	3	.....	NE	0	0	.....	The Observatory.
Fao, (Persian Gulf)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salonica	.....	.....	30.24	768.2	62.6	17	.....	NW	.....	.....	1	.....	10	.....	.....	.....	.....	.....	B. Stefanides.
Valona	.....	.....	30.18	766.6	64.8	18.2	.....	SW	.....	.....	1	.....	2	.....	.....	0	0	Slightly cl'dy	A. Bertrand.
Varna	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Imperial Observatory.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.88	758.9	30.00	761.9	73.6	23.1	51	SW	.....	.....	2	.....	2ks	.....	SW	0.26	6.6	D. clouds	Prof. C. V. A. Van Dyck

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

CANADIAN SERIES.

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

Bathurst, N. B	30.18	766.6	30.24	768.1	29.7	— 1.3	81	SW	4.5	2.0	.....	9	.....	.....	.....	0	0	.....	Hon. J. Ferguson.
Brockville, Ontario	.....	.....	30.16	766.1	39	3.9	.....	Calm	0	0	.....	.....	10s	.....	SW	0	0	Cloudy	W. R. Bigg.
*Chatham, N. B	.....	.....	30.29	769.4	28	— 2.2	88	SW	2	0.9	.....	8c	2ks	W	W	0	0	Fair	G. A. Blair.
Charlottetown, P. E. Island	.....	.....	30.37	771.4	37	2.8	80	SW	5	2.2	.....	0	0	.....	.....	0	0	Clear	H. J. Cundall, C. E.
Cornwall, Ontario	29.93	760.2	30.14	765.5	28.3	— 2.1	96	SW	.....	.....	1	10cs	0	.....	.....	0	0	Threatening	James Smith, M. A.
Dalhousie, N. B	30.09	764.3	30.13	765.3	25	— 3.9	88	W	.....	.....	1	.....	.....	.....	.....	0	0	Gloomy	H. A. Johnson.
Esquimault, B. C	30.06	763.5	30.10	764.5	47.3	8.5	92	NE	.....	.....	.....	.....	10n	.....	.....	0.12	3.0	Cloudy	W. H. Bevis.
*Father Point, Quebec	.....	.....	30.16	766.1	36	2.2	80	S	6	2.7	.....	.....	10s	.....	Calm	0	0	Threatening	J. McWilliams.
Fredericton, N. B	30.32	770.1	30.38	771.6	25.0	— 3.9	87	Calm	0	0	.....	1	Fog	.....	.....	0	0	Fair	Prof. Harrison.
*Fort Garry, Manitoba	.....	.....	30.55	776.0	13	—10.6	88	N	18	8.0	.....	5n	5ks	N	N	0	0	Cloudy	James Stewart.
Goderich, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	H. J. Strang, M. A
Granton, Ontario	28.81	731.8	29.94	760.5	38.1	3.4	90	SE	.....	.....	1	.....	10n	.....	.....	.....	.....	Raining	James Grant.
*Halifax, N. S	30.29	769.4	30.43	772.9	37	2.8	71	SW	6	2.7	.....	6c	0	.....	.....	0	0	Fair	F. Allison, M. A.
Hamilton, Ontario	29.64	752.8	30.02	762.5	37.9	3.3	88	E	.....	.....	1.	10cs	.....	E	.....	.....	.....	Heavy rain	Geo. Dickson, M. A
Heart's Content, N. F	30.23	767.8	30.26	768.6	33	0.6	70	NW	.....	.....	4	3k	2ks	NW	NW	0	0	Fine	E. Weedon.
*Kingston, Ontario	29.80	756.9	30.15	765.8	43	6.1	88	S	8	3.6	.....	.....	10s	.....	Calm	0	0	Cloudy	S. Woods, M. A.
Little Glace Bay, N. S	30.33	770.4	30.37	771.4	34.2	1.2	87	W	4	1.8	.....	2k	.....	W	.....	0	0	Clear	C. H. Rigby.
*Montreal, Quebec	29.97	761.2	30.18	766.6	38	3.3	75	S	16	7.2	.....	8cs	Haze	.....	.....	0	0	Cloudy	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.28	743.7	29.99	761.7	37	2.8	81	E	10	4.5	.....	.....	10n	.....	E	0	0	Cloudy	Rev. R. Mosley.
Peterboro, Ontario	29.30	744.2	30.08	764.0	33.7	0.9	87	Calm	.....	.....	0	.....	10n	.....	.....	0	0	Overcast	J. F. Jeffers, B. A.
Port Dover, Ontario	29.29	744.0	29.99	761.7	44	6.7	100	S	10	4.5	.....	.....	10n	.....	S	0.65	1.3	Light rain	H. Morgan.
Port Hastings, N. S	30.36	771.1	30.41	772.4	34.9	1.6	.....	W	2	0.9	.....	.....	.....	.....	.....	0	0	Fine	Peter Grant.
Port Stanley, Ontario	29.30	744.2	29.95	760.7	44	6.7	96	SE	15	6.7	.....	.....	10n	.....	E	0.17	4.3	Light rain	M. Payne.
*Quebec, Quebec	29.87	758.7	30.21	767.3	30	— 1.1	89	Calm	0	0	.....	.....	Sm'e	.....	.....	0	0	Smoky	Capt. Ashe, R. N.
*Rockliffe, Ontario	29.58	751.3	30.06	763.5	33	0.6	84	E	8	3.6	.....	.....	10s	.....	SE	0	0	Cloudy	W. H. McIntyre.
St. John, N. B	30.25	768.3	30.42	772.7	32	0.0	89	Calm	0	0	.....	2c	0	.....	.....	0	0	Fair	G. Murdock, C. E.
*Saugeen, Ontario	29.24	742.7	29.95	760.7	37	2.8	85	Calm	0	0	.....	.....	10s	.....	.....	0	0	Cloudy	K. Stewart.
Stayner, Ontario	.....	.....	30.03	762.7	35	1.7	86	Calm	0	0	.....	.....	10n	.....	Calm	0	0	Cloudy	R. J. Cole.
Stratford, Ontario	28.66	728.0	29 98	761.5	36.7	2.6	84	SE	5.0	2.2	.....	.....	10n	.....	.....	.....	.....	Light rain	C. J. MacGregor, M. A.
*Sydney, C. B	30.34	770.6	30.37	771.4	35	1.7	65	SW	7	3.1	.....	2c	0	.....	.....	0	0	Clear	T. C. Hill.
*Toronto, Ontario	29.66	753.4	30.05	763.3	43	6.1	77	SE	6	2.7	.....	.....	10n	.....	Calm	0	0	Cloudy	Magnetic Observatory.
Windsor, N S	30.33	770.4	30.43	772.9	33.5	0.8	95	W	0	0	.....	2c	0	.....	.....	0	0	Clear	Prof. John E. Oram.
Woodstock, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Montgomery.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	34.0	1.1	100	NW	.....	.....	.....	0	5s	.....	.....	0.60	15.2	Squally	John Delany

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

1877.—November 8.

UNITED STATES SERIES.

By authority of the SECRETARY OF WAR.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	30.08	764.0	30.31	769.9	41	5.0	73	S	9	4.0	.....	5cs	2s	SW	Calm	0	0	Fair	
Alpena, Michigan	29.26	743.2	29.93	760.2	36	2.2	90	Calm	0	0	.....	.....	10n	.....	Calm	0.01	0.3	Light rain	
Atlantic City, New Jersey	30.30	769.6	30.32	770.1	55	12.8	74	SE	20	8.9	.....	5ck	2s	SW	SE	0	0	Cloudy	
Augusta, Georgia	30.76	755.9	29.95	760.7	59	15.0	100	E	6	2.7	.....	.....	10s	.....	E	0.82	20.8	Cloudy	
Baltimore, Maryland	30.26	768.6	30.31	769.9	44	6.7	75	NE	4	1.8	.....	.....	10s	.....	SW	0	0	Cloudy	
Barnegat, New Jersey	30.30	769.6	30.33	770.4	54	12.2	79	SE	20	8.9	.....	0	5s	.....	SE	0	0	Fair	
Bismarck, Dakota	28.54	724.9	30.36	771.1	21	— 6.1	85	N	24	10.7	.....	.....	10s	.....	N	Inap.	Inap.	Cloudy	
Boise City, Idaho	27.60	701.0	30.36	771.1	36	2.2	85	Calm	0	0	.....	0	5s	.....	Calm	0	0	Fair	
Boston, Massachusetts	30.27	768.8	30.43	772.9	42	5.6	74	SW	5	2.2	.....	3c	7s; fg	NW	SW	0	0	Cloudy	
Brackettville, Texas	29.02	737.1	30.06	763.5	48	8.9	37	N	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Breckenridge, Minnesota	29.89	759.2	30.15	765.8	26	— 3.3	88	N	23	10.3	.....	.....	10s	.....	Calm	0.13	3.3	Cloudy	
Brownsville, Texas	29.99	761.7	30.06	763.5	57	13.9	68	N	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Buffalo, New York	29.28	743.7	30.00	762.0	42.0	5.6	74	SE	4	1.8	.....	1ck	5s	SW	SW	0	0	Fair	
Burlington, Vermont	29.99	761.7	30.26	768.6	41	5.0	56	S	20	8.9	.....	0	0	.....	.....	0	0	Clear	
Cairo, Illinois	29.26	743.2	29.64	752.8	52	11.1	93	SW	6	2.7	.....	.....	10n	.....	Calm	0.89	22.6	Light rain	
Camp Grant, Arizona	25.40	645.2	30.20	767.1	53	11.7	19	W	.....	.....	1	0	0	.....	.....	0	0	Clear	
Camp Verde, Arizona	27.06	687.3	30.55	776.0	40	4.4	48	W	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Campo, California	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Cape Hatteras, N. Carolina	30.12	765.0	30.12	765.0	68	20.0	84	SE	24	10.7	.....	.....	10s	.....	SE	0	0	Cloudy	
Cape Henry, Virginia	30.16	766.1	30.19	766.8	60	15.6	88	E	18	8.0	.....	.....	10s	.....	SE	0	0	Cloudy	
Cape Lookout, N. Carolina	30.12	765.0	30.14	765.5	70	21.1	90	SE	30	13.4	.....	.....	10n	.....	SE	Inap.	Inap.	Light rain	
Cape May, New Jersey	30.25	768.3	30.28	769.1	55	12.8	68	E	18	8.0	.....	8cs	2s	NW	SE	0	0	Cloudy	
Charleston, South Carolina	29.94	760.5	30.00	762.0	69	20.6	95	SE	8	3.6	.....	.....	10n	.....	Calm	0.32	8.1	Light rain	
Cheyenne, Wyoming	24.20	614.7	30.14	765.5	22	— 5.6	85	NW	28	12.5	.....	0	0	.....	.....	0	0	Clear	
Chicago, Illinois	29.00	736.6	29.68	753.9	45	7.2	100	E	12	5.4	.....	.....	10n	.....	Calm	0.22	5.6	Light rain	
Cincinnati, Ohio	29.06	738.1	29.70	754.4	49	9.4	85	SE	4	1.8	.....	.....	10n	.....	Calm	0.81	20.6	Light rain	
Cleveland, Ohio	29.20	741.7	29.93	760.2	43	6.1	83	SE	16	7.2	.....	.....	10n	.....	SE	0.20	5.1	Heavy rain	
Concho, Texas	28.21	716.5	29.94	760.5	47	8.3	68	NW	12	5.4	.....	3c	0	NW	.....	0	0	Clear	
Corsicana, Texas	29.52	749.8	30.00	762.0	45	7.2	76	NW	8	3.6	.....	Haze	0	Calm	.....	0	0	Clear	
Davenport, Iowa	29.10	739.1	29.75	755.6	35	1.7	90	N	7	3.1	.....	.....	10s	.....	Calm	0.03	0.8	Cloudy	
Denison, Texas	29.13	739.9	29.94	760.5	45	7.2	68	NW	12	5.4	.....	.....	8ks	.....	NW	0	0	Fair	
Denver, Colorado	25.00	635.0	30.22	767.6	32	0.0	60	W	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Detroit, Michigan	29.18	741.2	29.85	758.2	41	5.0	100	E	5	2.2	.....	.....	10n	.....	Calm	0.20	7.4	Light rain	
Dodge City, Kansas	27.44	697.0	29.78	756.4	38	3.3	63	N	32	14.3	.....	.....	10s	.....	N	0.01	0.3	Cloudy	
Dubuque, Iowa	29.09	738.9	29.80	756.9	34	1.1	90	NE	4	1.8	.....	.....	10s	.....	Calm	0.05	1.3	Cloudy	
Duluth, Minnesota	29.28	743.7	29.97	761.2	34	1.1	90	NE	8	3.6	.....	.....	10ks	.....	SE	0.04	1.0	Threatening	
Eagle Pass, Texas	29.39	746.5	30.16	766.1	47	8.3	48	N	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Eastport, Maine	30.30	769.6	30.37	771.4	44	6.7	83	S	8	3.6	.....	5c; hz	Haze	Calm	Calm	0	0	Hazy	
Erie, Pennsylvania	29.18	741.2	29.89	759.2	44	6.7	84	S	20	8.9	.....	.....	10s	.....	S	Inap.	Inap.	Cloudy	
Escanaba, Michigan	29.26	743.2	29.93	760.2	33	0.6	80	N	5	2.2	.....	.....	10s	.....	N	0.10	2.5	Cloudy	
Florence, Arizona	28.65	727.7	30.25	768.3	40	4.4	18	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Fort Bayard, New Mexico	24.25	615.9	30.21	767.3	31	— 0.6	41	NW	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Fort Craig, New Mexico	25.74	653.8	.....	.....	33	0.6	80	NW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Fort Gibson, Indian Ter	29.29	744.0	29.84	757.9	42	5.6	83	N	12	5.4	.....	.....	10s	.....	N	0.12	3.0	Cloudy	
Fort Griffin, Texas	28.83	732.3	30.14	765.5	45	7.2	45	NW	16	7.2	.....	0	2s	.....	Calm	0	0	Fair	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	28.77	730.7	29.90	759.4	43	6.1	66	NW	10	4.5	.....	0	5s	.....	NW	0	0	Fair	
Galveston, Texas	29.96	761.0	30.00	762.0	53	11.7	67	NW	18	8.0	.....	0	0	.....	.....	0.65	16.5	Clear	
Grand Haven, Michigan	29.14	740.1	29.80	756.9	36	2.2	95	NE	5	2.2	.....	.....	10n	.....	NE	0.20	5.1	Light rain	
Indianapolis, Indiana	28.91	734.3	29.67	753.6	47	8.3	92	SE	9	4.0	.....	.....	10n	.....	SE	0.74	18.8	Light rain	
Indianola, Texas	30.06	763.5	30.09	764.3	55	12.8	56	N	32	14.3	.....	0	0	.....	.....	0.08	2.0	Clear	
Jacksboro, Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Jacksonville, Florida	29.90	759.4	29.92	760.0	74	23.3	90	SE	8	3.6	.....	.....	10s	.....	SE	0.85	21.6	Cloudy	
Keokuk, Iowa	29.02	737.1	29.64	752.8	36	2.2	80	N	6	2.7	.....	.....	10s	.....	Calm	0.01	0.3	Cloudy	
Key West, Florida	29.89	759.2	29.93	760.2	80.0	26.7	86	N	4	1.8	.....	.....	5ks	.....	S	0.03	0.8	Threatening	
Kittyhawk, North Carolina	30.18	766.6	30.21	767.3	65	18.3	89	SE	20	8.9	.....	.....	10ks	.....	SE	0	0	Cloudy	
Knoxville, Tennessee	28.82	732.0	29.80	756.9	54	12.2	79	N	8	3.6	.....	.....	10ks	.....	S	0	0	Cloudy	
La Crosse, Wisconsin	29.11	739.4	29.87	758.7	31	— 0.6	79	N	6	2.7	.....	.....	10s	.....	Calm	0.08	2.0	Cloudy	
La Mesilla, New Mexico	26.31	668.3	30.46	773.7	33	0.6	32	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Laredo, Texas	.....	.....	.....	.....	48	8.9	70	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Leavenworth, Kansas	28.98	736.1	29.84	757.9	35	1.7	90	N	12	5.4	.....	.....	10s	.....	N	0.22	5.6	Cloudy	
Los Angeles, California	29.82	757.4	30.16	766.1	58	14.4	34	N	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Louisville, Kentucky	29.11	739.4	29.66	753.4	52	11.1	93	SE	6	2.7	.....	.....	10n	.....	SE	1.20	30.5	Light rain	
Lynchburg, Virginia	29.51	749.5	30.20	767.1	48	8.9	78	NE	4	1.8	.....	.....	10n	.....	Calm	0.15	3.8	Light rain	
Maricopa Wells, Arizona	.....	.....	.....	.....	30	— 1.1	47	N	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Marquette, Michigan	29.20	741.7	29.92	760.0	33	0.6	69	W	4	1.8	.....	.....	10s	.....	Calm	0	0	Cloudy	
Mason, Texas	28.48	723.4	30.28	769.1	45	7.2	84	NW	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Memphis, Tennessee	29.40	746.7	29.71	754.6	55	11.7	93	SW	8	3.6	.....	.....	10s	...	SW	2.35	59.7	Threatening	
Milwaukee, Wisconsin	29.12	739.6	29.80	756.9	42	5.6	100	NE	10	4.5	.....	.....	10s	.....	NE	0.08	2.0	Cloudy	
Mobile, Alabama	29.80	756.9	29.85	758.2	63	17.2	100	S	6	2.7	.....	.....	10n	.....	S	0.74	18.8	Heavy rain	
Montgomery, Alabama	29.65	753.1	29.88	758.9	54	12.2	90	E	4	1.8	.....	.....	10s	.....	S	0.12	3.0	Cloudy	
Morgantown, West Virginia	28.88	733.5	29.92	760.0	54	12.2	73	SE	10	4.5	.....	.....	10n	.....	S	Inap.	Inap.	Light rain	
Mt. Washington, N. H.	23.91	607.3	30.27	768.8	25	— 3.9	75	SW	66	29.5	.....	2c	0	NE	.....	0	0	Clear	
Nashville, Tennessee	29.12	739.6	29.64	752.8	56	13.3	87	S	7	3.1	.....	.....	10n	.....	S	0.39	9.9	Light rain	
New Haven, Connecticut	30.26	768.6	30.38	771.6	41	5.0	83	Calm	0	0	.....	5c	Fog	W	Calm	0	0	Fair	
New London, Connecticut	30.36	771.1	30.41	772.4	41	5.0	82	N	4	1.8	.....	10k	0	S	.....	0	0	Cloudy	
New Orleans, Louisiana	29.80	756.9	29.86	758.4	64	17.8	91	W	4	1.8	.....	.....	9ks	.....	W	2.30	58.4	Cloudy	
Newport, Rhode Island	30.38	771.6	30.43	772.9	49	9.4	85	S	8	3.6	.....	.....	10ks	.....	S	0	0	Cloudy	
New York, New York	30.19	766.8	30.38	771.6	44	6.7	75	NE	2	0.9	.....	2c	Fog	S	.....	0	0	Foggy	
Norfolk, Virginia	30.15	765.8	30.21	767.3	58	14.4	93	E	6	2.7	.....	10k	0	SE	.....	0	0	Cloudy	
North Platte, Nebraska	27.18	690.4	29.84	757.9	33	0.6	89	NW	40	17.9	.....	.....	10s	.....	NW	0.17	4.3	Cloudy	
Olympia, Washington Ter.	30.06	763.5	30.10	764.5	44	6.7	92	S	2	0.9	.....	.....	10n	.....	Calm	0.74	18.8	Light rain	
Omaha, Nebraska	28.77	730.7	29.87	758.7	34	1.1	90	N	12	5.4	.....	.....	10n	.....	Calm	0.36	9.1	Light snow	
Oswego, New York	29.84	757.9	30.17	766.3	44	6.7	52	SE	10	4.5	.....	10cs	0	Calm	.....	0	0	Cloudy	
Pembina, Dakota	29.62	752.3	30.52	775.2	16	— 8.9	83	N	20	8.9	.....	10k	0	N	.....	0.03	0.8	Cloudy	
Philadelphia, Pennsylvania	30.30	769.6	30.35	770.9	39	3.9	91	NE	10	4.5	.....	5c	2ks	N	W	0	0	Fair	
Phœnix, Arizona	.....	.....	.....	.....	39	3.9	47	N	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Pike's Peak, Colorado	17.71	449.8	29.92	760.0	— 6	—21.1	61	NE	9	4.0	.....	.....	Haze	.....	Calm	0.08	2.0	Hazy	
Pioche, Nevada	24.36	618.7	30.13	765.3	31	— 0.6	68	N	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Pittsburg, Pennsylvania	29.11	739.4	29.92	760.0	49	9.4	77	SE	8	3.6	.....	.....	10s	.....	SW	0	0	Cloudy	
Port Huron, Michigan	29.20	741.7	29.87	758.7	40	4.4	100	SE	4	1.8	.....	.....	10n	.....	Calm	0.23	5.8	Heavy rain	
Portland, Maine	30.34	770.6	30.39	771.9	38	3.3	63	SW	11	4.9	.....	1c	Haze	Calm	.....	0	0	Clear	
Portland, Oregon	30.14	765.5	30.24	768.1	47	8.3	92	SW	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Prescott, Arizona	25.03	635.8	30.39	771.9	30	— 1.1	38	NE	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Punta Rassa, Florida	29.91	759.7	29.93	760.2	77	25.0	86	SE	16	7.2	.....	0	8ks	.....	Calm	0.06	1.5	Threatening	
Red Bluff, California	29.88	758.9	30.25	768.3	48	8.9	85	N	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Rochester, New York	29.46	748.3	30.08	764.0	42	5.6	65	S	8	3.6	.....	.....	10s	.....	SW	0	0	Cloudy	
Roseburg, Oregon	29.66	753.4	30.25	768.3	40	4.4	100	Calm	0	0	.....	0	Fog	.....	Calm	0	0	Clear	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	BAROMETER. Corrected for instrum'tal error and temperature. Inches.	BAROMETER. Corrected for instrum'tal error and temperature. Millimeters	BAROMETER. Reduced to sea-level. Inches.	BAROMETER. Reduced to sea-level. Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Upper. From—	CLOUDS. Direction. Lower. From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	WEATHER.	OBSERVER.
Sacramento, California	30.15	765.8	30.24	768.1	47	8.3	92	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
St. Louis, Missouri	29.09	738.9	29.66	753 4	46	7.8	92	NW	10	4.5	.....	.....	10n	.....	Calm	0.27	6.9	Light rain	
St. Marks, Florida	29.88	758.9	29.89	759.2	68	20.0	100	S	10	4.5	.....	.....	10s	.....	S	0.23	5.8	Cloudy	
St. Paul, Minnesota	29.04	737.6	29.89	759.2	31	—0.6	89	NE	1	0.4	.....	.....	10n	.....	Calm	0.15	3.8	Light snow	
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salt Lake City, Utah	26.00	660.4	30.34	770.6	40	4.4	73	SE	4	1.8	.....	0	2s	.....	Calm	0	0	Clear	
San Antonio, Texas	29.39	746.5	29.98	761.5	52	11.1	47	NW	10	4.5	.....	0	0	.....	.....	0	0	Clear	
San Diego, California	30.09	764.3	30.16	766.1	56	13.3	45	NE	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Sandusky, Ohio	29.17	740.9	29.84	757.9	46	7.8	92	SE	12	5.4	.....	.....	10n	.....	Calm	0.53	13.5	Heavy rain	
Sandy Hook, New Jersey	30.34	770.6	30.36	771.1	50	10.0	86	SE	10	4 5	.....	8c	Sm'e	W	.....	0	0	Cloudy	
San Francisco, California	30.14	765.5	30.21	767.3	55	12.8	87	N	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Santa Fé, New Mexico	23.40	594.4	29.94	760.5	18	—7.8	84	N	4	1.8	.....	0	Haze	.....	.....	0	0	Clear	
Savannah, Georgia	29.88	758.9	29.97	761.2	70	21.1	95	S	8	3.6	.....	10s	Fog	S	.....	1 37	34.8	Clearing	
Shreveport, Louisiana	29.68	753.9	29.90	759.4	47	8.3	92	N	8	3.6	.....	0	0	.....	.....	0.75	19.1	Clear	
Smithville, North Carolina	30.06	763.5	30.10	764.5	68	20.0	95	SE	18	8.0	.....	.....	10s	.....	SE	0	0	Cloudy	
Springfield, Massachusetts	30.19	766.8	30.33	770.4	37	2.8	80	Calm	0	0	.....	2k	Fog	S	.....	0	0	Fair	
Stanwix, Arizona	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Stockton, Texas	27.16	689.8	30.16	766.1	30	—1.1	68	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Thatcher's Island, Mass	30.37	771.4	30.43	772.9	45	7.2	84	SW	16	7.2	.....	2k	0	SW	.....	0	0	Fair	
Toledo, Ohio	29.15	740.4	29.82	757.4	43	6.1	100	Calm	0	0	.....	.....	10n	.....	S	0.36	9.1	Heavy rain	
Tucson, Arizona	27.75	704.8	30.30	769.6	35	1.7	34	SW	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Tybee Island, Georgia	29.93	760 2	29.96	761.0	69	20.6	95	SE	6	2.7	.....	.....	10ks	.....	Calm	1.02	25.9	Cloudy	
Umatilla, Oregon	30.00	762.0	.....	.....	38	3.3	100	SE	4	1.8	.....	.....	Fog	.....	Calm	0	0	Foggy	
Vicksburg, Mississippi	29.59	751.6	29.85	758 2	54	12.2	93	SW	16	7.2	.....	.....	10n	.....	SW	2.82	71.6	Light rain	
Virginia City, Montana	24.55	623.6	30.03	762.7	22	—5.6	72	Calm	0	0	.....	0	0	.....	.....	0.05	1.3	Clear	
Visalia, California	29.91	759.7	30.20	769.4	42	5.6	91	E	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Washington, D. C	30.18	766.6	30.28	769.1	40	4.4	91	NE	7	3.1	.....	5os	5s; sm	W	S	0	0	Smoky	
Wickenburg, Arizona	.....	.....	.....	.....	38	3.3	31	N	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Wilmington, N. Carolina	30.00	762.0	30.08	764.0	69	20.6	98	SE	16	7.2	.....	.....	10s	.....	SE	0	0	Cloudy	
Winnemucca, Nevada	29.00	660.4	30.36	771.1	31	—0.6	79	NE	18	5.8	.....	0	0	.....	.....	0	0	Clear	
Wood's Holl, Mass	30.38	771.6	30.44	773.2	52	11.1	73	SW	10	4.5	.....	0	2s	.....	SW	0	0	Fair	
Yankton, Dakota	28.76	730.5	30.11	764.8	30	—1.1	83	NW	28	12.5	.....	.....	10s	.....	NW	0.07	1.8	Cloudy	
Yuma, Arizona	30.10	764.5	30.27	768.8	45	7.2	37	N	4	1.8	.....	.....	.....	.....	.....	0	0	Clear	
SUB-SERIES.																			
York Factory, B. A	30.42	772.7	30.48	774.2	—6.0	—21.1	100	W	20	8.9	.....	.....	10n	.....	.....	0.15	3.8	Snowing	J. Fortescue, W. Wood
Havana, Cuba, W. I	29.80	758.4	29.88	758.9	77	25.0	86	SE	9.6	4.3	.....	8c	8n	Calm	SE	0.25	6.3	Light rain	Chas. Hasselbrink.
Kingston, Jamaica, W. I	30.07	763.8	30.08	764.0	82	27.8	83	SE	16	7.2	.....	8c	5n	SE	SE	0	0	.....	James Gall.
Navassa, W. I	29.84	757.9	29.92	760.0	83	28.3	.....	E	25	11.2	.....	.....	.....	.....	.....	0	0	Cloudy	F. M Everett.
St. Thomas, W. I	.....	.....	.....	.....	83	28.3	79	NE	3	1.3	.....	2c	2k	E	.....	0	0	.....	G. O. Gellich.
Paramaribo, D. Guiana, S. A	.....	.....	29.98	761.5	84	28.9	75	E	.....	.....	2	3c	6k	E	.....	0	0	Fair	C. J. Hering.
Batavia, Dutch Guiana, S. A	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Dr. H. Groot.
Medellin, Colombia, S. A	25.20	640.1	.....	.....	66.2	19.0	84	Calm	.....	.....	0	2cs	1s	.....	.....	0.16	4.1	Fair	Thomas Herran.
Honolulu, Oahu, H. I	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Daniel Smith.
Makawao, Maui, H. I	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters: Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.: Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573,4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,676 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,916.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.64 in.; Stockton, 3.00 in. Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

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

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

STATIONS AND VESSELS.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard Mare Island, Cal.	30.20	767.1	53	11.7	53	11.7	73	NE	2	0.9	.....	.....	2cs	.....	Calm	0	0	.....	.....	.....	
Navy Yard, Pensacola, Fla.	29.98	761.5	.....	.....	66	18.9	??	NW	1	0.4	.....	.....	10	.....	.....	1.55	39.4	.....	.....	Raining.....	
Navy Yard, Portsmouth, N.H	30.20	767.1	60	15.6	36	2.2	80	SW	3	1.3	.....	.....	9	.....	.....	0	0	.....	.....	Cloudy.....	
Naval Hospital, Yokohama, Japan.....	29.95	760.7	57	13.9	49	9.4	89	NW	.....	.....	1	.....	3s	.....	W	0	0	.....	.....	Fair.....	
Adams. S. 47° 9′, W. 64° 31′.....	30.12	765.0	51	10.6	50	10.0	86	N	.....	.....	2	.....	8	.....	S	Light	Light	Long	S	D. clouds.....	
Alert, Yokohama, Japan.....	30.07†	763.8†	55	12.8	55	12.8	80	WNW	.....	.....	2	.....	8	.....	NW	.....	.....	Smooth	.....	D. clouds.....	
Alliance, Constantinople, Turkey.	30.36	771.1	66	18.9	61	16.1	88	NE	.....	.....	3	.....	4	.....	NE	.....	.....	.....	.....	Pleasant.....	
Ashuelot. Tientsin, China.....	30.26	768.6	58	14.4	44	6.7	68	Calm	.....	.....	0	.....	0	.....	.....	.....	.....	Smooth	.....	Blue sky.....	
Canonicus, New Orleans, La.....	29.87	758.7	49	9.4	64	17.8	94	SW	.....	.....	2	.....	10	.....	W	.....	.....	.....	.....	Cloudy.....	
Colorado, New York, N. Y.....	30.47	773.9	67	19.4	43	6.1	83	SE	0.3	0 1	.....	.....	8	.....	WSW	.....	.....	.....	.....	Dense fog....	
Despatch, Constantinople, Turkey.	30.30	769.6	59	15.0	61	16.1	66	NE	.....	.....	3	.....	3	.....	N&E	.....	.....	.....	.....	Clear	
Essex. Cape Palmas, Guinea...	29.88	758 9	82	27.8	83	28.3	??	ESE	.....	.....	1	.....	3	.....	.....	.....	.....	Long	SW	D clouds.....	
Franklin, Norfolk, Va.....	30.30	769.6	70	21.1	59.5	15.3	85	ESE	6.5	2.9	.....	.....	8	.....	ESE	0	0	.....	.....	Overcast.....	
Gettysburg, Malta	29.97‡	761.2‡	.....	.....	71	21.7	100	Calm	.....	.....	0	.....	9	.....	Calm	Blank	Blank	.....	.....	D. clouds.....	
Guard, N. 37° 35′, W. 54° 50′.....	30.55	776.0	62	16.7	61	16.1	82	ENE	.....	.....	3	.....	5	.....	NE	.....	.....	Long	NE	D. clouds.....	
Marion, Smyrna, Turkey.....	30.05	763.3	65	18.3	65	18.3	94	NE	.....	.....	1	.....	2	.....	NE	0	0	Smooth	.....	D. clouds.....	
Michigan, Erie, Pa.....	29.40	746.7	60	15.6	45	7.2	68	SE	.....	.....	4	.....	10	.....	SE	.....	.....	.....	.....	Cloudy.....	
Monocacy, Yokohama, Japan.....	29.96	761.0	64	17.8	53	11.7	80	N	.....	.....	0–1	.....	5	.....	.....	.....	.....	.....	.....	D. clouds.....	
Monongahela, N. 36° 42′, W. 1° 42′.....	30.05	763.3	56	13.3	67	19.4	79	W	.....	.....	3	.....	ks	.....	.....	Light	Light	Smooth	.....	D. clouds.....	
New Hampshire, Port Royal, S.C.....	30.14	765 5	.....	.....	70	21.1	100	SE	12	5.4	.....	.....	8	.....	S	0.95	24.1	.....	.....	D. clouds.....	
Omaha, Callao, Peru.....	30.08	764.0	70.5	21.4	69	20.6	85	Calm	0	0	.....	.....	10	.....	Calm	0	0	Smooth	.....	Dull	
Onward, Callao, Peru.....	30.02	762.5	70	21.1	69	20.6	80	E	.....	.....	1	.....	10	.....	.....	.....	.....	Long	W	D. clouds.....	
Ossipee, N 36° 54′ W. 76° 20′.....	30.30	769.6	74	23.3	62	16.7	77	E	.....	.....	4	.....	9	.....	E	.....	.....	.....	.....	D. clouds...	
Palos, Shanghai, China.....	30.28	769.1	62	16.7	56	13.3	100	E	.....	.....	1	.....	10	.....	Calm	.....	.....	.....	.....	Raining.....	
Pensacola, Mare Island, Cal.....	30.29	769.4	.....	.....	54	12.2	80	N&W	.....	.....	0–1	.....	0	.....	.....	.....	.....	.....	.....	Clear	
Plymouth, Norfolk, Va.....	30.24	768.1	58	14.4	59	15.0	100	ENE	.....	.....	1	.....	9	.....	.....	.....	.....	.....	.....	Overcast.....	
Ranger, Shanghai, China.....	30.37	771.4	.....	.....	59	15.0	88	ENE	.....	.....	1	.....	10	.....	Calm	.....	.....	.....	.....	Rainy.....	
Rio Bravo, Brownsville, Texas.....	29.95	760.7	.....	.....	57	13.9	81	NW	.....	.....	3	.....	.....	.....	.....	.....	.....	.....	.....	Blue sky.....	
Santee, Annapolis, Md	30.37	771 4	69	20.6	47	8.3	85	E	.....	.....	1	.....	10	.....	S	0	0	.....	.....	Overcast.....	
Saratoga, Hampton Roads, Va.....	30.60†	777.2†	.....	.....	63	17.2	??	ENE	.....	.....	3	.....	9	.....	E	0	0	.....	.....	Cloudy.....	
St. Louis, League Island, Pa	30.20	767.1	36	2.2	36	2.2	90	N	5	2.2	.....	.....	6	.....	SE	0	0	.....	.....	Fair.....	
Swatara, Hampton Roads, Va.....	30.26	768.6	.....	.....	60	15.6	88	ENE	.....	.....	3	.....	9	.....	S&E	.....	.....	.....	.....	Hazy.....	
Tennessee, Yokohama, Japan.....	30.04	763.0	61	16.1	52	11.1	79	NW	4.5	2.0	.....	.....	5	.....	N&E	0	0	None	.....	D. clouds	
Trenton, Villefranche, France.....	30.22	767.6	69	20.6	66	18.9	68	NE	5	2.2	.....	.....	5	.....	N&E	0	0	.....	.....	D. clouds....	
Vandalia, Villefranche, France.,...	30.21	767.3	65	18.3	64	17.8	68	SE	.....	.....	1–2	.....	4	.....	SE	.....	.....	.....	.....	D clouds....	
Wabash, Boston, Mass.....	30.45	773.4	55	12.8	43	6.1	75	SW	6	2.7	.....	.....	10	.....	Calm	0	0	.....	.....	D. clouds.....	
Wyoming, Washington, D. C.....	30.46†	773.7†	.....	.....	40	4.4	.....	E	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	D. clouds.....	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. ‡ Barometer corrected for instrumental error and reduced to sea-level.

UNITED STATES MARINE SERIES.

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

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.			Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.	Character.	Direction from—		
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—				
PACIFIC MAIL S. S. CO. MARINE SERIES.																		
Furnished by the coöperation of ——————, President; Williams, Blanchard & Co., Agents.																		
S. S. Alaska																		Capt. Seabury.
S. S. China																		Capt. Berry.
S. S. City of New York																		Capt. Cobb.
S. S. City of Panama, N. 15° 42′ 22″, W. 97° 26′ 24″			29.66	753.4	83	28.3	83	Var.			2		5		E	Light	E	D. clouds	Capt. Howard.
S. S. City of Peking, N. 30° 50′, E. 156° 66′			30.03*	762.7*	52	11.1	73	SE			1		8		SE	Small	NW	D. clouds	Lt. Z. L. Tanner, U.S.N.
S. S. City of Sydney																		Capt. Dearborn.
S. S. City of Tokio, N. 30° 3d′, W. 145° 35′			30.27	768.8	66	18.9		NE			4					Chop	NW&SW	Blue sky	Capt. Maury.
S. S. Colima																		Capt. Searle.
S. S. Costa Rica																		Capt. Whitebury.
S. S. Dakota																		Capt. Morse.
S. S. Georgia																		Capt. Cavarly.
S. S. Grenada																		Capt. Connolly.
S. S. Wilmington																		Capt. Austin.

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

WHITE STAR LINE MARINE SERIES.

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

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

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

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

S. S. Belgic, N. 30° 33′, E. 160° 52′			30.20†	767.1†				W			3–4		Light		SW	Short		D. clouds	Capt. John Metcalf.
S. S. Gaelic																			Capt. W. H. Kidley.
S. S. Oceanic, N. 28° 0′, E. 117° 15′			29.89	759.2	70	21.1	90	NE			4–5		9		NE; Calm	Rough	NE	Showery	Capt. H. Parsell.

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

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

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

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig																			Capt. K. Undütsch.
S. S. Nürnberg, N. 44° 24′, W. 37° 15′			29.86	758.4	58.0	14.4	76	NW			8		k		NW	Heavy	WNW	Raining	Capt. A. Jaeger.
S. S. Ohio, N. 49° 6′, W. 22° 12′			29.90	759.4	54.0	12.2	74	W			8		k		W	Heavy	SW	Squally	Capt. G. Meyer.

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

UNITED STATES MARINE SERIES.—Continued.

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

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Lo'wr	Upper.	Lower.	Character	Direction from—		
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second	0—10.	0—10.	0—10.	From—	From—				
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			Captain Shackelford.
S. S. Illinois																			
S. S. Indiana, Philadelphia, Pa			30.29*	769.4*	43	6.1	75	WSW			7		7		NNW			Cloudy	Captain Sargent.
S. S. Ohio. N. 51° 09′, W. 28° 13′			29.17	740.9	49	9.4	85	SW			8		5		SW	Very Rough	WSW	Squally	Captain Morrison.
S. S. Pennsylvania, N. 49° 15′, W. 39° 02′			29.23†	742.4†	43	6.1	100	W			10		9		W	Heavy	W	Cloudy	Captain Harris.

NOTE.—The originals give the barometer as read off; the wind-force by the scale 0 to 12. *Aneroid; correction for elevation applied, instrumental error not known.
†Corrected for temperature and elevation, instrumental error not known.

RED STAR LINE MARINE SERIES.

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

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

ALLAN LINE MARINE SERIES.

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

																			Capt. W. Richardson.
S. S. Hibernian																			
S. S. Scandinavian																			

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller Off Gloucester, Mass.			30.39	771.9	47	8.3	92	SSW	7	3.1			5d		SSW	Smooth		Clear.	Capt. James Jorgensen.

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

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

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

Albert J. Myer

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

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON NOVEMBER 9, 1877.

7:35 A. M. WASHINGTON mean time.

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

1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:38 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.

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

ALGERIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours	.....	.....	30.14	765.5	68.0	20.0	53	Calm	.....	.....	0	.....	0	.....	.....	0.047	1.2	Clear	Michel.
Algiers	.....	.....	30.08	763.9	65.3	18.6	75	N	.....	.....	2	.....	4	.....	.....	0	0	Cloudy	Peter.
La Calle	.....	.....	30.13	765.2	68.4	20.2	74	NW	.....	.....	1	.....	5	.....	.....	0	0	Cloudy	Fleury.
Tunis	.....	.....	30.15	765.8	66.7	19.3	70	E	.....	.....	3	.....	4	.....	.....	0	0	Cloudy	Jacques.
Sfax	.....	.....	30.17	766.2	68.0	20.0	.....	N	.....	.....	1	.....	5	.....	.....	0	0	Cloudy	Husson.
Saida	.....	.....	30.17	766.4	52.9	11.6	56	ESE	.....	.....	2	.....	2	.....	.....	0.728	18.5	Fair	Millot.
Tebessa	.....	.....	30.13	765.2	.....	.....	.....	E	.....	.....	1	.....	1	.....	.....	.....	.....	Very fair	Bourgeois.
Geriville	.....	.....	30.11	764.9	57.6	14.2	69	E	.....	.....	2	.....	5	.....	.....	0.47	12.	Cloudy	Lemaillot.
Laghouat	.....	.....	30.17	766.4	64.4	18.0	53	W	.....	.....	2	.....	2	.....	.....	0	0	Fair	Guyot.
Biskra	.....	.....	30.13	765.4	72.5	22.5	28	NW	.....	.....	1	.....	4	.....	.....	0	0	Cloudy	Kuntz.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

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

AUSTRIAN SERIES.

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

Agram	29.56	750.8	30.11	764.9	53.1	11.7	66	Calm	.....	.....	0	.....	0	.....	.....	0	0	.....	Prof. Ivan Stoair
Cracow, I. R. Observatory	29.36	745.8	30.14	765.5	51.4	10.8	61	NE	.....	.....	1	.....	0	.....	.....	0	0	.....	Dr. Wierzbiski.
Eperies	29.24	742.6	30.13	765.3	47.1	8.4	67	Calm	.....	.....	0	.....	2cs	.....	.....	0	0	.....	Julius Mikolik.
Gratz	28.87	733.2	30.14	765.6	47.5	8.6	72	S	.....	.....	1	.....	0	.....	.....	0	0	.....	Andreas Rospini.
Hermannstadt	28.67	728.2	30.11	764.8	50.7	10.4	48	E	.....	.....	1	.....	0	.....	.....	0	0	.....	Prof. Reissenberger.
Kremsmünster	28.72	729.6	30.12	765.0	37.0	2.8	93	Calm	.....	.....	0	.....	5	.....	.....	0	0	.....	Prof. C. Wagner.
Lemberg	29.10	739.2	30.10	764.6	49.1	9.5	80	SW	.....	.....	1	.....	4	.....	.....	0	0	.....	Dr. T. Staneckl.
Pola	30.02	762.4	30.13	765.3	59.4	15.2	73	WSW	.....	.....	1	.....	8ks	.....	.....	0	0	.....	I.R.Hydrographic Office.
Szathmar	29.71	754.7	30.19	766.7	50.5	10.3	63	N	.....	.....	2	.....	6	.....	.....	0	0	.....	Johann Tamas, S. J.
Szegedin	29.85	758.1	30.13	765.3	54.3	12.4	65	Calm	.....	.....	0	.....	0	.....	.....	0	0	.....	Karl Stancel.
Trieste	30.07	763.6	30.17	766.2	55.0	12.8	88	N	.....	.....	1	.....	0	.....	.....	0	0	Clear	P. Busin.
Vienna	29.41	746.9	30.13	765.4	36.0	2.2	98	Calm	.....	.....	0	.....	10	.....	.....	0	0	Foggy	I. R. Central Met. Obs'y.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time, and at Trieste at 7 a. m. of the following day. The elevation of Gratz is 343.5 meters, or 1,125.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

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

Arlon	28.48	723.4	30.00	762.1	48.6	9.2	86	SSW	.....	.....	2	.....	10	.....	.....	0.185	4.7	.....	Prof. M. Passau.
Brussels	29.66	753.4	29.86	758.5	53.4	11.9	81	S	.....	.....	5	.....	10	.....	SSW	0.014	0.35	.....	Royal Observatory.
Furnes	29.76	755.9	29.78	756.5	52.2	11.2	87	SSW	.....	.....	6	.....	10	.....	.....	0.051	1.3	Heavy rain	M. E. de Cae.
Maeseyck	29.80	756.8	29.93	760.1	52.9	11.6	84	SSW	.....	.....	6	.....	10	.....	.....	0.016	0.4	.....	M. Pierrot.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

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

BRITISH SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	29.18	741.2	29.28	743.7	50.9	10.5	.....	S	21	9.4	.....	.....	4	.....	.....	0.185	4.70	Squally.....	W. Boswell.
Ardrossan	29.23	742.4	29.25	742.9	48	8.9	.....	SSW	.....	.....	3	.....	9	.....	.....	.....	.....	Raining.....	William McNeil.
Armagh, Observatory	.....	.....	29.24	742.7	47.1	8.4	.....	S	13	5.8	.....	.....	8	.....	.....	.....	.....	D. clouds....	S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)	.....	.....	29.33	746.2	55.4	13.0	.....	S	17	7.6	.....	.....	5	.....	.....	.....	.....	D. clouds....	John Hartnup.
Birr Castle, (Parsonstown)	.....	.....	29.25	742.9	50.8	10.4	.....	SSW	.....	.....	1	.....	4	.....	.....	.....	.....	D. clouds....	J. Dreyer.
Bradford, Yorkshire	28.98	736.1	29.38	746.2	54.5	12.5	.....	S	.....	.....	1	.....	4	.....	.....	0.09	2.3	D. clouds....	J. McLandsborough.
Bridgetown, (Barbados)	29.92	760.0	29.95	760.7	82.0	27.8	.....	NE	.....	.....	2	.....	5	.....	.....	.....	.....	Overcast.....	Pvt. G. W. Roberts, A.
Cambridge, Observatory	.....	.....	29.53	750.0	55.0	12.8	.....	S	.....	.....	3	.....	10	.....	.....	.....	.....	Raining.....	H. Todd. [H. C.
Cardington	.....	.....	29.57	751.1	55.0	12.8	.....	SW	.....	.....	3	.....	10	.....	.....	.....	.....	Raining.....	John McLaren.
Chatham, School M. E	29.45	748.0	29.58	751.3	53.2	11.8	.....	SW	.....	.....	5	.....	10	.....	.....	.....	.....	Raining.....	Lt. Col. C. M. Martin, R. E.
Dartmoor	28.09	713.5	29.54	750.3	50.2	10.1	.....	W	.....	.....	5	.....	7	.....	.....	.....	.....	D. clouds....	Alexander Watt.
Davos Platz (Switzerland)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Francis Redford, M. A.
Donaghadee	29.22	742.2	29.25	742.9	48	8.9	.....	SSW	.....	.....	2	.....	5	.....	.....	.....	.....	D. clouds....	J. Mac Gowan.
Dover	29.65	753.1	29.67	753.6	54	12.2	.....	SW	.....	.....	6	.....	10	.....	.....	.....	.....	Raining.....	J. Costello.
Eccles, (near Manchester)	.....	.....	29.40	746.7	56.5	13.6	.....	SSW	3.0	1.3	.....	.....	5	.....	.....	.....	.....	D. clouds....	Thomas Mackereth.
Falmouth, Observatory	29.26	743.2	29.49	749.0	56.1	13.4	.....	SSW	.....	.....	5	.....	5	.....	.....	.....	.....	D. clouds....	The Staff.
Fort Napier, (Natal)	27.45	697.2	29.64	752.8	78.8	26.0	.....	SE	.....	.....	4	.....	2	.....	.....	.....	.....	D. clouds....	Pvt. G. Salmon, A. H. C.
Free Town, (Sierra Leone)	.....	.....	29.91	759.7	85	29.4	.....	SE	.....	.....	2	.....	3	.....	.....	.....	.....	D. clouds....	
Galway, Queen's College	.....	.....	.....	.....	50	10.0	.....	SW	.....	.....	3	.....	4	.....	.....	.....	.....	Foggy.....	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	30.09	764.3	30.15	765.8	66.5	19.2	.....	NW	.....	.....	1	.....	1	.....	.....	.....	.....	Blue sky.....	Corpl. C. Aitken, A. H. C.
Glasgow, Observatory	29.06	738.1	29.27	743.4	48.2	9.0	.....	SSW	.....	.....	2	.....	10	.....	.....	.....	.....	Raining.....	D. G. Maclean.
Great Yarmouth	29.60	751.8	29.60	751.8	52	11.1	.....	SSW	.....	.....	6	.....	8	.....	.....	.....	.....	Drizzling....	G. T. Watson.
Greenwich, Royal Obs'y	29.41	747.0	29.58	751.3	55.0	12.8	.....	SW	.....	.....	4	.....	10	.....	.....	.....	.....	Raining.....	The Staff, for G. B. Airy.
Guernsey	29.38	746.2	29.53	750.0	57	13.9	.....	SSW	.....	.....	6	.....	10	.....	.....	.....	.....	Threatening	Dr. S. E. Hoskins, F. R. S.
Helston	.....	.....	29.52	749.8	59	15.0	.....	SW	.....	.....	4	.....	2	.....	.....	0.35	8.9	D. clouds....	M. P. Moyle.
Holyhead	29.26	743.2	29.31	744.5	51	10.6	.....	SSW	.....	.....	4	.....	3	.....	.....	.....	.....	D. clouds....	John Tilston.
Jersey	29.39	746.5	29.68	753.9	55.5	13.1	.....	SW	.....	.....	6	.....	10	.....	.....	.....	.....	Raining.....	J. Fisher.
Kew, Observatory	.....	.....	29.58	751.3	55.1	12.8	.....	S	21	9.4	.....	.....	10	.....	.....	.....	.....	Raining.....	The Staff.
Kingstown	29.28	743.7	29.30	744.2	48	8.9	.....	S	.....	.....	3	.....	6	.....	.....	.....	.....	D. clouds....	George Mitchell.
Leicester, Museum	.....	.....	29.45	748.0	57.0	13.9	.....	SW	.....	.....	2	.....	5	.....	.....	.....	.....	Overcast.....	Wm. J. Harrison, F. G. S.
Malta, (Mediterranean)	30.04	763.0	30.11	764.8	66.8	19.3	.....	NE	.....	.....	0	.....	4	.....	.....	.....	.....	D. clouds....	S'gt. C. Arbeiter, A. H. C
Nairn	29.11	739.4	29.20	741.7	47	8.3	.....	SW	.....	.....	1	.....	5	.....	.....	.....	.....	½ clouded...	W. D. Penny.
Nassau, (Bahamas)	.....	.....	30.00	762.0	82.8	28.2	.....	SE	.....	.....	1	.....	8	.....	.....	Blank	Blank	D. clouds....	C. S. Duncombe.
Nottingham, Observatory	29.25	742.9	29.44	747.8	57.1	13.9	.....	SSW	.....	.....	4	.....	8ck;kyd	.....	SSW	0.070	1.78	D. clouds....	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	28.92	734.6	29.43	747.5	55.0	12.8	.....	SSW	.....	.....	4–5	.....	7	.....	.....	.....	.....	Hazy.....	Rev. Stephen Whitty
Oxford, Radcliffe Obs'y	.....	.....	29.50	749.3	54	12.2	.....	SSW	.....	.....	2	.....	10	.....	.....	.....	.....	Raining.....	F. Lucas
Plymouth	29.44	747.8	29.51	749.5	57.0	13.9	.....	SW	.....	.....	3	.....	6	.....	.....	.....	.....	D. clouds....	John Merrifield.
Roche's Point	29.25	742.9	29.29	744.0	49	9.4	.....	SW	.....	.....	4	.....	10	.....	.....	.....	.....	Showery.....	W. Kennedy.
Saint Ann's Head	29.22	742.2	29.38	746.2	55	12.8	.....	SW	.....	.....	5	.....	7	.....	.....	.....	.....	Squally.....	John C. Walker.
Sandwick Manse, (Orkneys	.....	.....	29.19	741.4	48	8.9	.....	S	15	6.7	.....	.....	5	.....	.....	.....	.....	D. clouds....	Rev. C. Clouston, LL. D
Scutari, Cemetery, (Turkey	.....	.....	30.03	762.7	56.6	13.7	.....	NE	.....	.....	2	.....	9	.....	.....	.....	.....	D. clouds....	Sergt. W. H. Lyne.
Sheffield	29.18	741.2	29.41	747.0	56.0	13.3	.....	SW	.....	.....	2	.....	4	.....	.....	0.11	2.8	Blue sky.....	W. F. Cooper.
Silloth Rectory	29.29	744.0	29.32	744.7	54.6	12.6	68	SW	.....	.....	2	.....	3	.....	.....	0.325	8.26	D. clouds....	Rev. F. Redford, M. A.
Stonyhurst, Observatory	.....	.....	.....	.....	53.0	11.7	.....	S	.....	.....	3	.....	.....	.....	.....	.....	.....	Hazy.....	Rev. S. J. Perry.
Stornoway, Lews C., (Hebr.)	.....	.....	29.22	742.2	47	8.3	.....	SW	.....	.....	2	.....	2	.....	.....	.....	.....	Blue sky.....	John Smith.
Stratfield Turgiss	29.35	745.5	29.56	750.8	56.4	13.6	.....	SW	.....	.....	3	.....	10	.....	.....	.....	.....	Squally.....	Rev. C. H. Griffith, F. M. S.
Thurso	.....	.....	29.17	740.9	52	11.1	.....	SSE	.....	.....	3	.....	3	.....	.....	.....	.....	D. clouds....	John Trotter.
Truro, Royal Institution	.....	.....	29.48	748.8	57	13.9	.....	SW	.....	.....	7	.....	8	.....	.....	.....	.....	Gloomy.....	W. Newcombe.
Valencia, Observatory	.....	.....	29.22	742.2	51.2	10.7	.....	SSW	30	13.4	.....	.....	7	.....	.....	.....	.....	Showery.....	The Staff.
SUB-SERIES.																			
Calf of Man, (Isle of Man)	.....	.....	.....	.....	52	11.1	.....	SW	.....	.....	4	.....	5	.....	.....	0.10	2.5	.....	Henry Mercer.
Cape Good Hope, Obs'y	30.07	763.8	30.11	764.8	69.9	21.1	47	SW	18	8.0	.....	1	6	.....	.....	.....	.....	.....	The Staff, for E. J. Stone.
Hobart Town, (Tasmania)	.....	.....	30.01	762.2	49.0	9.4	70	NW	.....	.....	3	.....	8k	.....	.....	0	0	Cloudy.....	Francis Abbott, F. R. A. S.
Leith, Restalrig Park	.....	.....	29.31	743.5	53.1	11.7	.....	SW	.....	.....	2	.....	8k	.....	.....	0.16	4.1	Fine.....	Andrew Gibb.
Mauritius, Observatory	29.74	755.4	29.92	760.0	79.6	26.4	62	NNW	10.0	4.5	.....	4	2	WNW	WNW	0	0	Fine.....	C. Meldrum.
Melbourne, Observatory	30.17	766.3	30.26	768.6	52.4	11.3	61	SSW	8	3.6	.....	.....	8	.....	SW	0	0	Fine.....	R. L. J. Ellery.
Monach L't-house, (Hebrides)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Youngclause.
North Unst, (Shetland Is.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Robert Burnet.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m.

MARINE SERIES. VESSELS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea or swell. Height scale 0—9	Sea or swell. Direction from—	Weather.	Observer.
S. S. Algeria, N. 40° 42′, W. 73° 30′	.....	.....	29.61	752.1	61	16.1	.....	S	.....	.....	3	.....	10	.....	.....	*10	SSE	Raining.....	Capt. W. Watson.
S. S. Batavia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. J. E. Moulard.
Ship Camperdown	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. A. T. Miller.
Brig Catherine	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. Adam Smith.
Barque Celeste	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. D. F. McKechnie.
S. S. Hibernia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. W. R. Cato
Barque Maroon	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. A. T. Brown.
Ship Mikado	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. C. C. Prehn.
S. S. Seine	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. H. Manning.
Barque Sorata	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. Jas. J.-Price.
Schooner Traveller	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. Alex Simpson.
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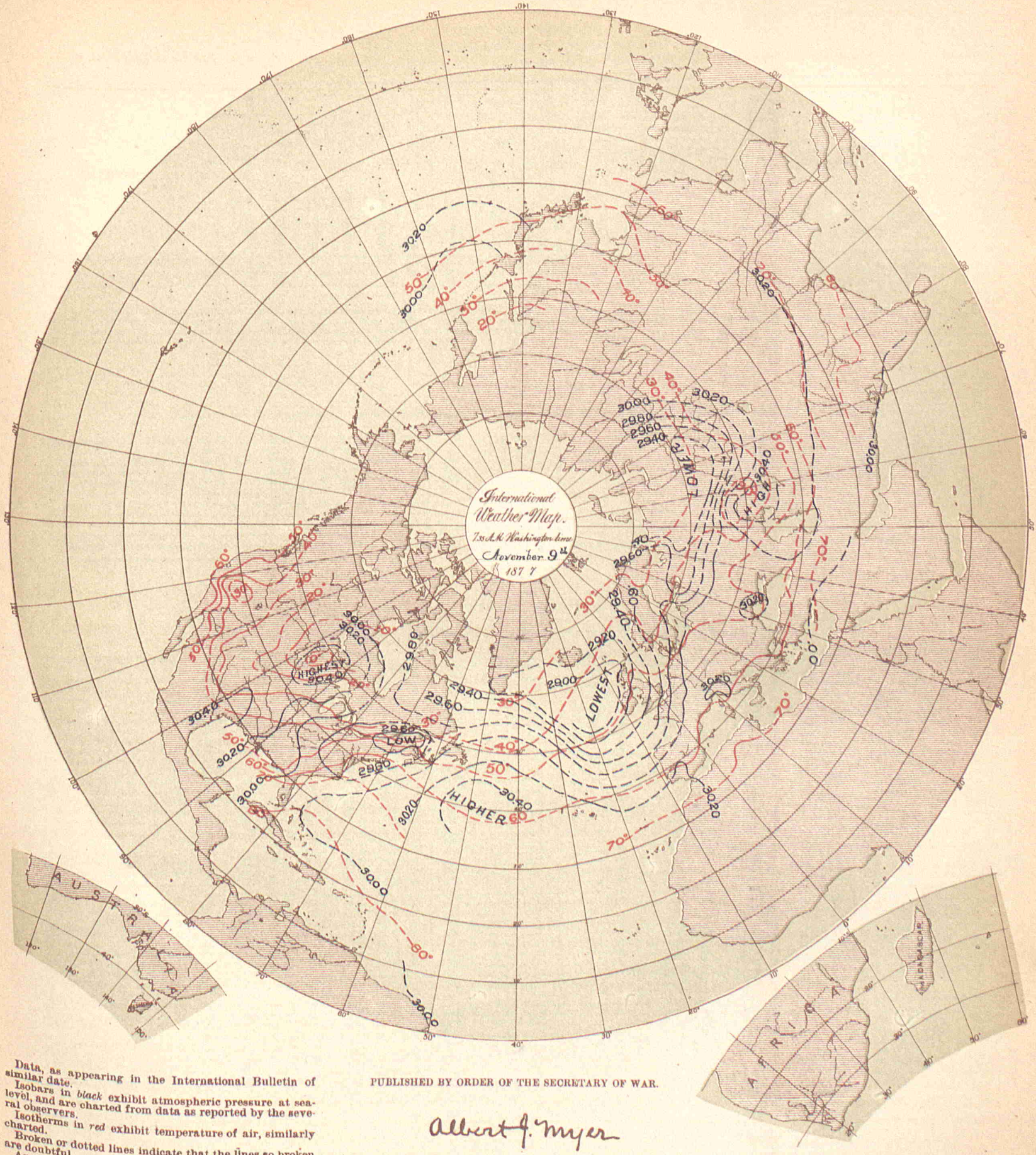
NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. *Feet.



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

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

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

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

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

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

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

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

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

STATIONS.	BAROMETER. Corrected for instrumental error and temperature. Inches.	BAROMETER. Corrected for instrumental error and temperature. Millimeters.	BAROMETER. Reduced to sea-level. Inches.	BAROMETER. Reduced to sea-level. Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Upper. From—	CLOUDS. Direction. Lower. From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	WEATHER.	OBSERVER
San José	26.19	665.2			70.7	21.5	98	E			2		7cs		E	Inap.	Inap.		Federico Maison.

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

DANISH SERIES.

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

Copenhagen	29.89	759.1	29.93	760.3	48.2	9.0	87	SW			2		10					Foggy	
Faröe	29.77	756.2	29.79	756.7	48.6	9.2	95	S			4		10						
Godthaab, (Greenland)	29.27	743.5	29.32	744.6	23.0	— 5.0	79	ENE			4		9						
Stykkisholm, (Iceland)	29.30	744.3	29.35	745.4	31.1	— 0.5	96	SE			4		5						
Thorshavn, (Faröe)	29.04	737.7	29.08	738.6	45.5	7.5	96	ESE			5		10					Raining	
Vestervig	29.57	751.0	29.74	755 3	47.8	8.8	100	S			4		9						

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

FRENCH SERIES.

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

Alençon, Normal School	29.38	746.3	29.93	760.3	53.6	12	83	SW			4		5		NE	0.08	2.	Cloudy	Collignon, Director.
Amiens, Normal School	29.72	754.8	29.83	757.6	55.4	13.0	82	SSE			2		5		W	0.091	0.8	Cloudy	Bonvarne, Director.
Avignon, Normal School	30.01	762.2	30.09	764.2	56.8	13.8	95	SE			1		8		S	0.55	14.	Raining	Mr. Giraud, Director.
Bar-sur-Seine	29.43	747.6	30.00	762.0	54.9	12.7	75	SW			1		10n		SW	0.280	7.1	Covered	C. Saillard.
Beaumette Obs'y (Angers)	29.70	754.4	29.86	758.5	56.5	13.6	77	S	8.1	3.6					SW	0.016	0.4		Albert Cheux.
Beauvais	29.58	751.4	29.87	758.7	54.1	12.3	78	SSW			3		10		SW	0.010	0.25	Covered	Normal School.
Besançon	29.19	741.4	30.09	764.3	53.6	12	90	SSW			3		8		SW	0.059	1.5	Very cloudy	Normal School.
Bourg-en-Bresse	29.42	747.2	30.10	764.5	54.3	12.4	83	S			6		10n		S	0.098	2.5	Covered	Normal School.
Bourges, Normal School	29.37	746.0	30.07	763.6	54.0	12.2	90	S			1		10		SE	0	0	Covered	A. Wagner, Director.
Brest, Naval Observatory	29.33	744.9	29.54	750.4	56.3	13.5	93	SW			6		10		SW	0.482	12.25	Raining	The Staff.
Carcassonne, Normal School	29.65	753.2	30.07	763.7	59.9	15.5	76	N			4		10		N	0	0	Covered	Vateau, Director.
Caen	29.68	753.8	29.75	755.7	56.1	13.4	82	NW			4		10		NNE	0	0	Covered	Normal School.
Chartres, Normal School	29.35	745.6	29.92	760.0	53.2	11.8	83	SW			4		10			0	0	Covered	Lequin, Director.
Châlons-sur-Marne, N. Sch'l	29.67	753.5	29.99	761.7	53.0	12.0	78	SW			3		10ck			0	0	Covered	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.67	728.2	30.02	762.5	55.9	13.3	79	E			1		10		SW	0.283	7.2	Covered	Allnard, Director.
Commercy, Normal School	29.13	740.0	30.04	763.0	52.9	11.6	83	SSW			4		8		SSW	0.24	6.	Very cloudy	Dr. Goulet, Director.
Commune de Gréasque*	29.01	736.9	30.15	765.9	58.5	14.7	84	SE			2		10		SE	0.12	3.	Light rain	M. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	29.75	755.6	29.97	761.3	56.3	13.5	88	SSE			6		10			0.008	0.2	Covered	Mouillot, Director.
Le Mans, Normal School	29.57	751.1	29.88	758.9	53.8	12.1	78	SW			4		8		SW	0.04	1.	Very cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.10	739.1	30.01	762.3	56.3	13.5	84	S			1		10		N	0.142	3.60	Covered	Pin, Director.
Lorient, Naval Observatory	29.62	752.3	29.72	754.8	56.8	13.8	86	SSW			8		10			0.591	15.0	Covered	T. Carré, Director.
Mâcon, Normal School	29.40	746.7	30.05	763.3	55.2	12.9	83	Calm			0		10			0.020	0.5	Covered	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	29.01	736.9	30.06	763.5	54.0	12.2	83	SW					10		NE	0.24	6.	Covered	Normal School.
Nismes, Normal School	29.88	759.0	30.08	764.1	57.9	14.4	95	E			2		5		N	0.886	22.50	Cloudy	Boyer, Director.
Orleans, Normal School	29.54	750.2	29.92	759.9	59.0	15	76	S			2		8		W	0	0	Very cloudy	Bernard, Director.
Paris, Observatory	29.67	753.7	29.91	759.8	53.2	11.8	80	S			1		10k		SSW	0.003	0.07	Covered	National Observatory.
Privas	29.06	738.0	30.12	765.1	57.2	14	75	S			2		10		S	0.098	2.5	Raining	Normal School
Rochefort, Naval Obs'y	29.93	760.3	29.97	761.1	55.4	13.0	81	S			4		10		S	0.16	4.	Covered	Lt. Decante, Director.
Rouen, Normal School	29.73	755.2	29.82	757.4	54.7	12.6	81	SSW			2		10		S	0.024	0.6	Covered	F. Lucard, Director.
Tarbes, Normal School																			T. Hugues, Director.
Villefranche	29.30	745.7	30.07	763.8	58.1	14.5	76	SE			2		10		S	0.016	0.4	Covered	Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.80	757.0	29.83	757.7	81.3	27.4										0	0		L'Abbé Marchési.
Marseilles, Observatory			30.09	764.2	63.5	17.5	80	SSE			2-3		10			0.102	2.60	Raining	The Staff.
Mont-Louis	24.91	632.7	30.23	767.7	48.6	9.2	56	SSW	18.6	8.33			5		SSW	0.098	2.5		Mr. Falguère.
Nice			30.12	765.0	62.1	16.7	69	Calm					10		NW	1.075	27.3	Raining	Dr. A. Niepce.
Paris, Montsouris Obs'y	29.63	752.5	29.90	759.5	52.9	11.6	78	SSW			4		10			0	0		Marié Davy, Director.
Perpignan			30.04	763.1	59.7	15.4	74	E	5.6	2.50			9		SW	0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.	21.21	538.7			31.1	— 0.5		SW			2		8					Cloudy	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.52	571.9			37.2	2.9		SW			3		8			0	0	Cloudy	Gen'l de Nansouty.
Saint Maur, (near Paris)	29.70	755.9	29.93	760.1	53.2	11.8	78	SSE			2		10		WSW	0.012	0.3	Covered	E. Renou.
Toulouse, Observatory	29.35	745.6	30.08	764.0	56.1	13.4	76	SE			1		5			0.033	0.85	Showery	The Staff.
Tours	29.73	755.1	29.93	760.1	55.8	13.2	73	SSW			3		10		W	0	0		C. Marquet.
Versailles, (near Paris)			29.90	759.5	52.9	11.6	80	SW			2		10			0.004	0.11	Covered	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.21	767.3	30.23	767.9	48.7	9.3	95	W	9.4	4.2			10n			0.346	8.8	Raining	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; for Montsouris, the barometer reduced to freezing but not to sea-level. At Mirecourt the cloud direction is apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

GERMAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Berlin	29.86	758.4	30.03	762.7	55.4	13.0	84	S			1		10			0	0		Prof. Arndt.
Breslau	29.58	751.4	30.11	764.9	56.3	13.5	78	SSE			2		1			0	0		Royal University Obs'y.
Carlsruhe	29.60	751.8	30.03	762.7	53.8	12.1	86	SW			1		10			0	0		Albert Senz.
Cassel	29.41	747.0	30.02	762.4	55.2	12.9	74	SW			1		4	SSW		0.100	2.55		Dr. H. Möhl.
Crefeld	29.74	755.5	29.91	759.6	55.2	12.9	70	S			5		8cs			0.08	2.		Director Lose.
Emden	29.84	757.9	29.87	758.8	51.3	10.7	88	S			3		10			0.276	7.0		Prof. Prestel.
Frankfort on the Main	29.73	755.1	30.10	764.4	55.0	12.8		SSW			1		9			0.110	2.8		Physical Society.
Friedrichshafen	28.64	727.5	30.08	764.1	52.9	11.6	75	WSW			5		4	WSW		0	0		M. Wilhelm.
Hamburg	29.88	758.9	29.95	760.7	52.5	11.4	86	SSW			3		9ks			0.024	0.6	Pleasant	Captain F. Hegemann.
Kiel	29.89	759.2	29.91	759.6	51.3	10.7	87	SW			3		10			0.372	9.44		Prof. G. Karsten.
Königsberg, (Prussia)	29.98	761.5	30.05	763.3	50.0	10.0	87	W										Clear	Prof. E. Luther.
Köslin			30.00	762.0	52.0	11.1		Calm			0		4			0	0		H. Müller.
Leipsic, Observatory	29.65	753.0	30.07	763.7	55.8	13.2	75	SSW			4		9	SW		0	0		Prof. Bruhns.
Memel, Naval School	29.99	761.8	30.04	763.0	47.5	8.6	89	W			1		1cs						Reinbrecht von Skalweit.
Neufahrwasser	30.04	763.0	30.06	763.4	52.5	11.4	83	S			1		7	SW		0	0		A. Lothes.
Posen	29.82	757.4	30.11	764.8	53.2	11.8	75	SW			2		10					Cloudy	Dr. Magener.
Strassburg Obs., (in Alsace	29.51	749.6	30.07	763.7	53.2	11.8	90	NNE			1		10	S		0.106	2.68		Dr. Schur.
Stuttgart	29.10	739.0	30.02	762.6	59.9	15.5	60	W			1		8	W		0.016	0.4		Prof. Schoder.
Treves, (Trier)	29.39	746.4	29.91	759.6	52.7	11.5	79	W			3		10			0.002	0.06	Foggy	Prof. Flesch.
Weissenburg, (Bavaria)	28.56	725.3	30.06	763.4	55.8	13.2	66	SSW	6	2.5			8ck	SW		0	0		Dr. Von Bebber.
Wustrow, Naval School	30.01	762.2	30.05	763.3	51.1	10.6	84	S			2		8					Cloudy	E. F. Schütz.
German Naval Series.																			

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

GREEK SERIES.

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

Athens	29.67	753.6	30.07	763.6	59.7	15.4		NE										½ clear	Dr. J. F. J. Schmidt.

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

INDIAN SERIES.

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

Kurrachee	29.95	760.7	30.00	762.0	83.5	28.6	69	W	19.0?	8.5?			1			0	0	D. clouds	
Deesa	29.55	750.6	30.03	762.6	87.4	30.8	43	Calm					1	SW		0	0	D. clouds	
Bombay	29.91	759.8	29.95	760.8	84.2	29.0	59	NW	10.0	4.5			0			0	0	Blue sky	
Poona	27.95	709.9	29.95	760.7	80.8	27.1	44	E					0			0	0	Blue sky	
Lahore	29.29	743.9	30.05	763.2	72.4	22.4	52	Calm	1.3	0.6			4			0	0	Blue sky	
Belgaum	27.44	697.0	29.99	761.7	76.7	24.8	60	E	6.0	2.7			4			0	0	D. clouds	
Bangalore																			
Roorkee	29.14	740.1	30.06	763.4	74.8	23.8	42	Calm	1.5	0.7			0			0	0		
Agra	29.48	748.7	30.05	763.2	80.2	26.8	37	W								0	0		
Trichinopoly																			
Nagpur	28.99	736.4	30.04	763.1	78.6	25.9	46	Calm	1.6	0.7			0			0	0	Blue sky	
Madras																			
Lucknow	29.67	753.7	30.05	763.3	75.3	24.1	50	NW	1.4	0.6			0			0	0	Blue sky	
Allahabad	29.73	755.2	30.05	763.2	76.9	24.9	47	Calm	0.5	0.2			0			0	0	Blue sky	
Patna	29.86	758.5	30.04	763.1	80.5	26.9	47	W	0.9	0.4			2	W	W	0	0		
Hazaribagh	28.02	711.8	30.07	763.7	73.3	22.9	45	WNW	3.4	1.5			0			0	0	Blue sky	
Cuttack	29.95	760.7	30.03	762.8	80.0	26.7	73	Calm	2.5	1.1			0			0	0	Blue sky	
Calcutta (Alipore)	30.03	762.6	30.05	763.2	74.9	23.7	77	N	2.0	0.9			0			0	0	Blue sky	
Goalpara	29.63	752.6	30.03	762.7	76.0	24.4	63	ENE	1.8	0.8			0			0	0	Blue sky	
Chittagong	29.93	760.3	30.03	762.7	74.8	23.8	77	Calm	2.4	1.1			0			0	0	Blue sky	
Sibsagar	29.74	755.3	30.08	764.1	71.0	21.7	85	ENE	1.4	0.6			0			0	0	Blue sky	
Rangoon																			
Jubbulpore	28.67	728.1	30.04	763.1	79.0	26.1	52	NE	1.3	0.6			0			0	0	Blue sky	

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

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	22.24	565.0	30.14	765.6	33.1	0.6	92	NW			2		6	W		0	0		Ab. Dom. Morgini.
Stelvio	22.23	564.7	30.18	766.6	33.6	0.9		ENE			1		0			0	0		Signora Ernesta Manfredi.
Udine	29.70	754.5	30.12	765.1	54.0	12.2	58	S	0.7	0.3			2			0	0		Prof. Giovanni Clodig.
Padua	30.01	762.3	30.13	765.2	52.3	11.3	67	NNE	0.7	0.3			0			0	0		Prof. Dott. Lorenzoni.
Vicenza	29.93	760.1	30.12	765.1	53.8	12.1	61	NE	0	0			1			0	0		Conte Alm. Da Schio.
Verona	29.91	759.6	30.13	765.4	59.4	15.2	71	S	0	0			0			0	0		Dott. B. Bertoncelli.
Bergamo																			Prof. Trionfini Carlo.
Domodossola	29.08	738.7	30.13	765.3	53.4	11.9	67	N			2		4			0	0		Prof. Giuseppe Calza
Milan	29.63	752.6	30.16	766.0	53.6	12.0		WNW			1		7	SSE		0	0		Ab. Gio. Capelli.
Pavia	29.61	757.1	30.16	766.1	50.4	10.2	88	S			1		10			0	0		Prof. Gio. Cantoni.
Moncalieri	29.30	744.2	30.23	767.8	53.8	12.1	66	ESE	0	0			7	NW		0	0		Prof. P. F. Denza.
Mondovi	28.20	716.2	30.13	765.4	53.2	11.8	60	N			2		6	NW		0	0		Prof. D. C. Bruno.
Porto Maurizio	29.93	760.2	30.15	765.9	60.8	16.0	75	SSW	0.7	0.3			9	WSW		0	0		Prof. L. Vassallo.
Genoa	29.97	761.1	30.13	765.4	59.9	15.5	74	SE	1.8	0.8			10	S		0	0		Prof. G. M. Garibaldi.
Piacenza	29.90	759.4	30.16	766.0	51.4	10.8	88	SW	0	0			10			0.008	0.2		Dott. G. Manzi.
Parma	29.88	757.7	30.15	765.9	55.0	12.8	79	NNE			2		9			0	0		Prof. P. Pigorini.
Florence	29.93	760.3	30.20	767.0	57.7	14.3	61	NW			2		10			0	0		Cav. F. Meucci.
Leghorn	30.08	764.0	30.17	766.2	56.1	13.4	77	NW	2.5	1.1			10	NW		0.248	6.3		Prof. P. Monte.
Siena	28.95	735.2	30.17	766.2	55.2	12.9	77	NNW	0	0			10			0	0		Prof. L. Toscani.
Urbino	28.62	726.9	30.19	766.9	55.9	13.3	64	SE			1		1			0	0		Prof. P. Serpieri.
Pesaro	30.10	764.6	30.15	765.9	52.5	11.4	78	NE	19.2	8.6			0			0	0		Prof. Luigi Guidi.
Ancona	30.04	762.9	30.15	765.7	55.8	13.2	80	Calm	0	0			2			0	0		Prof. F. DeBosis.
Grosseto	30.09	764.2	30.20	767.1	59.4	15.2	73	ENE			2		6	SE		0	0		Avv. P. Ponticelli.
Rome	29.98	761.6	30.16	766.1	62.1	16.7	52	N	1.8	0.8			7			0	0		Prof. P. A Secchi.
Naples, O. U	29.95	760.6	30.15	765.8	65.2	18.4	45	NNW			1		1	NE		0	0		Prof. L. Palmieri.
Lecce					60.3	15.7	71	N	8.7	3.9			6	N		0	0		Prof. O. De Giorgi.
Cosenza	29.27	743.5	30.18	766.5	60.1	15.6	66	NE	0.7	0.3			0			0	0		Prof. F. D. Conti.
Cagliari	29.92	760.0	30.11	764.9	65.5	18.6	66	SW			2		2	NW		0	0		Prof. A. Pacinotti.
Riposto, (Sicily)	30.07	763.7	30.11	764.9	63.0	17.2	68	SW			2		4	SE		0	0		Prof. F. Cafiero.
Palermo	29.86	758.4	30.11	764.9	62.1	16.7	63	NE	4.3	1.9			1			0	0		Prof. G. Cacciatore.
Caltanissetta	28.14	714.7	30.10	764.4	58.6	14.8	35	WNW			1		1			0	0		Prof. A. Pagani.
Syracuse	29.99	761.7	30.07	763.6	63.7	17.6	70	SE			1		4	NW		0	0		Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.61	752.0	30.16	766.1	62.4	16.9	48	NW	0	0			2			0	0		Prof. F. Brioschi.

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,543.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo, 379.6 m., or 1,245.4 ft.; Mondovi, 536 m., or 1,824.2 ft.; Siena, 348.5 m., or 1,143.3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft.

JAPANESE SERIES.

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

Tokei, (Yeddo)																			The Observatory.
Tokei (Yeddo) University	30.10	764.5	30.21	767.2	48	8.9	78	Calm	0	0			8ks			0	0	Cloudy	Prof. P. V. Veeder.

MEXICAN SERIES.

By authority of the Secretary of Public Works.

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

Aguascalientes																			I. N. Marin, M. D.
Córdoba																			C. Peña, M. D.
Cuernavaca																			L. Castillo, A. E.
Guadalajara																			Prof. L. Perez.
Guanajuato																			Prof. V. Fernandez.
Leon																			Prof. M. Leal.
Mexico	23.23	590.0	30.41	772.5	44.4	6.9	91	NW	3.6	1.61		0	10k		NW	0.10	2.5	Hazy	Central Observatory.
Orizaba																			N. N.
Orizaba																			I. Orozco, M. D.
Pabellon, (Aguascalts)																			M. Y. de Leon, M. E.
Puebla																			Prof. B. Gonzalez.
Toluca																			Prof. C. Velazquez.
Tlacotalpam																			Prof. F. R. Bayly.
San Luis Potosi																			G. Barroeta, M. D.
Vera-Cruz																			Prof. J. Rossell.
Zacatecas																			J. A. Bonilla, M. E.

Note.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,290 m., or 7,512.9 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabell m, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m,, or 8,611.8 ft.; San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

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

Flushing	29.80	757.0	29.80	757.0	52.5	11.4		S			5					0	0		
Groningen	29.78	756.5	29.84	757.9	50.7	10.4		S			4					0	0		
Helder	29.74	755.5	29.74	755.5	50.4	10.2		S			5					0.134	3.4		
Hellevoetsluis			29.80	756.8	50.7	10.4	93	S			5								
Utrecht	29.80	757.0	29.85	758.2	50.7	10.4	90	S			4		10			0.055	1.4	Dull	H. v d Bruk.

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

NORWEGIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	29.52	749.8	29.58	751.2	48.9	9.4	66	S	15.2	6.8	.....	.....	4	.....	.....	0.339	8.6	.....	
Brönö	29.56	750.9	29.60	751.9	30.9	4.4	65	SW	9	4	.....	.....	7	.....	.....	0.551	14.0	.....	
Christiania	29.63	752.6	29.78	756 4	36.1	2.3	98	W	0	0	.....	.....	10	.....	.....	0	0	Foggy	
Tromsö	29.46?	748.3?	29.11?	739.4?	33.8	1.0	81	SW	4	2	.....	.....	9	.....	.....	0	0	.....	

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

PORTUGUESE SERIES.

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

Angra, (Azores)	30.06	763.4	30.25	768.3	60.8	16.0	83	NNW	4.3	1.9	.....	.....	6	.....	.....	0	0	.....	Dr. J. A. Sampaio
Campo Major	29.17	740.9	29.20	767.0	61.3	16.3	43	SSW	3.1	1.4	.....	.....	8	.....	.....	0	0	.....	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.13	765.4	30.22	767.6	70.2	21.2	55	WSW	6.3	2.8	.....	.....	9	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.83	757.7	30.19	766.8	61.5	16.4	64	SSW	8.7	3.9	.....	.....	9	.....	.....	0	0	.....	The Staff.
Ponta Delgada, (Azores)	30.17	766.4	30.24	768.2	64.4	18.0	60	N	0.7	0.3	.....	.....	10	.....	.....	0	0	.....	

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

Naval Series. Vessels.	Sea or swell. Height scale 0–9	Sea or swell. Direction from—	
S. S. India.			A. D. Pedroso, Com'd't. Lt. S. A. P. de Mirando.

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

RUSSIAN SERIES.

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

Warsaw	29.67	753.7	30.10	764.6	50.7	10.4	75	SW	2	1	.....	.....	0	.....	.....	.....	.....	.....	Astronomical Obs.
Wilna	29.62	752.3	30.04	763.0	47.1	8.4	91	WSW	2	1	.....	.....	10	.....	.....	.....	.....	.....	Astronomical Obs.
Dorpat	29.52	749.8	29.77	756.1	43.9	6.6	71	W	16	7	.....	.....	10	.....	.....	.....	.....	.....	Prof. Dr. Weihrauch
St. Petersburg	29 43	747.4	29.44	747.8	47.5	8.6	80	SW	22	10	.....	.....	10	.....	.....	.....	.....	Light rain...	Central Physical Obs.
Knopio	29.34	745.3	29.67	753.7	34.9	1.6	94	NE	7	3	.....	.....	10	.....	.....	Blank	Blank	.....	Ch. Forsten.
Kieff	29.47	748.4	30.11	764.8	48.0	8.9	81	Calm	0	0	.....	.....	7	.....	.....	.....	.....	.....	Physical Cabinet.
Nikolaiev	30.16	766.0	30.23	767.8	47.1	8.4	73	NNW	0	0	.....	.....	5	.....	.....	.....	.....	.....	Kurdakof.
Kertch	30.17	766.3	30.19	766.8	50.4	10.2	76	NNE	9	4	.....	.....	2	.....	.....	.....	.....	.....	Lagorio.
Moscow	29.43	747.4	29.98	761.4	49.3	9.6	92	SSW	9	4	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Lugan	29.93	760.2	30.13	765.4	52.5	11.4	30	N	2	1	.....	.....	4	.....	.....	.....	.....	.....	Meteorological Obs.
Archangel	29.71	754.7	29.73	755.2	31.6	— 0.2	96	W	13	6	.....	.....	10	.....	.....	.....	.....	.....	Ogorodnikof.
Tiflis	28.82	732.0	30.24	768.1	57.7	14.3	68	E	4	2	.....	.....	5	.....	.....	.....	.....	.....	Physical Observatory.
Astrakhan	30.31	769.8	30.23	767.7	51.8	11.0	47	WSW	2	1	.....	.....	1	.....	.....	.....	.....	.....	Sebastianof.
Kasan	29.62	752.3	29.89	759.3	43.7	6.5	70	Calm	0	0	.....	.....	10	.....	.....	.....	.....	.....	Physical Cabinet.
Orenburg	30.15	765.9	30.56	776.1	28.4	— 2.0	66	SE	13	6	.....	.....	10	.....	.....	.....	.....	.....	Tschernischef.
Ekaterinburg	28.41	721.6	29.36	745.8	34.9	1.6	76	NW	22	10	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Nukuss	30.04	763.0	30.28	769.1	40.6	4.8	68	WNW	4	2	.....	.....	1	.....	.....	.....	.....	.....	
Kasaly	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Bobrof.
Tashkend	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Michelson.
Barnaul	29.32	744.6	29.84	758.0	43.5	6.4	44	SW	22	10	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Yeniseisk	29.62	752.3	29.96	760.9	23.5	— 4.7	87	S	2	1	.....	.....	0	.....	.....	.....	.....	.....	Marks.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Usolzef.
Oorga	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Mossin.
Peking, (China)	30.02	762.4	30.16	766.0	47.1	8.4	23	NW	22	10	.....	.....	0	.....	.....	.....	.....	.....	Physical Observatory.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nikolaievsk, on the Amoor	.....	.....	.....	.....	11.3	—11.5	82	W	11	5	.....	.....	10n	.....	.....	.....	.....	.....	

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Ekaterinburg, 306. 4? m., or 1,005.2? ft.; Tashkend, 494.3? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,231.0? m., or 4,202.6? ft.

SPANISH SERIES.

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

Barcelona, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Rave, Director.
Bilbao, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Manuel de Naveran
Burgos, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Domingo Martin y Perez.
Madrid, Royal Observatory	27.93	709.3	30.17	766.4	54.3	12.4	76	SSW	3.7	1.67	.....	3	1	.....	.....	0	0	Clouds	The Staff.
Murcia, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Olayo Diaz, Director.
Santiago, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.87	758.8	29.94	760.5	76.4	24.7	92	SSE	4.5	2.0	.....	10pc	2k	.....	.....	0.268	6.8	Cloudy.....	Benito Vines, S. J.
San Fernando, Naval Obs'y.	30.11	764.8	30.21	767.3	61.0	16.1	57	NW	4.5	2.0	.....	2	3	NW	NW	0	0	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.	.....	.....	29.92	759.9	79.9	26.6	88	SE	0	0	.....	1c	2k	SE	SE	0.482	12.25	Clear	Leonardo de Tejeda, Chief of Engineers.

Note.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Low'r 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.64	752.8	29.68	753.8	31.3	— 0.4		S			2		4			0	0		
Umea	29.62	752.4	29.67	753.7	32.7	0.4	100	Calm			0		10			0	0		
Hernosand	29.68	753.8	29.73	755.1	33.8	1.0	100	Calm			0		10			0	0		
Stockholm	29.64	752.8	29.82	757.3	44.6	7.0	85	SW			2		10			0.248	6.3		
Wisby	29.84	758.0	29.90	759.5	46.4	8.0	89	WSW			4		7			0.350	8.9		
Sub-Series.																			
Upsala	29.73	755.1	29.80	757.0	43.5	6.4	92	SW	8.9	4.0			10		WSW	0.009	0.23		Dr. Hildebrandsson.

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

SWISS SERIES.

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

Geneva	28.66	727.9	30.09	764.3	52.0	11.1	90	W			1		10			0.295	7.5	Foggy	The Observatory.
Zurich	28.45	722.7	30.09	764.2	55.0	12.8	79	W			1		3			0.087	2.2	Bright	The Observatory.

Note.—For Geneva the corresponding departures from the normal values are: Barometer, +1.7 mm; Thermometer, +3.0 cent.; Relative Humidity, +15 per cent.

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

TURKISH SERIES.

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

Constantinople			30.08	764.0	55.9	13.3	74	N	8	3.5			10		NE	0	0		The Observatory.
Fao, (Persian Gulf)																			
Salonica			30.09	764.3	64.8	18.2		NW			2		2						B. Stefanides.
Valona			30.10	764.6	61.2	16.2		W			1		2			0	0	Slightly cl'dy	A. Bertrand.
Varna																			Imperial Observatory.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'ry	29.87	758.7	29.98	761.6	72.1	22.3	62	SW			1		2ks		SW	0.02	0.5	D. clouds	Prof. C. V. A. Van Dyck

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

CANADIAN SERIES.

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

Bathurst, N. B	29.42	747.3	29.49	749.0	53.0	11.7	99	SW	25.0	11.2		10				0	0		Hon. J. Ferguson.
Brockville, Ontario			29.69	754.1	37	2.8		N	1	0.4			10s		N	1.75	44.5	Light rain	W. R. Bigg.
*Chatham, N. B			29.56	750.8	55	12.8	93	S	15	6.7			10n		S	0.62	15.7	Heavy rain	G. A. Blair.
Charlottetown, P. E. Island.			29.80	756.9	49	9.4	93	S	29	13.0			10n		Calm	0.340	8.64	Light rain	H. J. Cundall, C. E.
Cornwall, Ontario	29.40	746.7	29.60	751.5	40.3	4.6	96	NE			1		10n			1.27	32.3	Drizzling	James Smith, M. A.
Dalhousie, N. B					39	3.9	90	S			1					0.77	19.6	Raining	H. A. Johnson.
Esquimault, B. C	30.06	763.5	30.11	764.8	48.3	9.1	100	Calm				0	0			0.01	0.3	Clear	W. H. Bevis.
*Father Point, Quebec			29.61	752.1	34	1.1	97	NE	35	15.6			10n			0.94	23.9	Heavy rain	J. McWilliams.
Fredericton, N. B	29.57	751.1	29.63	752.6	55.2	12.9	92	SW	14.0	6.3			10n			0.670	17.02	Light rain	Prof. Harrison.
*Fort Garry, Manitoba			30.43	772.9	2	—16.7	94	SW	5	2.2		0	0			0	0	Clear	James Stewart.
Goderich, Ontario																			H. J. Strang, M. A
Granton, Ontario	28.68	728.5	29.81	757.2	31.1	— 0.5	99	N			2		10n			1.31	33.3	Cloudy	James Grant.
*Halifax, N. S	29.80	756.9	29.93	760.2	53	11.7	90	S	22	9.8			10n		S	0.088	2.24	Heavy rain	F. Allison, M. A.
Hamilton, Ontario	29.41	747.0	29.79	756.7	38.2	3.4	80	NW			2	10cs		NW		1.68	42.7	Cloudy	Geo. Dickson, M. A
Heart's Content, N. F	30.14	765.5	30.16	766.1	44	6.7	84	SW			3		10			0	0	Overcast	E. Weedon.
*Kingston, Ontario	29.35	745.5	29.69	754 1	39	3.9	92	NE	4	1.8			10s		Calm	2.01	51.1	Cloudy	S. Woods, M. A.
Little Glace Bay, N. S	29.98	761.5	30.02	762.5	49.4	9.7	83	SW	10	4.5			10n			0	0	Overcast	C. H. Rigby.
*Montreal, Quebec	29.40	746.7	29.61	752.1	39	3.9	95	NE	3	1.3			10n		Calm	1.44	36.6	Light rain	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.17	740.9	29.90	759.4	25	— 3.9	81	N	28	12.5		5k	5ks	NE	NE	0.77	19.6	Cloudy	Rev. R. Mosley.
Peterboro, Ontario	28.96	735.6	29.73	755.1	35.7	2.1	88	N			1		10n			1.04	26.4	Raining	J. F. Jeffers, B. A.
Port Dover, Ontario	29.03	737.3	29.72	754.9	44	6.7	84	NW	14	6.3		10k	0	NW		1.85	47.0	Cloudy	H. Morgan.
Port Hastings, N. S	29.95	760.7	30.00	762.0	53	11.7		SW	8	3.6						0.30	7.6	Dark	Peter Grant.
Port Stanley, Ontario	29.09	738.9	29.74	755.4	38	3.3	72	W	12	5.4			10n		NW	2.23	56.6	Cloudy	M. Payne.
*Quebec, Quebec	29.24	742.7	29.56	750.8	36	2.2	100	NE	28	12.5			10n		NE	0.71	18.0	Heavy rain	Capt. Ashe, R. N
*Rockliffe, Ontario	29.40	746.7	29.88	758.9	26	— 3.3	82	NW	10	4.5			10s		NW	1.39	35.3	Cloudy	W. H. McIntyre.
St. John, N. B	29.56	750.8	29.72	754.9	52	11.1	93	SE	26	11.6			10n			2.32	58.9	Raining	G. Murdock, C. E.
*Saugeen, Ontario	29.15	740.4	29.88	758.9	29	— 1.7	90	NE	6	2.7			10ks		N	0.94	23.9	Cloudy	K. Stewart.
Stayner, Ontario			29.86	758.4	29	— 1.7	95	NE	8	3.6			10n		NE	1.26	32.0	Cloudy	R. J. Cole.
Stratford, Ontario	28.46	722.9	29.79	756.7	30.8	— 0.7	96	NW	11.0	4.9			10n			1.477	37.52	Cloudy	C. J. MacGregor, M. A.
*Sydney, C. B	29.98	761.5	30.01	762.2	48	8.9	94	SW	17	7.6			10n			Inap.	Inap.	Light rain	T. C. Hill.
*Toronto, Ontario	29.34	745.2	29.73	755.1	39	3.9	81	NW	16	7.2			10n		N	1.37	34.8	Light rain	Magnetic Observatory.
Windsor, N S	29.73	755.1	29.83	757.7	54.0	12.2	90	S	40	17.9			10n			0.24	6.1	Raining	Prof. John E. Oram.
Woodstock, Ontario																			J. Montgomery.
Sub-Series.																			
St. Johns, Newfoundland					45.0	7.2	61	SW				10k	10s			0	0	Fair	John Delany

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

UNITED STATES SERIES.

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

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

STATIONS.	BAROMETER. Corrected for instrum'tal error and temperature. Inches.	BAROMETER. Corrected for instrum'tal error and temperature. Millimeters.	BAROMETER. Reduced to sea-level. Inches.	BAROMETER. Reduced to sea-level. Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Upper. From—	CLOUDS. Direction. Lower. From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	WEATHER.	OBSERVER.
Albany, New York	29.42	747.3	29.64	752.8	58	14.4	93	Calm	0	0	.....	10s	Fog	Calm	Calm	0.58	14.7	Cloudy.....	
Alpena, Michigan	29.41	747.0	30.10	764.5	24	— 4.4	74	N	17	7.6	.....	.....	10s	.....	N	1.28	32.5	Cloudy.....	
Atlantic City, New Jersey	29.66	753.4	29.68	753.9	63	17.2	100	SW	4	1.8	.....	.....	10n	.....	Calm	0.49	12.4	Light rain..	
Augusta, Georgia	29.72	754.9	29.90	759.4	55	12.8	93	NW	2	0.9	.....	0	5ks	.....	W	0.90	22.9	Fair.....	
Baltimore, Maryland	29.69	754.1	29.74	755.4	61	16.1	71	W	2	0.9	.....	5k	2s	SW	SW	1.32	33.5	Fair.....	
Barnegat, New Jersey	29.64	752.8	29.66	753.4	62	16.7	100	W	18	8.0	.....	5ck	5n	SW	W	1.11	28.2	Light rain...	
Bismarck, Dakota	28.45	722.6	30.30	769.6	9	—12.8	79	E	4	1.8	.....	0	0	.....	.....	Inap	Inap.	Clear.....	
Boise City, Idaho	27.35	694.7	30.04	763.0	39	3.9	81	N	4	1.8	.....	0	8s	.....	Calm	0	0	Fair.....	
Boston, Massachusetts	29.48	748.8	29.63	752.6	63	17.2	89	SW	21	9.4	.....	.....	10n	.....	SW	1.67	42.4	Light rain...	
Bracketville, Texas	29.24	742.7	30.30	769.6	39	3.9	54	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.....	
Breckenridge, Minnesota	29.39	746.5	30.54	775.7	— 2	—16.9	84	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.....	
Brownsville, Texas	30.36	771.1	30.43	772.9	46	7.8	69	N	6	2.7	.....	0	0	.....	.....	0	0	Clear.	
Buffalo, New York	28 96	735.3	29.64	752.8	48.0	8.9	92	SW	12	5.4	.....	.....	10s	.....	SW	0.90	22.9	Cloudy.....	
Burlington, Vermont	29.35	745.5	29.59	751.6	59	15.0	54	S	4	1.8	.....	.....	10s	.....	Calm	0.49	12.4	Cloudy.....	
Cairo, Illinois	29.66	753.4	30.06	763.5	40	4.4	82	NW	11	4.9	.....	.....	10n	.....	NW	0.08	2.0	Light rain...	
Camp Grant, Arizona	25.40	645.2	30.20	767.1	58	14.4	12	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear.....	
Camp Verde, Arizona	27.02	686.3	30.50	774.7	35	1.7	61	W	.....	.....	.....	0	0	.....	.....	0	0	Clear.....	
Campo, California	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Cape Hatteras, N. Carolina	29.75	755.6	29.75	755.6	71	21.7	95	SW	24	10.7	.....	.....	10n	.....	SW	1.11	28.2	Light rain...	
Cape Henry, Virginia	29.72	754.9	29.75	755.6	67	19.4	95	W	1	0.4	.....	.....	10s	.....	SW	0.47	11.9	Cloudy.....	
Cape Lookout, N. Carolina	29.79	756.7	29.81	757.2	71	21.7	95	SW	13	5.8	.....	.....	10n	.....	SW	1.05	26.7	Light rain...	
Cape May, New Jersey	29.69	754.1	29.72	754.9	60	15.6	88	W	14	6.3	.....	.....	8s	.....	SW	1.00	25.4	Clearing.....	
Charleston, South Carolina	29.81	757.2	29.88	758.9	66	18.9	78	W	3	1.3	.....	2cs	5s	Calm	SW	3.87	98.3	Clearing.....	
Cheyenne, Wyoming	24.19	614.4	30.13	765.3	23	— 5.0	72	SW	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Chicago, Illinois	29.36	745.7	30.07	763.8	36	2.2	80	NW	28	12.5	.....	.....	10s	.....	NW	1.55	39.4	Threatening	
Cincinnati, Ohio	29.17	740.9	29.82	757.4	45	7.2	76	NW	8	3.6	.....	.....	10s	.....	N	0.17	4.3	Threatening	
Cleveland, Ohio	29.07	738.4	29.80	756.9	43	6.1	83	NW	14	6.3	.....	.....	10n	.....	N	0.73	18.5	Light rain...	
Concho, Texas	28.50	723.9	30.33	770.4	29	— 1.7	59	SW	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Corsicana, Texas	29.88	758.9	30.36	771.6	36	2.2	70	NW	8	3.6	.....	.....	10s	.....	.....	0	0	Cloudy.....	
Davenport, Iowa	29.57	751.1	30.24	768.1	32	0.0	79	N	10	4.5	.....	.....	10s	.....	N	0.20	5.1	Cloudy.....	
Denison, Texas	29.54	750.3	30.39	771.9	37	2.8	70	NW	10	4.5	.....	.....	10ks	.....	NW	Inap.	Inap.	Cloudy.....	
Denver, Colorado	25.01	635.2	30.23	767.8	24	— 4.4	74	S	8	3.6	.....	0	0	.....	.....	0	0	Clear.....	
Detroit, Michigan	29.16	740.7	29.85	758.2	34	1.1	79	N	17	7.6	.....	.....	10s	.....	N	1.28	32.5	Cloudy.....	
Dodge City, Kansas	27.75	704.8	30.23	767.8	23	— 5.0	79	N	14	6.3	.....	.....	10s	.....	N	0	0	Cloudy.....	
Dubuque, Iowa	29.55	750.6	30.29	769.4	28	— 2.2	88	N	8	3.6	.....	0	0	.....	.....	0.09	2.3	Clear.....	
Duluth, Minnesota	29.68	753.9	30.42	772.7	21	— 6.1	85	NE	8	3.6	.....	.....	10ks	.....	E	0	0	Threatening	
Eagle Pass, Texas	29.64	752.8	30.43	772.9	37	2.8	53	N	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Eastport, Maine	29.57	751.1	29.64	752.8	54	12.2	100	S	27	12.1	.....	.....	10n	.....	.....	1.55	39.4	Heavy rain..	
Erie, Pennsylvania	28.99	736.3	29.69	754.1	48	8.9	85	W	8	3.6	.....	.....	10s	.....	NW	0.92	23.4	Cloudy.....	
Escanaba, Michigan	29.46	748.3	30.15	765.8	27	— 2.8	76	N	40	17.9	.....	.....	10s	.....	N	0.04	1.0	Cloudy.....	
Florence, Arizona	28.61	726.7	30.21	767.3	55	12.8	12	E	.....	.....	.....	0	0	.....	.....	0	0	Clear.....	
Fort Bayard, New Mexico	24.28	616.7	30.28	769.1	24	— 4.4	61	NW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Fort Craig, New Mexico	25.83	656.1	.....	.....	22	— 5.6	72	NE	2	0.9	.....	0	0	.....	.....	0	0	Clear.....	
Fort Gibson, Indian Ter	29.76	755.9	30.33	770.4	33	0.6	79	N	17	7.6	.....	.....	10n	.....	N	0.06	1.5	Light snow..	
Fort Griffin, Texas	29.16	740.7	30.53	775.4	32	0.0	68	NW	6	2.7	.....	0	0	.....	.....	0	0	Clear.	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	29.17	740.9	30.37	771.4	28	— 2.2	88	NW	.....	.....	.....	0	5s	.....	NW	0	0	Fair.....	
Galveston, Texas	30.28	769.1	30.33	770.4	44	6.7	67	NW	24	10.7	.....	0	2ks	.....	N	0	0	Fair.....	
Grand Haven, Michigan	29.38	746.2	30.06	763.5	31	— 0.6	89	N	16	7.2	.....	.....	10n	.....	.....	1.07	27.2	Light snow..	
Indianapolis, Indiana	29.12	739.6	29.92	760.0	40	4.4	77	N	9	4.0	.....	.....	10s	.....	N	0.50	12.7	Cloudy.....	
Indianola, Texas	30.39	771.9	30.42	772.7	47	8.3	48	N	24	10.7	.....	0	0	.....	.....	0	0	Clear.....	
Jacksboro, Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Jacksonville, Florida	29.91	759.7	29.93	760.2	65	18.3	73	W	10	4.5	.....	8k	0	SW	.....	1.49	37.8	Cloudy.....	
Keokuk, Iowa	29.54	750.3	30.18	766.6	34	1.1	80	N	5	2.2	.....	.....	10s	.....	N	0.22	5.6	Cloudy.....	
Key West, Florida	29.91	759.7	29.95	760.7	78.0	25.6	88	SW	4	1.8	.....	.....	10s	.....	SW	1.01	25.7	Cloudy.....	
Kittyhawk, North Carolina	29.76	755.9	29.78	756.4	68	20.0	100	SW	18	8.0	.....	.....	10n	.....	SW	1.17	29.7	Light rain....	
Knoxville, Tennessee	28.86	733.0	29.86	758.4	46	7.8	92	SW	6	2.7	.....	0	Sm'e	.....	.....	0.21	5.3	Smoky.....	
La Crosse, Wisconsin	29.55	750.6	30.34	770.6	24	— 4.4	87	N	4	1.8	.....	Haze	Haze	.....	.....	0.30	7.6	Hazy	
La Mesilla, New Mexico	26.32	668.5	30.47	773.9	33	0.6	41	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.	
Laredo, Texas	.....	.....	.....	.....	40	4.4	73	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.	
Leavenworth, Kansas	29.43	747.5	30.33	770.4	30	— 1.1	89	N	20	8.9	.....	.....	10s	.....	N	0.09	2.3	Cloudy.....	
Los Angeles, California	29.71	754.6	30.04	763.0	61	16.1	23	NE	8	3.6	.....	0	2s	.....	NE	0	0	Clear.....	
Louisville, Kentucky	29.33	745.0	29.89	759.2	44	6.7	91	W	9	4.0	.....	.....	10n;fg	.....	W; Calm	0.19	4.8	Light rain ..	
Lynchburg, Virginia	29.09	738.9	29.76	755.9	56	13.3	81	Calm	0	0	.....	.....	Fog	.....	Calm	2.07	52.6	Foggy	
Maricopa Wells, Arizona	.....	.....	.....	.....	40	4.4	19	N	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Marquette, Michigan	29.54	750.3	30.29	769 4	27	— 2.8	77	N	12	5.4	.....	.....	10s	.....	Calm	0.14	3.6	Cloudy.....	
Mason, Texas	28.76	730.5	30.64	778.2	34	1.1	61	NW	12	5.4	.....	0	0	.....	.....	0	0	Clear.	
Memphis, Tennessee	29.78	756.4	30.11	764.8	41	5.0	83	NW	8	3.6	.....	.....	10n	.....	NW	0.02	0.5	Light rain....	
Milwaukee, Wisconsin	29.48	748.8	30.20	767.1	28	— 2.2	77	NW	27	12.1	.....	.....	10s	.....	NW	0.65	16.5	Cloudy.....	
Mobile, Alabama	30.08	764.0	30.13	765.3	45	7.2	84	NW	6	2.7	.....	0	1s	.....	Calm	0.20	5.1	Clear.	
Montgomery, Alabama	29.81	757.2	30.05	763.3	47	8.3	81	SW	8	3.6	.....	2k	Haze	NW	SW	0.02	0.5	Clear	
Morgantown, West Virginia	28.71	729.2	29.74	755.4	51	10.6	78	SW	3	1.3	.....	0	5s	.....	SW	0.37	9.4	Fair	
Mt. Washington, N. H.	23.49	596.6	29.85	758.2	41	5.0	100	W	78	34.9	.....	.....	10n	.....	W	4.64	117.9	Light rain...	
Nashville, Tennessee	29.43	747.5	29.98	761.5	44	6.7	75	NW	8	3.6	.....	.....	10s	.....	NW	0.11	2.8	Cloudy.....	
New Haven, Connecticut	29.51	749.5	29.62	752.3	64	17.8	89	SW	15	6.7	.....	.....	10n	.....	Calm	1.60	40.6	Light rain...	
New London, Connecticut	29.61	752.1	29.66	753.4	62	16.7	100	SW	20	8.9	.....	.....	10n	.....	Calm	1.94	49.3	Heavy rain..	
New Orleans, Louisiana	30.11	764.8	30.17	766.3	49	9.4	60	NW	10	4.5	.....	8k	0	NW	.....	0	0	Fair.....	
Newport, Rhode Island	29.62	752.3	29.66	753.4	61	16.1	100	SE	24	10.7	.....	.....	10n	.....	S	1.12	28.4	Light rain...	
New York, New York	29.49	749.0	29 66	753.4	63	17.2	100	SW	14	6.3	.....	.....	10n	.....	W	1.66	42.2	Light rain...	
Norfolk, Virginia	29.73	755.1	29.78	756.4	66	18.9	100	SW	5	2.2	.....	.....	10s	.....	SW	0.29	7.4	Cloudy.....	
North Platte, Nebraska	27.43	696.7	30.24	768.1	17	— 8.3	83	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.	
Olympia, Washington Ter.	30.07	763.8	30.11	764.8	42	5.6	100	S	3	1.3	.....	0	0	.....	.....	0.18	4.6	Clear.....	
Omaha, Nebraska	29.24	742.7	30.41	772.4	25	— 3.9	88	N	13	5.8	.....	.....	10s	.....	N	0.10	2.5	Cloudy.....	
Oswego, New York	29.35	745.5	29.66	753.4	54	12.2	73	SW	.....	.....	5	5k	0	W	.....	0.82	20.8	Fair	
Pembina, Dakota	29.53	750.0	30.47	773.9	0	—17.8	85	S	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Philadelphia, Pennsylvania	29.66	753.4	29.71	754.6	62	16.7	83	NW	10	4.5	.....	.....	10s	.....	SW	1.30	33.0	Cloudy.....	
Phœnix, Arizona	.....	.....	.....	.....	49	9.4	30	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear.....	
Pike's Peak, Colorado	17.76	451.1	29.96	761.0	6	—14.4	28	N	18	8.0	.....	0	0	.....	.....	0	0	Clear	
Pioche, Nevada	24.25	615.9	30.02	762.5	34	1.1	71	SW	2	0.9	.....	0	Haze	.....	Calm	0	0	Clear	
Pittsburg, Pennsylvania	28.91	734.3	29.70	754.4	52	11.1	86	W	6	2.7	.....	5k	5s	W	W	0.16	4.1	Cloudy	
Port Huron, Michigan	29.15	740.4	29.83	757.7	35	1.7	90	N	25	11.2	.....	.....	10n	.....	N	1.02	25.9	Light snow..	
Portland, Maine	29.55	750.6	29.60	751.8	57	13.9	94	S	19	8.5	.....	.....	10n	.....	Calm	0.93	24.4	Light rain...	
Portland, Oregon	30.06	763.5	30.16	766.1	50	10.0	86	N	4	1.8	.....	.....	10s	.....	Calm	0.02	0.5	Cloudy.....	
Prescott, Arizona	24.98	634.5	30.34	770.6	26	— 3.3	75	N	.....	.....	.....	0	0	.....	.....	0	0	Clear.....	
Punta Rassa, Florida	29.94	760.5	29.96	761.0	79	26.1	90	NW	20	8.9	.....	.....	10ks	.....	Calm	0.34	8.6	Cloudy.....	
Red Bluff, California	29.76	755.9	30.13	765.3	49	9.4	85	N	4	1.8	.....	0	2s	.....	Calm	0	0	Clear	
Rochester, New York	29.03	737.3	29.63	752.6	52	11.1	79	W	7	3.1	.....	.....	10n	.....	W	0.84	21.3	Light rain...	
Roseburg, Oregon	29.55	750.6	30.12	765.0	48	8.9	100	Calm	0	0	.....	Haze	8s	.....	Calm	0.03	0.8	Light rain ...	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	BAROMETER. Corrected for instrum'tal error and temperature. Inches.	BAROMETER. Corrected for instrum'tal error and temperature. Millimeters	BAROMETER. Reduced to sea-level. Inches.	BAROMETER. Reduced to sea-level. Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Upper. From—	CLOUDS. Direction. Lower. From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	WEATHER.	OBSERVER.
Sacramento, California	30.02	762.5	30.11	764.8	49	9.4	93	N	1	0.4	.....	5k	0	W	.....	0	0	Fair	
St. Louis, Missouri	29.51	749.5	30.11	764.8	37	7.8	81	N	16	7.2	.....	.....	10s	.....	Calm	0.04	1.0	Cloudy	
St. Marks, Florida	30.02	762.5	30.03	762.7	50	10.0	78	NW	10	4.5	.....	0	0	.....	.....	0.11	2.8	Clear	
St. Paul, Minnesota	29.49	749.0	30.39	771.9	22	--5.6	72	NW	7	3.1	.....	.....	10s	.....	NE	0.02	0.5	Cloudy	
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salt Lake City, Utah	26.92	683.4	30.25	768.3	35	1.7	70	S	4	1.8	.....	0	0	.....	.....	0	0	Clear	
San Antonio, Texas	29.71	754.6	30.32	770.1	41	5.0	74	NW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
San Diego, California	29.96	761.0	30.03	762.7	63	17.2	23	NE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Sandusky, Ohio	29.17	740.9	29.86	758.4	30	3.9	81	N	32	14.3	.....	.....	10ks	.....	NE	1.29	32.8	Cloudy	
Sandy Hook, New Jersey	29.63	752.6	29.65	753.1	62	16.7	94	W	14	6.3	.....	.....	10n	.....	W	1.13	28.7	Light rain	
San Francisco, California	30.02	762.5	30.00	762.0	57	13.9	75	N	4	1.8	.....	.....	10s	.....	Calm	0	0	Cloudy	
Santa Fé, New Mexico	23.46	595.9	30.00	762.0	20.6	—6.4	70	NE	4	1.8	.....	0	Haze	.....	.....	0	0	Clear	
Savannah, Georgia	29.80	756.9	29.90	759.4	63	17.2	88	N	9	4.0	.....	.....	10s	.....	N	0.19	4.8	Clearing	
Shreveport, Louisiana	30.06	763.5	30.29	769.4	42	5.6	66	N	10	4.5	.....	.....	10s	.....	N	Inap.	Inap.	Cloudy	
Smithville, North Carolina	29.82	757.4	29.85	758.2	67	19.4	100	W	4	1.8	.....	.....	Fog	.....	Calm	1.08	27.4	Foggy	
Springfield, Massachusetts	29.43	747.5	29.55	750.6	63	17 2	94	S	2	0.9	.....	.....	10n	.....	S	1.15	29.2	Light rain	
Stanwix, Arizona	.....	.....	.....	.....	37	2.8	10	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Stockton, Texas	27.35	694.7	30.35	770.9	22	—5.6	60	SW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Thatcher's Island, Mass	29.58	751.3	29.64	752.8	55	12.8	100	S	20	8.9	.....	.....	10n	.....	S	1.45	36.8	Light rain	
Toledo, Ohio	29.19	741.4	29.87	758.7	38	3.3	71	N	16	7.2	.....	.....	10s	.....	N	1.32	33.5	Cloudy	
Tucson, Arizona	27.70	703.6	30.25	768.3	55	12.8	.....	SW	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Tybee Island, Georgia	29.85	758.2	29.88	758.9	64	17.8	94	W	8	3.6	.....	0	5ks	.....	W	1.00	25.4	Fair	
Umatilla, Oregon	29.80	756.9	.....	.....	48	8.9	85	E	8	3.6	.....	8cs	0	S	.....	0.02	0.5	Cloudy	
Vicksburg, Mississippi	29.03	760.2	30.20	767.1	43	6.1	83	NW	12	5.4	.....	.....	10s	.....	NW	0.01	0.3	Cloudy	
Virginia City, Montana	24.42	620.3	29.90	759.4	25	—3.9	75	SE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Visalia, California	29.76	755.9	30.14	765.5	46	7.8	84	N	1	0.4	.....	Haze	0	Calm	.....	0	0	Aurora	
Washington, D. C	29.66	753.4	29.75	755.6	57	13.9	94	NW	4	1.8	.....	5k	2s;sm'o	SW	SW	1.98	50.3	Smoky	
Wickenburg, Arizona	.....	.....	.....	.....	29	—1.7	24	W	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Wilmington, N. Carolina	29.74	755.4	29.82	757.4	67	19.4	95	W	2	0.9	.....	.....	10s	.....	W	1.36	34.5	Cloudy	
Winnemucca, Nevada	25.82	655.8	30.18	766.6	34	1.1	90	NE	8	3.6	.....	0	5s	..... Calm	Calm	0	0	Fair	
Wood's Holl, Mass	29.65	753.1	29.70	754.4	62	16.7	100	S	44	19.7	.....	.....	10n	..... S	S	0.04	1.0	Light rain	
Yankton, Dakota	29.15	740.4	30.60	777.2	10	—12.2	79	NW	18	8.0	.....	.....	10s	.....	NW	Inap.	Inap.	Cloudy	
Yuma, Arizona	30.00	762.0	30.17	766.3	47	8.3	37	N	3	1.3	.....	5c	0	N	.....	0	0	Fair	
SUB-SERIES.																			
York Factory, B. A.	29.93	760.2	29.98	761.5	8.5	—13.1	89	W	10	4.5	.....	3ck	0	SW	.....	0.03	0.8	Fair	J. Fortescue, W. Wood
Havana, Cuba, W. I	29.88	758.9	29.90	759.4	78	25.6	56	SE	3.6	1.6	.....	8c	4n	Calm	SE	0.29	7.4	Cloudy	Chas. Hasselbrink.
Kingston, Jamaica, W. I	30.08	764.0	30.09	764.3	82	27.8	83	SE	7	3.1	.....	8c	2s	SE	SE	0	0	.....	James Gall.
Navassa, W. I	29.83	757.7	29.91	759 7	84	28.9	.....	E	15	6.7	.....	.....	.....	.....	.....	0	0	Cloudy	F. M Everett.
St. Thomas, W. I	.....	.....	.....	.....	80	26.7	91	E	3	1.3	.....	2c	2k	E	.....	0.01	0.3	Clearing	G. O. Gellich.
Paramaribo, D. Guiana, S. A	.....	.....	29.99	761.7	84	28.9	75	E	.....	.....	1	5k	7ks	E	.....	0	0	Fair	C. J. Hering.
Batavia, Dutch Guiana, S. A	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Dr. H. Groot.
Medellin, Colombia, S. A	25.20	640.1	.. ..	.....	66.0	18.9	84	Calm	.....	.....	0	.....	10ks;s	.....	.....	0	0	Cloudy	Thomas Herran.
Honolulu, Oahu, H. I	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Daniel Smith.
Makawao, Maui, H. I	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters: Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573,4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.: Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.8 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not certain. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

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

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

STATIONS AND VESSELS.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er. 0—10.	Clouds. Amount. Low'r. 0—10.	Clouds. Direction. Up'er. From—	Clouds. Direction. Low'r. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard Mare Island, Cal.	30.19	766.8	55	12.8	54	12.2	80	E	9	4.0	....	.....	8	.....	E	0.001	0.03	.....	.....	Cloudy.....	
Navy Yard, Pensacola, Fla.	30.15	765.8	.....	.....	51	10.6	86	NW	3	1.3	....	.....	3	.....	.....	0	0	.....	.....	D. clouds....	
Navy Yard, Portsmouth, N.H	30.07	779.0	62	16.7	64	17.8	89	SW	6	2.7	.....	.....	9	.....	SE	0.9	23.	.....	.....	Rainy.....	
Naval Hospital, Yokohama, Japan	30.06	763.5	57	13.9	51	10.6	59	NNW	.....	.....	3	.....	5k	.....	SSW	0	0	.....	.....	Threatening	
Adams. S. 48° 28′ 3″W. 65° 15′ 35″	29.98	761.5	53	11.7	53	11 7	80	N	.....	.....	1	.....	10	.....	N	Light	Light	Long	N	Foggy	
Alert, Yokohama, Japan	30.22†	767.6†	55	12.8	55	12.8	87	N	.....	.....	2	.....	7	.....	N	.....	.....	Smooth	.....	Hazy.....	
Alliance, Constantinople, Turkey.	30.18	766.6	64	17.8	59	15.0	82	N	.....	.....	1	.....	10	.....	Calm	.....	.....	.....	.....	Overcast.....	
Ashuelot. Tientsin, China	30.18	766.6	56	13.3	44	6.7	45	S	.....	.....	1	.....	2	.....	Calm	.....	.....	Smooth	.....	D. clouds....	
Canonicus, New Orleans, La.	30.10	764.5	42	5.6	50	10.0	72	NW	.....	.....	3	.....	7	.....	N&W	.....	.....	.....	.....	Cloudy	
Colorado, New York, N. Y.	29.76	755.9	78	25.6	66	18.9	94	WSW	9	4.0	.....	.....	10	.....	WSW	2.03	51.6	.....	.....	Drizzling....	
Despatch, Constantinople, Turkey.	30.19	766.8	65	18.3	59	15.0	70	NNE	.....	.	3	.....	9	.....	N&E	.....	.....	.....	.....	Cloudy.....	
Essex. Cape Palmas, Guinea....	29.85	758.2	79	26.1	79	26.1	??	S	.....	.....	0–1	.....	0?	.....	.....	.....	.....	Long	SW	Raining?.....	
Franklin, Norfolk, Va.	29.84	757.9	69	20.6	69	20.6	85	SW	4.8	2.1	.....	.....	7.	.....	SW	0.4	10.	.....	.....	Cloudy.....	
Gettysburg, Malta	29.97‡	761.2‡	.....	.....	68	20.0	100	N	.....	.....	0–1	.....	5	.....	Calm	0	0	.....	.....	D. clouds.....	
Guard, N. 35° 40′, W. 53° 24′	30.60	777.2	66	18.9	66	18.9	64	ESE	.....	....	3	.....	5	.....	ENE	.....	.....	Moderate.	ESE	D. clouds.....	
Marion, Smyrna, Turkey	30.03	762.7	66	18.9	64	17.8	68	WSW	.....	.....	2–3	.....	2	.....	SW	0	0	Smooth	W	D. clouds. ...	
Michigan, Erie, Pa.	29.18	741.2	61	16.1	49	9.4	71	WNW	.....	.....	2	.....	10	.....	WNW	.....	.....	.....	.....	Raining.....	
Monocacy, Yokohama, Japan	30.08	764.0	63	17.2	53	11.7	54	NW	.....	.....	2	.....	1	.....	.....	.....	.....	.....	.....	D. clouds.....	
Monongahela, N. 37° 01′, E. 0° 06′	30.27	768.8	69	20.6	69	20.6	61	WSW	.....	.....	3	.....	cs	.....	.....	.....	.....	Smooth	.....	D. clouds.....	
New Hampshire, Port Royal, S.C.	30.04	763.0	.....	.....	64	17.8	94	WNW	13	5.8	.....	.....	5	.....	NW	0.11	2.8	.....	.....	D. clouds.....	
Omaha, Callao, Peru	30.06	763.5	72	22.2	69	20.6	85	SE	3	1.3	.....	.....	10	.....	Calm	0	0	Smooth	.....	Dull	
Onward, Callao, Peru	30.02	762.5	70	21.1	67.5	19.7	87	ESE	.....	.....	2	.....	10	.....	.....	.....	.....	Long	W	D. clouds.....	
Ossinee, Norfolk, Va.	29.83	757.7	72	22.2	68	20.0	90	SW	.....	.....	1	.....	9	.....	SW	.....	.....	.....	.....	D. clouds....	
Palos, Shanghai, China	30.25	768.3	61	16.1	51	10.6	100	W	.....	.....	2	.....	10	.....	Calm	.....	.....	.....	.....	Overcast.....	
Pensacola, Mare Island, Cal.	30.18	766.6	.....	.....	59	15.0	76	ESE	.....	.....	3	.....	3	.....	.....	0.001	0.03	.....	.....	Pleasant.....	
Plymouth, Norfolk, Va.	29.82	757.4	71	21.7	68	20.0	95	W	.....	.....	1	.....	10	.....	.....	.....	.....	.....	.....	Overcast.....	
Ranger, Shanghai, China	30.34	770.6	.....	.....	56	13.3	87	W	.....	.....	3	.....	10	.....	W	.....	.....	.....	.....	Cloudy	
Rio Bravo, Brownsville, Texas	30.28	769.1	.....	.....	47	8.3	77	NW	.....	.....	2	.....	2	.....	NW	.....	.....	.....	.....	D. clouds.....	
Santee, Annapolis, Md.	30.00	762.0	68	20.0	56	13.3	100	NW	.....	.....	2	.....	4	.....	NE	1.7	43.	.....	.....	Cloudy.....	
Saratoga, Hampton Roads, Va.	30.18†	766.6†	.....	.....	70	21.1	56	W	.....	.....	1	.....	9	.....	Calm	Blank	Blank	.....	.....	Cloudy.....	
St. Louis, League Island, Pa	29.67	753 6	59	15.0	58	14.4	94	WNW	7	3.1	.....	.....	8	.....	NW	1.97	50.0	.....	.....	Cloudy.....	
Swatara, Hampton Roads, Va.	29.81	757.2	.....	.....	65	18.3	94	E	.....	.....	1	.....	10	.....	S&E	.....	.....	.....	.....	Overcast.....	
Tennessee, Yokohama, Japan	30.27	768.8	65	18.3	52	11.1	60.	N	12	5.4	.....	.....	2	.....	N	0	0	None	.....	D. clouds.....	
Trenton, Villefranche, France....	30.20	767.1	67	19.4	65	18.3	68	SW	5	2.2	.....	.....	9	.....	SW	0	0	.....	.....	D. clouds.....	
Vandalia, Villefranche, France.,...	30.17	766.3	63	17.2	63	17.2	72	Calm	0	0	.....	.....	10	.....	WNW	.....	.....	.....	.....	D. clouds.....	
Wabash, Boston, Mass.	29.69	754.1	68	20.0	62	16.7	100	SW	22	9.8	.....	.....	10	.....	Calm	1.46	37.1	.....	.....	Raining.....	
Wyoming, Washington, D. C.	30.18†	766.6†	.....	.....	57	13.9	.....	Calm	.....	.....	0	.....	2	.....	S	.....	.....	.....	.....	Hazy.....	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. ‡ Barometer corrected for instrumental error and reduced to sea-level.

UNITED STATES MARINE SERIES.

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

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.			Force.	Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.			Amount.		Direction.		Character.	Direction from—		
												Up'er	Low'r	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—				
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama, N. 14° 28′ 10″, W. 93° 37′ 9″			29.71	754.6	84	28.9	79	NNW			4		7		NNW	Moderate.	NNW	D. clouds	Capt. Howard.
S. S. City of Peking, N. 40° 02′, E. 161° 53′			30.03*	762.7*	56	13.3	87	SW			4		10		SW	Small	SW	Showery	Lt. Z. L. Tanner, U.S.N.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio, N. 30° 10′, W. 151° 02′			30.29	769.4	67	19.4		N			4					Long	NW & NE	Blue sky	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

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

WHITE STAR LINE MARINE SERIES.

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

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

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

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

S. S. Belgic, N. 30° 51′, E. 155° 54′			30.22†	767.6†				Var.			4		Heavy		WSW	Moderate	W	Overcast	Capt. John Metcalf.
S. S. Gaelic																			Capt. W. H. Kidley.
S. S. Oceanic, N. 25° 38′, E. 121° 0′			29.90	759.4	68	20.0	79	NE			5		10		N; NE	Rough	Confused	Showery	Capt. H. Parsell.

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

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

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

S. S. Baltimore																			Capt. H. Andressen
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig																			Capt. K. Undütsch.
S. S. Nürnberg, N. 49° 47′, W. 30° 37′			29.91	759.7	57.0	13.9	84	WNW			7		kn		WNW	Heavy	WNW	Raining	Capt. A. Jaeger.
S. S. Ohio, N. 48° 56′, W. 28° 23′			29.33	745.0	53.5	11.9	80	WNW			8		k		WNW	Heavy	WNW	Squally	Capt. G. Meyer.

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

UNITED STATES MARINE SERIES.—Continued.

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

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Lo'wr	Upper.	Lower.	Character.	Direction From—		
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second	0—10.	0—10.	0—10.	From—	From—				
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, Delaware Bay			29.87*	758.7*	66	18.9	84	WSW			7		2		WNW	Heavy	SE	Cloudy	Captain Sargent.
S. S. Ohio, N. 51° 28′, W. 19° 58′			28.99	736 3	58	11.7	93	WSW			8		5		WSW	Very rough	WSW	Squally	Captain Morrison.
S. S. Pennsylvania, N. 47° 25′, W. 41° 02′			30.19†	766.8†	46	7.8	92	WNW			6		8		WNW	Heavy	WNW	Cloudy	Captain Harris.

NOTE.—The originals give the barometer as read off; the wind-force by the scale 0 to 12. *Aneroid; correction for elevation applied, instrumental error not known.
†Corrected for temperature and elevation, instrumental error not known.

RED STAR LINE MARINE SERIES.

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

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

ALLAN LINE MARINE SERIES.

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

S. S. Hibernian																			Capt. W. Richardson.
S. S. Scandinavian																			

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, Portsmouth, N. H.			29.64	752.8	59	15.0	100	SE	22	9.8			10n		S			Drizzling	Capt. James Jorgensen.

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

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

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

Albert J. Myer

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

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON NOVEMBER 10, 1877.

7:35 A. M. WASHINGTON mean time.

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

1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:18 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:38 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.

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

ALGERIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours	.....	.....	30.10	764.5	68.4	20.2	54	Calm	.....	.....	0	.....	3	.....	.....	0	0	Pretty fair..	Michel.
Algiers	.....	.....	30.04	763.1	67.3	19.6	73	SE	.....	.....	1	.....	1	.....	.....	0	0	Very fair.....	Peter.
La Calle	.....	.....	30.10	764.4	67.6	19.8	73	NNE	.....	.....	2	.....	4	.....	.....	0	0	Cloudy.....	Fleury.
Tunis	.....	.....	30.13	765.4	69.3	20.7	72	SW	.....	.....	3	.....	3	.....	.....	0	0	Pretty fair..	Jacques.
Sfax	.....	.....	30.18	766.5	68.0	20.0	.....	N	.....	.....	2	.....	8	.....	.....	0	0	Very cloudy	Husson.
Saida	.....	.....	30.12	765.1	61.2	16.2	61	S	.....	.....	4	.....	2	.....	.....	0	0	Fair	Millot.
Tebessa	.....	.....	30.16	766.0	.....	.....	.....	Calm	.....	.....	0	.....	0	.....	.....	.....	.....	Clear.....	Bourgeois.
Geriville	.....	.....	30.13	765.2	56.7	13.7	67	S	.....	.....	4	.....	2	.....	.....	0	0	Fair	Lemaillot.
Laghouat	.....	.....	30.19	766.9	66.2	19.0	38	W	.....	.....	4	.....	2	.....	.....	0	0	Fair	Guyot.
Biskra	.....	.....	30.16	766.1	73.2	22.9	32	Calm	.....	.....	0	.....	0	.....	.....	0	0	Clear.....	Kuntz.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

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

AUSTRIAN SERIES.

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

Agram	29.46	748.3	30.02	762.6	42.6	5.9	76	Calm	.....	.....	0	.....	5	.....	.....	0.028	0.7	.....	Prof. Ivan Stozir
Cracow, I. R. Observatory	29.25	742.9	30.04	762.9	40.6	4.8	87	NE	.....	.....	1	.....	0	.....	.....	0	0	.....	Dr. Wierzbiski.
Eperies	29.14	740.1	30.03	762.8	46.0	7.8	72	Calm	.....	.....	0	.....	2cs	.....	.....	0	0	.....	Julius Mikolik.
Gratz	28.72	729.4	29.99	761.8	44.6	7.0	77	S	.....	.....	2	.....	0	.....	.....	0	0	.....	Andreas Rospini.
Hermannstadt	28.60	726.3	30.03	762.8	47.7	8.7	52	E	.....	.....	1	.....	0	.....	.....	0	0	.....	Prof. Reissenberger.
Kremsmünster	28.58	725.8	29.98	761.4	32.4	0.2	96	E	.....	.....	1	.....	10	.....	.....	0	0	.....	Prof. C. Wagner.
Lemberg	29.03	737.3	30.03	762.7	47.1	8.4	73	SE	.....	.....	1	.....	2	.....	.....	0	0	.....	Dr. T. Stanecki.
Pola	29.91	759.8	30.02	762.6	57.2	14.0	80	ESE	.....	.....	1	.....	10s	.....	.....	0	0	.....	I.R.Hydrographic Office.
Szathmar	29.62	752.3	30.10	764.4	47.5	8.6	70	N	.....	.....	1	.....	2	.....	.....	0	0	.....	Johann Tamas, S. J.
Szegedin	29.76	756.0	30.05	763.2	54.0	12.2	65	E	.....	.....	1	.....	0	.....	.....	0	0	.....	Karl Stancel.
Trieste	29.96	760.9	30.06	763.5	55.4	13.0	88	Calm	.....	.....	0	.....	10	.....	.....	0.126	3.2	Cloudy.....	P. Busin.
Vienna	29.24	742.8	29.96	761.0	43.5	6.4	91	Calm	.....	.....	0	.....	0	.....	.....	0	0	.....	I. R. Central Met. Obs'y.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

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

BELGIAN SERIES.

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

Arlon	28.28	718.2	29.78	756.5	48.7	9.3	96	SW	.....	.....	3	.....	10	.....	.....	0.146	3.7	Raining.....	Prof. M. Passau.
Brussels	29.48	747.4	29.62	752.4	50.8	13.8	70	SSW	.....	.....	5	1	8	SW	SSW	0	0	.....	Royal Observatory.
Furnes	29.54	750.2	29.56	750.8	50.8	13.8	72	SW	.....	.....	6	.....	6	.....	.....	0.091	2.3	.....	M. E. de Cae.
Maeseyck	29.54	750.3	29.67	753.6	55.2	12.9	87	SSW	.....	.....	4	.....	5	.....	.....	0	0	.....	M. Pierrot.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

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

BRITISH SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer
Aberdeen	28.82	732.0	28.92	734.6	47.9	8.8		S	22	9.8			6			0	0	Squally	W. Boswell.
Ardrossan	28.87	733.3	28.89	733.8	48	8.9		SW			2		6					D. clouds	William McNeil.
Armagh, Observatory			28.92	734.6	46.3	7.9		SW	13	5.8			7					D. clouds	S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)			29.01	736.8	50.7	10.4		SSW	34	15.2			5					D. clouds	John Hartnup.
Birr Castle, (Parsonstown)			29.00	736.6	47.1	8.4		WSW			2		8					Showery	J. Dreyer.
Bradford, Yorkshire	28.64	727.4	29.04	737.6	51.9	11.1		S			4		10			0.60	2.3	Overcast	J. McLandsborough.
Bridgetown, (Barbados)	29.93	760.2	29.96	761.0	80.0	26.7		NE			2		4					Overcast	Pvt. G. W. Roberts, A.
Cambridge, Observatory			29.32	744.7	53.0	11.7		SW			4		7			Blank	Blank	D. clouds	H. Todd. [H. C.
Cardington			29.31	744.5	51.4	10.8		SW			3		7					Overcast	John McLaren.
Chatham, School M. E.	29.36	745.7	29.48	748.8	56.2	13.4		SW			3		5			Blank	Blank	Blue sky	Lt.-Col. C.M.Martin, R.E.
Dartmoor	27.88	708.1	29.33	745.0	47.8	8.8		W			6		8					Showery	Alexander Watt.
Davos Platz (Switzerland)																			Francis Redford, M. A.
Donaghadee	28.90	734.0*	28.93	734.8	45	7.2		SW			2		9					D. clouds	J. Mac Gowan.
Dover	29.44	747.8	29.46	748.3	55	12.8		SW			6		4					Squally	J. Costello.
Eccles, (near Manchester)			29.06	738.1	52.7	11.5		SW	15.6	7.0			10					Gloomy	Thomas Mackereth.
Falmouth, Observatory	29.07	738.4	29.29	744.0	54.1	12.3		SW			6		4					Squally	The Staff.
Fort Napier, (Natal)	27.59	700.8	29.81	757.2	68.9	20.5		NE			3		5					D. clouds	Pvt. G.Salmon, A.H. C.
Free Town, (Sierra Leone)			29.96	761.0	85	29.4		Calm			0		4					D. clouds	
Galway, Queen's College					47	8.3		W			2		3					D. clouds	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	29.90	759.4	29.96	761.0	65.6	18.7		W			2		7					D. clouds	Corpl. C. Aitken, A.H.C.
Glasgow, Observatory	28.71	729.2	28.91	734.3	47.7	8.7		SSW			3		10					Gloomy	D. G. Maclean.
Great Yarmouth	29.38	746.2	29.39	746.5	55	12.8		SSW			5		4					Squally	G. T. Watson.
Greenwich, Royal Obs'y	29.20	741.7	29.37	746.0	50.1	10.1		SW			5		9					Raining	The Staff, for G. B. Airy.
Guernsey	29.23	742.4	29.45	748.0	56.5	13.6		SW			6		6			Blank	Blank	Squally	Dr. S. E. Hoskins, F.R.S.
Helston			29.39	746.5	54	12.2		SW			7		6n			0.27	6.9	Showery	M. P. Moyle.
Holyhead	28.98	736.1	29.03	737.3	50	10.0		SW			6		3			Blank	Blank	D. clouds	John Tilston.
Jersey	29.22	742.2	29.51	749.5	57.0	13.9		SSW			6		6			Blank	Blank	Threatening	J. Fisher.
Kew, Observatory			29.36	745.7	52.5	11.4		SSW	21	9.4			9					Threatening	The Staff.
Kingstown	28.98	736.1	29.01	736.8	49	9.4		SW			4		4					D. clouds	George Mitchell.
Leicester, Museum			29.21	741.9	42.9	6.1		SW			5		6					D. clouds	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	30.04	763.0	30.12	765.0	66.6	19.2		NE			2		6					D. clouds	S'gt. C. Arbeiter. A.H.C
Nairn	28.72	729.5	28.81	731.8	45	7.2		SE			1		10					Overcast	W. D. Penny.
Nassau, (Bahamas)			30.07	763.8	72.5	22.5		NW			6		10			Blank	Blank	Gloomy	C. S. Duncombe.
Nottingham, Observatory	29.00	736.6	29.19	741.4	53.8	12.1		S			6		4c;k;d		SSW	0.109	2.77	D. clouds	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	28.65	727.7	29.17	740.9	50.0	10.0		SSW			6		9					Threatening	Rev. Stephen Whitty
Oxford, Radcliffe Obs'y			29.29	744.0	52	11.1		S			4		9					Overcast	F. Lucas
Plymouth	29.24	742.7	29.31	744.5	54.5	12.5		SW			5		8					D. clouds	John Merrifield.
Roche's Point	29.06	738.1	29.10	739.1	51	10.6		W			5		5					½ clouded	W. Kennedy.
Saint Ann's Head	29.02	737.1	29.11	739.4	51	10.6		SW			6		5					Squally	John C. Walker.
Sandwick Manse, (Orkneys)			28.85	732.8	43.6	6.4		ESE	11	4.9			10					Raining	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey)			29.99	761.7	56.4	13.6		NE			2		9					Showery	Sergt. W. H. Lyne.
Sheffield	28.87	733.3	29.10	739.1	52.2	11.2		SW			5		6			0.02	0.5	D. clouds	W. F. Cooper.
Silloth Rectory	28.80	731.5	28.82	732.0	45.0	7.2	96	SW			3		10			0.550	13.97	Raining	Rev. F. Redford, M. A.
Stonyhurst, Observatory					49.9	9.9		S			6		10					Showery	Rev. S. J. Perry.
Stornoway, Lews C., (Hebr.)			28.75	730.2	43	6.1		NW			1		10					Showery	John Smith.
Stratfield Turgiss	29.16	740.7	29.38	746.2	51.6	10.9		SW			3		9					Raining	Rev. C. H. Griffith, F.M.S.
Thurso			28.78	731.0	48	8.9		ESE			3		7					D. clouds	John Trotter.
Truro, Royal Institution			29.35	745.5	57	13.9		SW			6		7					Gloomy	W. Newcombe.
Valencia, Observatory			29.10	739.1	52.6	11.4		WSW	26	11.6			6					Squally	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)					50	10.0		SW			6					0.20	5.1		Henry Mercer.
Cape Good Hope, Obs'y	30.13	765.3	30.17	766.3	69.1	20.6	52	SSE	21	9.4		0	0						The Staff, for E. J. Stone.
Hobart Town, (Tasmania)			29.64	752.8	55.0	12.8	76	NW			3		10kn			0.03	0.8		Francis Abbott, F.R.A.S.
Leith, Restalrig Park			28.95	755.3	48.0	8.9		SW			3		10k			0.07	1.8	Overcast	Andrew Gibb.
Mauritius, Observatory	29.78	756.4	29.97	761.2	78.8	26.0	73	NNW	11.5	5.1		3	8		NNW	0	0	Cloudy	C. Meldrum.
Melbourne, Observatory	30.02	762.5	30.11	764.8	52.2	11.2	78	ESE	4	1.8			0			0	0	Heavy dew	R. L. J. Ellery.
Monach L't-house, (Hebrides)																			J. Youngclause.
North Unst, (Shetland Is.)																			Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m.

Marine Series. Vessels.	Sea or swell. Height scale 0—9	Sea or swell. Direction from—	
S. S. Algeria			Capt. W. Watson.
S. S. Batavia, N. 51° 20′, W. 14° 25′	6	WNW	Capt. J. E. Mouland.
Ship Camperdown			Capt. A. T. Miller.
Brig Catherine			Capt. Adam Smith.
Barque Celeste			Capt. D. F. McKechnie
S. S. Hibernia			Capt. W. R. Cato.
Barque Maroon			Capt. A. T. Brown.
Ship Mikado			Capt. C. C. Prehn.
S. S. Seine			Capt. H. Manning.
Barque Sorata			Capt. Jas. J. Price.
Schooner Traveller			Capt. Alex. Simpson.

S. S. Algeria																		Showery	Capt. W. Watson.
S. S. Batavia, N. 51° 20′, W. 14° 25′			29.09	738.9	55	12.8		WNW			5		8			6	WNW		Capt. J. E. Mouland.
Ship Camperdown																			Capt. A. T. Miller.
Brig Catherine																			Capt. Adam Smith.
Barque Celeste																			Capt. D. F. McKechnie
S. S. Hibernia																			Capt. W. R. Cato.
Barque Maroon																			Capt. A. T. Brown.
Ship Mikado																			Capt. C. C. Prehn.
S. S. Seine																			Capt. H. Manning.
Barque Sorata																			Capt. Jas. J. Price.
Schooner Traveller																			Capt. Alex. Simpson.

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

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
San José	26.19	665.2			69.4	20.8	91	E			2	3cs	2s;d		E	Inap.	Inap.		Federico Maison.

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

DANISH SERIES.

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

Copenhagen	29.63	752.7	29.68	753.0	49.8	9.9	95	S			2		10					Foggy	
Fanöe	29.50	749.3	29.52	749.8	50.4	10.2	96	S			4		9						
Godthaab, (Greenland)	29.26	743.0	29.30	744.1	21.0	—6.1	90	N			2		10					Snowing	
Stykkisholm, (Iceland)	28.99	736.3	29.03	737.4	34.7	1.5	96	NE			8		5					Snowing	
Thorshavn, (Faröe)	28.89	733.8	28.93	734.7	45.1	7.3	88	S			2		2						
Vestervig	29.28	743.8	29.45	748.1	48.9	9.4	98	SSW			6		6						

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

FRENCH SERIES.

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

Alençon, Normal School	29.18	741.2	29.73	755.2	53.6	12	74	SW			3		5		NW	0.04	1.	Cloudy	Collignon, Director.
Amiens, Normal School	29.55	750.6	29.66	753.4	59 0	15.0	74	SSW			2		2		SW	0.024	0.6	Slightly cl'dy	Bonvarne, Director.
Avignon, Normal School	29.80	756.9	29.86	758 9	59.4	15.2	80	ESE			1		8		SE	0.587	14.9	Raining	Mr. Giraud, Director.
Bar-sur-Seine	29.24	742.7	29.81	757.1	53.4	11.9	87	SW			1		10		WSW	0.008	0.2	Covered	C. Saillard.
Beaumette Obs'y (Angers)	29.49	749.0	29.65	753.0	59.2	15.1	61	SSW	17.4	7.8					SW	0.079	2.0		Albert Cheux.
Beauvais	29.38	746.3	29.69	753.4	57.2	14	74	SW			3		5		SW	0.108	2.75	Cloudy	Normal School.
Besançon	29.01	736.8	29.90	759.5	54.3	12.4	91	SSW			2		8		SW	0.091	2.3	Very cloudy	Normal School.
Bourg-en-Bresse	29.02	737.0	29.03	760.3	54.1	12.3	95	S			4		10n		S	0.130	3.3	Covered	Normal School.
Bourges, Normal School	29.27	743.5	29.82	757.5	55.8	13.2	86	SW			2		5		E	0.067	1.7	Cloudy	A. Wagner, Director.
Brest, Naval Observatory	29.27	743.4	29.49	749.0	56.3	13.5	75	SW			5		8		SW	0 965	24.50	Squally	The Staff.
Carcassonne, Normal School	29.43	747.6	29.84	757.9	61.9	16.6	81	NNE			2		10		NNE	0	0	Covered	Vateau, Director.
Caen	29.49	749.0	29.56	760.9	59.4	15.2	69	NNE			4		2		ENE	0.028	0.7	Slightly cl'dy	Normal School.
Chartres, Normal School	29.16	740.7	29.72	754.9	57.7	14.3	95	SW			6		6		NE	0.205	5.2		Lequin, Director.
Châlons-sur-Marne, N. Sch'l	29.43	747.6	29.75	755.6	54.7	12.6	87	SW			3		8ck		SW	0	0	Very cloudy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.80	723.0	29.84	757.9	57.6	14.2	67	ESE			1		10		SW	0.012	0 3	Covered	Alluard, Director.
Commercy, Normal School	28.94	735.1	29.84	758.0	52.7	11.5	85	SW			4		10		SW	0	0	Covered	Dr. Goulet, Director.
Commune de Gréasque*	28.83	732.2	29.07	761.2	61.3	16.3	69	SE			4		8		SE	0.51	13.	¾ covered	M. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	29.52	749.8	29.74	755.3	56.5	13.6	77	SSE			6		10			0.343	8.7	Covered	Mouillot, Director.
Le Mans, Normal School	29.38	746.3	29.69	754.1	56.3	13.5	73	SW			4		8		W	0.31	8.	Very cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	28.92	734.6	29.83	757.7	54.9	12.7	90	S			2		10		NE	1.032	26.20	Raining	Pin, Director.
Lorient, Naval Observatory	29.59	749.3	29.60	751.8	58.6	14.8	68	SW			6		10			0.220	5.6	Covered	T. Carré, Director.
Mâcon, Normal School	29.19	741.3	29.84	757.8	54.3	12.4	95	Calm			0		0			0.177	4.5	Clear	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	28.71	729.3	29.76	755.8	52.7	11.5	95	SW					10		NE	0.146	3.7	Covered	Normal School.
Nismes, Normal School	29.71	754.5	29.91	759.7	60.8	16	87	SE			1		5		N	0	0	Cloudy	Boyer, Director.
Orleans, Normal School	29.36	745.7	29.73	755.2	57.9	14.4	57	SW			4		8		W	0	0	Very cloudy	Bernard, Director.
Paris, Observatory	29.46	748.2	29.69	754.2	57.6	14.2	69	SW			1		8k		SW	0.010	0.25	Very cloudy	National Observatory.
Privas	29.91	734.3	29.97	761.3	57.2	14	77	S			2		10		S	0.39	10.	Raining	Normal School
Rochefort, Naval Obs'y	29.75	755.7	29.78	756.5	59.0	15.0	78	SW			5		10		SW	0.04	1.	Covered	Lt. Decante, Director.
Rouen, Normal School	29.51	749.6	29.69	751.8	59.7	15.4	66	SSE			2		5		S	0.028	0.7	Cloudy	F. Lucard, Director.
Tarbes, Normal School																			T. Hugues, Director.
Villefranche	29.25	743.0	29.97	761.2	54.9	12.7	92	SE			2		10		W	0.126	3.2	Covered	Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.78	756.5	29.81	757.2	79.2	26.2										0.04	1.		L'Abbé Marchés.
Marseilles, Observatory			29.93	760.1	62.2	16.8	77	S			2		10			0.051	1.30	Raining	The Staff.
Mont-Louis	24.75	628.6	30.07	763.6	45.3	7.4	62	ESE	7.4	3.33			8		SSW	0	0		Mr. Falguère.
Nice			29.96	760.9	61.3	16.3	85	E			4		10		SW	1.748	44.4	Raining	Dr. A. Niepce.
Paris, Montsouris Obs'y	29.41	746.9	29.68	753.9	57.7	14.3	71	SW			4		4		SW	0.012	0.3		Marié Davy, Director.
Perpignan			29.87	758.6	62.2	16.8	73	SE	5.6	2.50			9		NE	0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.	21.08	535.4			29.1	— 1.6		SW			2		10					Snowy	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.39	568 6			33.8	1.0		SW			2		10			0.217	5.5	Snowy	Gen'l de Nansouty.
Saint Maur, (near Paris)	29.54	750.3	29.71	754.5	57.2	14.0	72	SW			3		8	SW	SW	0	0	Very cloudy	E. Renou.
Toulouse, Observatory	29.19	741 3	29.91	759.6	58.3	14.6	88	SE			1		9			0.291	7.4		The Staff.
Tours	29.54	750.2	29.73	755.2	54.0	12.2	80	SW			2		10		SW	0.039	1.0		C. Marquet.
Versailles, (near Paris)			29.69	754.2	58.3	14.6	70	SW			3		7			0.023	0.58	Fair	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.32	770.2	30.35	770.8	47.7	8.7	90	W	4.7	2.1			8k			0.063	1.6	Clearing	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7. 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; for Montsouris, the barometer reduced to freezing but not to sea-level. At Mirecourt the cloud direction is apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,368 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

GERMAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Berlin	29.66	753.4	29.83	757.7	53.8	12.1	80	S			1		10			0.024	0.61		Prof. Arndt.
Breslau	29.41	747.0	29.94	760.4	52.5	11.4	69	SSE			3		1			0	0		Royal University Obs'y.
Carlsruhe	29.41	746.9	29.83	757.6	55.4	13.0	80	S			1		10			0.071	1.8	Raining	Albert Senz.
Cassel	29.22	742.2	29.82	757.5	52.9	11.6	87	SSW			3		8	SSW		0	0		Dr. H. Möhl.
Crefeld	29.50	749.4	29.67	753.5	56.8	13.8	75	S			5		7			0.08	2.		Director Lose.
Emden	29.58	751.2	29.61	752.1	54.1	12.3	85	S			3		4			0.071	1.8		Prof. Prestel.
Frankfort on the Main	29.51	749.6	29.88	758.9	54.0	12.2		SSW			2		10			0.110	2.8		Physical Society.
Friedrichshafen	28.50	723.9	29.95	760.6	50.7	10.4	95	WNW			2		6	S		0.311	7.9		M. Wilhelm.
Hamburg	29.62	752.3	29.69	754.1	54.7	12.6	87	SW			4		8ks			0.024	0.6	Cloudy	Captain F. Hegemann.
Kiel	29.65	753.0	29.66	753.4	53.4	11.9	87	SW			4		10			0.038	0.97		Prof. G. Karsten.
Königsberg, (Prussia)	29.90	759.4	29.97	761.2	54.5	12.5	74	S										Clear	Prof. E. Luther.
Köslin			29.82	757.3	48.7	9.3		S			2		4			0.150	3.8		H. Müller.
Leipsic, Observatory	29.46	748.2	29.88	758.9	52.0	11.1	76	SSW			4		10	SW		0.079	2.0		Prof. Bruhns.
Memel, Naval School	29.96	760.9	30.00	762.1	51.4	10.8	82	SSE			1–2		7ck;cs	SW					Reinbrecht von Skalweit.
Neufahrwasser	29.93	760.2	29.95	760.6	52.9	11.6	71	S			3		8			0	0		A. Lothes.
Posen	29.67	753.6	29.96	761.0	50.4	10.2	78	S			2		1					Clear	Dr. Magener.
Strassburg Obs., (in Alsace	29.32	744.8	29.87	758.7	54.7	12.6	87	S			3		10	W		0.206	5.22	Raining	Dr. Schur.
Stuttgart	28.92	734.5	29.85	758.2	55.4	13.0	77	W			1		10			0.094	2.4	Raining	Prof. Schoder.
Treves, (Trier)	29.15	740.5	29.67	753.6	54.1	12.3	80	SW			3		10			0.004	0.09	Foggy	Prof. Flesch.
Weissenburg, (Bavaria)	28.40	721.3	29.90	759.5	51.1	10.6	90	Calm	0	0			10	W		0.016	0.4	Covered	Dr. Von Bebber.
Wustrow, Naval School	29.75	755.6	29.80	756.9	51.6	10.9	86	SE			3		8					Cloudy	E. F. Schütz.
German Naval Series.																			

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

GREEK SERIES.

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

Athens	29.69	754.0	30.08	764.0	58.8	14.9		NE										½ Clear	Dr. J. F. J. Schmidt.

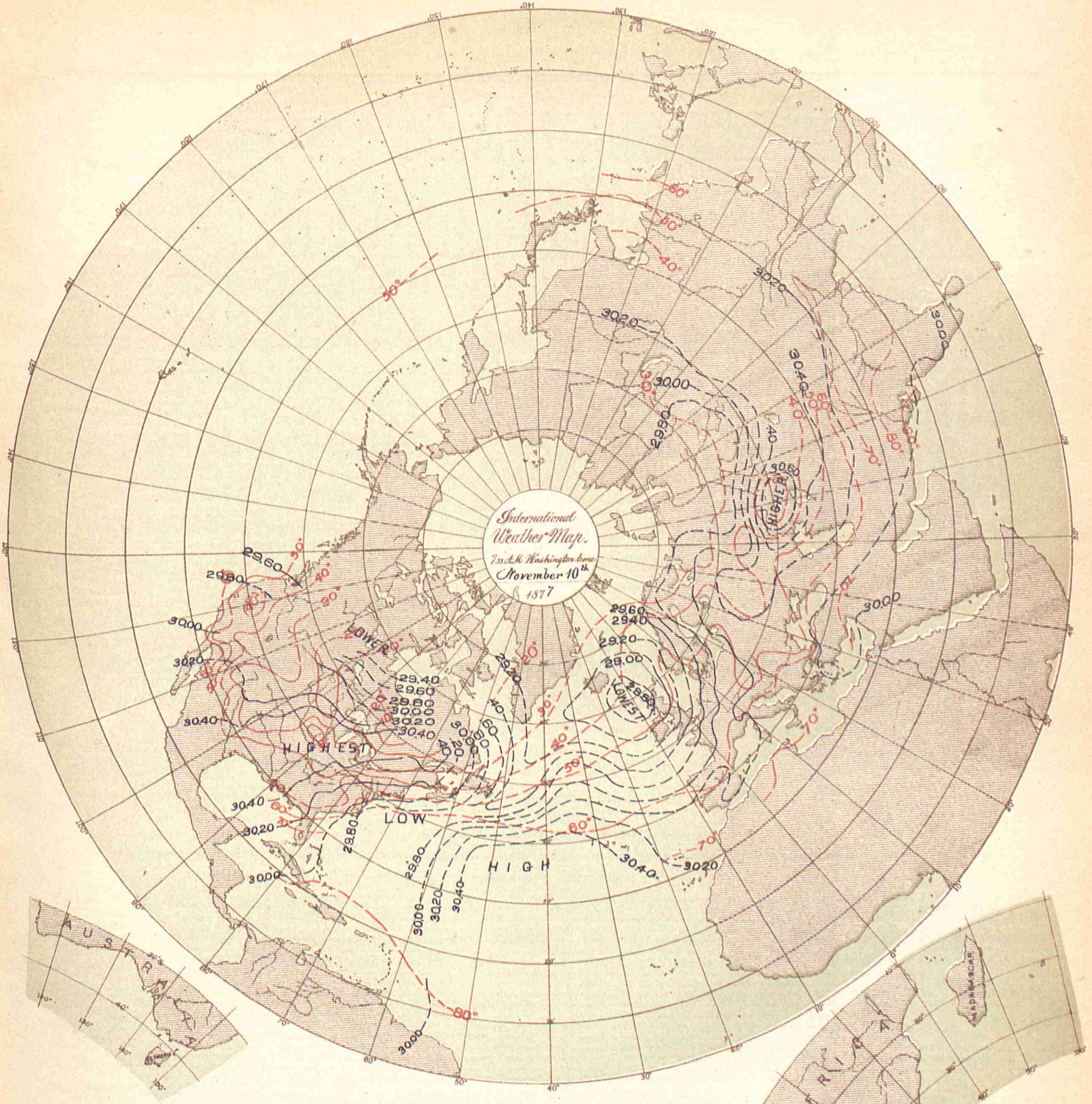
Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and wind-force; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

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

Kurrachee	30.00	761.9	30.05	763.2	90.0	32.2	30	E	9.0?	4.0?			1			0	0	D. clouds	
Deesa	29.58	751.2	30.05	763.3	88.2	31.2	33	Calm					2	N		0	0	D. clouds	
Bombay	29.94	760.4	29.98	761.4	83.1	28.4	69	NW	11.0	4.9			0			0	0	Blue sky	
Poona	27.96	710.1	29.96	760.9	80.9	27.2	41	NE					0			0	0	Blue sky	
Lahore	29.32	744.8	30.08	764.0	75.9	24.4	47	Calm	2.1	0.9			3			0	0	Blue sky	
Belgaum	27.46	697.4	30.02	762.6	72.9	22.7	72	E	8.0	3.6			2	W		0	0	D. clouds	
Bangalore																			
Roorkee	29.02	737.2	29.93	760.3	75.2	24.0	47	SE	1.8	0.8			4			0	0		
Agra	29.46	748.4	30.04	762.9	78.7	26.9	37	W								0	0		
Trichinopoly																			
Nagpur	29.00	736.5	30.05	763.3	77.0	25.3	43	NE	2.0	0.9			3			0	0	D. clouds	
Madras																			
Lucknow	29.66	753.3	30.04	763.0	74.3	23.5	47	NW	1.7	0.8			0			0	0	Blue sky	
Allahabad	29.71	754.7	30.03	762.7	75.5	24.2	49	Calm	1.1	0.5						0	0	Blue sky	
Patna	29.86	758.5	30.06	763.2	79.5	26.4	34	W	0.9	0.4			0			0	0	Blue sky	
Hazaribagh	28.01	711.5	30.08	763.9	69.3	20.7	54	WNW	4.0	1.8			0			0	0	Blue sky	
Cuttack	29.94	760.6	30.03	762.6	79.9	26.6	73	NNE	1.4	0.6			1			0	0	Blue sky	
Calcutta (Alipore)	30.01	762.3	30.03	762.8	74.9	23.8	78	N	2.0	0.9			0			0	0	Blue sky	
Goalpara	29.63	752.6	30.02	762.6	76.8	24.9	64	SE	2.2	1.0			0			0	0	Blue sky	
Chittagong	29.92	760.0	30.01	762.3	76.3	24.6	73	Calm					0			0	0		
Sibsagar	29.71	754.6	30.05	763.3	71.7	22.1	82	ENE	1.2	0.5			3			0	0	Blue sky	
Rangoon																			
Jubbulpore	28.68	728.5	30.06	763.5	79.3	26.3	48	NE	1.3	0.6			0			0	0	Blue sky	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.8 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.



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

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

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

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

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

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

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

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 1—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	22.10	561.4	30.00	762.0	29.5	— 1.4	95	E	.....	.....	2	.....	10	.....	.....	1.575*	40.0*	.....	Ab. Dom. Mongini.
Stelvio	22.10	561.2	30.04	763.1	32.7	0.4	.....	SSE	.....	.....	1	.....	10	.....	.....	0	0	.....	Signora Ernesta Manfredi.
Udine	29.61	752.0	30.02	762.6	52.2	11.2	70	Calm	0	0	.....	.....	10	.....	.....	0	0	.....	Prof. Giovanni Clodig.
Padua	29.91	759.7	30.02	762.6	48.6	9.2	88	N	4.3	1.9	.....	.....	10	ESE	.....	0	0	.....	Prof. Dott. Lorenzoni.
Vicenza	29.84	757.9	30.04	762.9	46.6	8.1	90	NW	0.7	0.3	.....	.....	10	.....	.....	0.039	1.0	.....	Conte Alm. Da Schio.
Verona	29.84	757.8	30.07	763.6	55.0	12.8	86	S	0	0	.....	.....	10	.....	.....	0.024	0.6	.....	Dott. B. Bertoncelli.
Bergamo	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Trionfini Carlo.
Domodossola	28.98	736.2	30.03	762.8	48.2	9.0	92	Calm	.....	.....	0	.....	10	.....	.....	0.020	0.5	.....	Prof. Giuseppe Calza
Milan	29.50	749.4	30.03	762.8	48.9	9.4	.....	ENE	.....	.....	2	.....	10	E	.....	0	0	.....	Ab. Gio. Capelli.
Pavia	29.08	753.8	30.03	762.8	48.6	9.2	96	E	.....	.....	1	.....	10	.....	.....	0.177	4.5	.....	Prof. Gio. Cantoni.
Moncalieri	29.10	739.2	30.03	762.8	50.7	10.4	84	ENE	0	0	.....	.....	10	N	.....	0	0	.....	Prof. P. F. Denza.
Mondovi	28.08	713.1	30.01	762.3	50.0	10.0	78	NW	.....	.....	2	.....	8	.....	.....	0	0	.....	Prof. D. C. Bruno.
Porto Maurizio	29.57	751.1	29.99	761.8	59.2	15.1	72	E	0 7	0.3	.....	.....	10	SW	.....	2.134	54.2	.....	Prof. L. Vassallo.
Genoa	29.79	756 2	29.94	760.5	58.6	14.8	84	Calm	0	0	.....	.....	10	SE	.....	0.512	13.0	.....	Prof. G. M. Garibaldi.
Piacenza	29.79	756.2	30.03	762.8	49.1	9.5	86	E	1.8	0.8	.....	.....	10	.....	.....	0.102	2.6	.....	Dott. G. Manzi.
Parma	29.71	754.5	30.03	762.7	51.1	10.6	84	NE	.....	.....	2	.....	10	.....	.....	0.035	0.9	.....	Prof. P. Pigorini.
Florence	29.76	755.9	30.02	762.6	59.0	15.0	85	E	.....	.....	2	.....	10	.....	.....	0.134	3.4	.....	Cav. F. Meucci.
Leghorn	29.93	760 3	30.02	762.5	60.6	15.9	86	S	4.9	2.2	.....	.....	10	.....	.....	0	0	.....	Prof. R. Monte.
Siena	28.83	732.3	30.05	763.3	57.2	14.0	88	S	9.4	4.2	.....	.....	10	.....	.....	0.020	0.5	.....	Prof. L. Toscani.
Urbino	28.52	724.5	30.10	764.6	57.0	13.9	64	SW	.....	.....	2	.....	10	.....	.....	0	0	.....	Prof. P. Serpieri.
Pesaro	29.98	761.4	30.03	762.7	58.6	14.8	73	W	15.0	6.7	.....	.....	10	S	.....	0	0	.....	Prof. Luigi Guidi.
Ancona	29.91	759.8	30.02	762.6	58.3	14.6	62	SE	.....	.....	4	.....	6	.....	.....	0	0	.....	Prof. F. DeBosis.
Grosseto	29.97	761.2	30.08	764.1	62.2	16.8	79	NNE	.....	.....	4	.....	8	S	.....	0	0	.....	Avv. P. Ponticelli.
Rome	29.91	759.7	30.00	764.2	62.4	16.9	61	W	3.1	1.4	.....	.....	6	.....	.....	0	0	.....	Prof. P. A. Secchi.
Naples, O. U.	29.91	759.6	30.12	765.0	65.8	18.8	57	SSW	.....	.....	2	.....	4	NNW	.....	0	0	.....	Prof. L. Palmieri.
Lecce	.....	.....	.....	.....	60.8	16.0	73	N	3.1	1.4	.....	.....	2	NW	.....	0	0	.....	Prof. C. De Giorgi.
Cosenza	29.24	742.7	30.16	765.7	60.8	16.0	67	NE	2.5	1.1	.....	.....	2	.....	.....	0	0	.....	Prof. F. D. Conti.
Cagliari	29.85	758.1	30.04	763.0	65.3	18.5	71	Calm	0	0	.....	.....	3	NW	.....	0	0	.....	Prof. A. Pacinotti.
Riposto, (Sicily)	30.04	763.1	30.09	764.3	61.3	16.3	60	SE	.....	.....	2	.....	6	S	.....	0	0	.....	Prof. F. Caflero.
Palermo	29.82	757.3	30.07	763.8	62.2	16.8	67	NE	3.1	1.4	.....	.....	1	.....	.....	0	0	.....	Prof. G. Cacciatore.
Caltanissetta	28.12	714.2	30.08	763.9	58.1	14.5	43	W	.....	.....	1	.....	0	.....	.....	0	0	.....	Prof. A. Pagani.
Syracuse	29.99	761.7	30.07	763.6	63.7	17.6	70	SE	.....	.....	1	.....	4	NW	.....	0	0	.....	Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.57	751.0	30.12	765.1	61.3	16.3	66	S	0	0	.....	.....	5	.....	.....	0	0	.....	Prof. F. Brioschi.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,543.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo 879.6 m., or 1,245.3 ft.; Monfovi, 359 m., or 1,824.2 ft; Siena, 348.5 m., or 1,143.3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft. *Unmelted snow.

JAPANESE SERIES.

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

Tokei (Yeddo)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	The Observatory.
Tokei (Yeddo) University	29.96	761.0	30.06	763.5	47	8.3	85	N	3	1.3	.....	.....	10n	.....	.....	0.1	3.	Rainy	Prof. P. V. Veeder.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

MEXICAN SERIES.

By authority of the Secretary of Public Works.

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

Aguascalientes	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	I. N. Marin, M. D.
Córdoba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	C. Peña, M. D.
Cuernavaca	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	L. Castillo, A. E.
Guadalajara	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. L. Perez.
Guanajuato	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. V. Fernandez.
Leon	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. M. Leal.
Mexico	23.27	591.1	30.47	773.9	37.4	3.0	97	NW	2.0	0.90	.....	0	1k	.....	NW	0	0	Hazy	Central Observatory.
Orizaba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	N. N.
Orizaba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	I. Orozco, M. D.
Pabellon, (Aguascalts)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. V. de Leon, M. E.
Puebla	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. B. Gonzalez.
Toluca	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. C. Velazquez.
Tlacotulpam	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. F. R. Bayly.
San Luis Potosi	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	G. Barroeta, M. D.
Vera-Cruz	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. J. Rossell.
Zacatecas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. A. Bonilla, M. E.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,230 m., or 7,312.9 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

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

Flushing	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Groningen	29.57	751.1	29.57	751.1	55.8	13.2	.....	SSW	.....	.....	5	.....	.....	.....	.....	0.059	1.5	.....	.....
Helder	29.52	749.9	29.58	751.3	54.5	12.5	.....	SSW	.....	.....	4	.....	.....	.....	.....	0.083	2.1	.....	.....
Hellevoetsluis	29.50	749.4	29.50	749.4	54.1	12.3	.....	S	.....	.....	5	.....	.....	.....	.....	0.016	0.4	.....	.....
Utrecht	.....	.....	29.56	750.9	56.5	13.6	80	SSW	.....	.....	5	.....	.....	.....	.....	.....	.....	.....	.....
.....	29.55	750.5	29.60	751.7	56.1	13.4	76	SSW	.....	.....	5	.....	5	.....	.....	0.028	0.7	Cloudy	H. v d Brink.

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

NORWEGIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	29.22	742.1	29.27	743.5	50.7	10.4	85	S	14.1	6.3	.....	.....	6	.....	.....	0.748	19.0	Light rain....	
Brönö	29.31	744.5	29.35	745.5	47.1	8.4	55	SSE	31	14	.....	.....	8	.....	.....	0	0	.....	
Christiania	29.32	744.7	29.47	748.4	47.5	8.6	98	SSW	7	3	.....	.....	10	.....	.....	0.252	6.4	Rain and fog	
Tromsö	29.61	752.0	29.65	753.1	27.0	— 2.8	92	W	4	2	.....	.....	1	.....	.....	0.020	0.5	.....	
.....																			

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

PORTUGUESE SERIES.

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

Angra, (Azores)	30.15	765.9	30.35	770.8	59.7	15.4	80	WNW	3.1	1.4	.....	.....	3	.....	.....	0	0	.....	Dr. J. A. Sampaio
Campo Major	28.99	736.3	30.04	762.9	50.0	10.0	95	ESE	5.6	2.5	.....	.....	10	ESE	.....	0.543	13.8	Raining.....	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.06	763.4	30.14	765.6	67.3	19.6	68	WSW	3.1	1.4	.....	.....	10	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.65	753.1	30.01	762.3	57.9	14.4	93	SW	6.3	2.8	.....	.....	10	.....	.....	0.528	13.4	.....	The Staff.
Ponta Delgada, (Azores)	30.26	768.7	30.34	770.5	61.2	16.2	66	N	4.9	2.2	.....	.....	3	.....	.....	0.071	1.8	.....	
.....																			

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

Naval Series. Vessels.	Sea or swell. Height scale 0–9	Sea or swell. Direction from—		
S. S. India.			.....	{ A. D. Pedroso, Com'd't. Lt. S. A. P. de Mirando.
.....			.....	.....
.....			.....	.....

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

RUSSIAN SERIES.

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

Warsaw	29.60	751.8	30.02	762.6	48.9	9.4	70	SE	9	4	.....	.....	0	.....	.....	.....	.....	.....	Astronomical Obs.
Wilna	29.72	754.9	30.15	765.7	46.4	8.0	90	SSW	4	2	.....	.....	10	.....	.....	.....	.....	.....	Astronomical Obs.
Dorpat	29.87	758.7	30.12	765.0	45.3	7.4	85	S	9	4	.....	.....	10	.....	.....	.....	.....	.....	Prof. Dr. Weihrauch
St. Petersburg	30.10	764.6	30.12	765.0	42.6	5.9	80	SSW	11	5	.....	.....	10	.....	.....	.....	.....	.....	Central Physical Obs.
Knopio	29.64	752.8	29.97	761.1	38.5	3.6	100	SW	13	6	.....	.....	10	.....	.....	.....	.....	.....	Ch. Forsten.
Kieff	29.48	748.8	30.14	765.5	38.5	3.6	98	SE	4	2	.....	.....	10	.....	.....	.....	.....	Dense fog.....	Physical Cabinet.
Nikolaiev	30.10	764.4	30.17	766.2	48.6	9.2	71	E	9	4	.....	.....	3	.....	.....	.....	.....	.....	Kurdakof.
Kertch	30.10	764.5	30.12	765.0	54.9	12.7	78	N	2	1	.....	.....	5	.....	.....	.....	.....	.....	Lagorio.
Moscow	29.66	753.4	30.23	767.7	39.2	4.0	80	NNW	9	4	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Lugan	29.93	760.1	30.13	765.3	50.0	10.0	66	ENE	4	2	.....	.....	0	.....	.....	.....	.....	.....	Meteorological Obs.
Archangel	29.95	760.7	29.97	761.2	28.0	— 2.2	96	SW	13	6	.....	.....	10	.....	.....	.....	.....	.....	Ogorodnikof.
Tiflis	28.76	730.5	30.18	766.6	55.0	12.8	77	Calm	0	0	.....	.....	9	.....	.....	.....	.....	.....	Physical Observatory.
Astrakhan	30.34	770.5	30.25	768.4	48.7	9.3	70	SE	4	2	.....	.....	9	.....	.....	.....	.....	.....	Sebastianof.
Kasan	29.57	751.1	29.85	758.1	43.3	6.3	78	W	2	1	.....	.....	10	.....	.....	.....	.....	.....	Physical Cabinet.
Orenburg	30.20	767.0	30.60	777.3	23.5	— 4.7	60	E	11	5	.....	.....	0	.....	.....	.....	.....	.....	Tschernischef.
Ekaterinburg	28.82	731.9	29.79	756.7	30.7	— 0.7	92	Calm	0	0	.....	.....	10	.....	.....	.....	.....	Snowing.....	Meteorological Obs.
Nukuss	30.13	765.2	30.37	771.3	45.5	7.5	73	WSW	0	0	.....	.....	0	.....	.....	.....	.....	.....	
Kasaly	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Bobrof.
Tashkend	28.80	731.4	30.58	776.8	40.6	4.8	90	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Michelson.
Barnaul	29.15	740.3	29.68	753.9	35.1	1.7	94	SW	4	2	.....	.....	9	.....	.....	.....	.....	.....	Meteorological Obs.
Yeniseisk	29.35	745.4	29.68	753.8	31.5	— 0.3	96	ESE	13	6	.....	.....	10	.....	.....	Blank	Blank	.....	Marks.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Usolzof.
Oorga	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Mossin.
Peking, (China)	30.14	765.5	30.28	769.1	38.8	3.8	40	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Physical Observatory.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nikolaievsk, on the Amoor	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Ekaterinburg, 306.4? m., or 1,005.2? ft.; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft.

SPANISH SERIES.

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

Barcelona, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Rave, Director.
Bilbao, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Manuel de Naveran.
Burgos, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Domingo Martin y Perez.
Madrid, Royal Observatory	27.76	705.1	30.02	762.5	49.5	9.7	91	W	5.2	2.33	.....	0	10	.....	.....	0.008	0.2	Covered	The Staff.
Murcia, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Olayo Diaz, Director.
Santiago, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	30.05	763.3	30.12	765.0	72.8	22.7	68	NNW	10.7	4.8	.....	.....	10m	.....	NNW	3.921	99.6	Cloudy.....	Benito Vines, S. J.
San Fernando, Naval Obs'y.	29.96	760.9	30.06	763.4	63.0	17.2	64	S	10.1	4.5	.....	0	10	.....	SW	0.055	1.4	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.	.....	.....	29.90	759.5	79.9	26.6	86	SE	0	0	.....	4k	4k	SE	SE	0.030	0.75	Cloudy.....	Leonardo de Tejeda, Chief of Engineers.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.93	760.2	29.97	761.2	28.0	— 2.2	.....	Calm	.....	.....	0	.....	4	.....	.....	.....	.....	.....	.....
Umea	29.76	755.9	29.81	757.2	37.8	3.2	97	Calm	.....	.....	0	.....	10	.....	.....	0	0	.....	.....
Hernosand	29.72	754.9	29.77	756.2	40.1	4.5	96	S	.....	.....	4	.....	10	.....	.....	0	0	.....	.....
Stockholm	29.58	751.4	29.76	755.9	45.3	7.4	94	SSE	.....	.....	2	.....	10	.....	.....	0	0	.....	.....
Wisby	29.76	756.0	29.82	757.5	48.2	9.0	97	S	.....	.....	4	.....	10	.....	.....	0.008	0.2	Foggy	.....
Sub-Series.																.....	.....	Raining	.....
Upsala	29.67	753.5	29.74	755.4	45.0	7.2	99	SE	11.4	5.1	.....	.....	10	.....	.....	0.175	4.44	Foggy	Dr. Hildebrandsson.

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

SWISS SERIES.

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

Geneva	28.53	724.7	29.96	761.0	53.1	11.7	95	Calm	.....	.....	0	.....	10	.....	.....	0.252	6.4	Raining	The Observatory.
Zurich	28.30	718.9	29.95	760.7	51.1	10.6	92	E	.....	.....	1	.....	10	.....	.....	0.276	7.0	Raining	The Observatory.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—For Geneva the corresponding departures from the normal values are: Barometer, —1.6 mm; Thermometer, +3.8 cent.; Relative Humidity, +19 per cent.

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

TURKISH SERIES.

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

Constantinople	.....	.....	30.03	762.7	52.7	11.5	93	N	8	3.5	.....	.....	10	.....	N	1.016	25.8	.....	The Observatory.
Fao, (Persian Gulf)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Salonica	.....	.....	30.13	765.4	64.9	18.3	.....	NW	.....	.....	1	.....	0	.....	.....	Blank	Blank	.....	B. Stefanidès.
Valona	.....	.....	30.09	764.2	61.8	16.3	.....	W	.....	.....	1	.....	0	.....	.....	0	0	Clear	A. Bertrand.
Varna	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Imperial Observatory.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.90	759.4	30.01	762.3	72.0	22.2	65	N	.....	.....	1	.....	3ks	.....	SW	0	0	D. clouds	Prof. C. V. A. Van Dyck

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

CANADIAN SERIES.

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

Bathurst, N. B.	30.28	769.1	30.35	770.9	21.8	— 5.7	90	NW	5.0	2.2	.....	3	.....	.....	.....	0	0	.....	Hon. J. Ferguson.
Brockville, Ontario	.....	.....	30.40	772.1	18	— 7.8	.....	NE	5	2.2	.....	0	5s	.....	N	0.04	1.0	Fair	W. R. Bigg.
*Chatham, N. B.	.....	.....	30.28	769.1	25	— 3.9	80	NW	13	5.8	.....	.....	10ks	.....	NW	0.07	1.8	Cloudy	G. A. Blair.
Charlottetown, P. E. Island.	.....	.....	30.16	766.1	31	— 0.6	79	NE	20	8.9	.....	.....	10s	.....	Calm	0.900	22.86	Cloudy	H. J. Cundall, C. E.
Cornwall, Ontario	30.15	765.8	30.36	771.1	16.2	— 8.8	100	NE	.....	.....	1	.....	10s	.....	.....	0	0	Cloudy	James Smith, M. A.
Dalhousie, N. B.	30.44	773.2	30.47	773.9	.....	.....	.....	NW	.....	.....	1	.....	.....	.....	.....	0.20	5.1	Bright	H. A. Johnson.
Esquimault, B. C.	29.58	751.3	29.63	752.6	48.3	9.1	93	NE	.....	.....	.....	.....	10n	.....	.....	0.01	0.3	Cloudy	W. H. Bevis.
*Father Point, Quebec	.....	.....	30.44	773.2	15	— 9.4	73	N	12	5.4	.....	5k	5s	Calm	NE	0.09	2.3	Cloudy	J. McWilliams.
Fredericton, N. B.	30.25	768.3	30.31	769.9	28.2	— 2.1	75	NW	7.0	3.1	.....	.....	10s	.....	.....	0.050	1.27	Cloudy	Prof. Harrison.
*Fort Garry, Manitoba	.....	.....	29.92	760.0	26	— 3.3	88	W	8	3.6	.....	0	0	.....	.....	0	0	Clear	James Stewart.
Goderich, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	H. J. Strang, M. A
Granton, Ontario	29.22	742.2	30.42	772.7	17.3	— 8.2	95	N	.....	.....	1	0	0	.....	.....	0	0	Clear	James Grant.
*Halifax, N. S.	29.94	760.5	30.08	764.0	34	1.1	89	N	18	8.0	.....	.....	10n	.....	.....	2.248	57.10	Threatening	F. Allison, M. A.
Hamilton, Ontario	30.04	763.0	30.45	773.4	22.5	— 5.3	75	NW	.....	.....	1	6k	.....	NW	.....	0	0	Cloudy	Geo. Dickson, M. A
Heart's Content, N. F.	29.71	754.6	29.74	755.4	35	1.7	84	NE	.....	.....	3	.....	10	.....	.....	1.06	26.9	Raining	E. Weedon.
*Kingston, Ontario	30.01	762.2	30.38	771.6	20	— 6.7	85	NE	5	2.2	.....	.....	10s	.....	Calm	0.01	0.3	Cloudy	S. Woods, M. A.
Little Glace Bay, N. S.	29.98	761.5	30.02	762.5	33.6	0.9	83	N	16	7.2	.....	.....	10n	.....	.....	1.08	27.4	Foggy	C. H. Rigby.
*Montreal, Quebec	30.16	766.1	30.38	771.6	22	— 5.6	58	E	14	6.3	.....	8ck	2s	N	.....	0.04	1.0	Cloudy	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.70	754.4	30.47	774.2	13	—10.6	81	NE	3	1.3	.....	0	0	.....	.....	0	0	Clear	Rev. R. Mosley.
Peterboro, Ontario	29.60	751.8	30.41	772.4	15.6	— 9.1	90	N	.....	.....	1	.....	10s	.....	.....	0	0	Cloudy	J. F. Jeffers, B. A.
Port Dover, Ontario	29.66	753.4	30.40	772.1	22	— 5.6	86	N	6	2.7	.....	10k	0	N	.....	Inap.	Inap.	Fair	H. Morgan.
Port Hastings, N. S.	29.99	761.7	30.04	763.0	35.7	2.1	.....	NW	5	2.2	.....	.....	.....	.....	.....	0	0	Fine	Peter Grant.
Port Stanley, Ontario	29.70	754.4	30.41	772.4	19	— 7.2	89	N	1	0.4	.....	2k	0	NE	.....	0	0	Clear	M. Payne.
*Quebec, Quebec	30.02	762.5	30.37	771.4	20	— 6.7	88	NW	20	8.9	.....	0	0	.....	.....	0.04	1.0	Clear	Capt. Ashe, R. N
*Rockliffe, Ontario	29.98	761.5	30.40	774.4	7	—13.9	88	NW	4	1.8	.....	0	0	.....	.....	0	0	Clear	W. H. McIntyre.
St. John, N. B.	30.07	763.8	30.25	768.3	32	0.0	100	NW	10	4.5	.....	.....	10s	.....	.....	Inap.	Inap.	Cloudy	G. Murdock, C. E.
*Saugeen, Ontario	29.67	753.6	30.43	772.9	18	— 7.8	88	Calm	0	0	.....	2k	0	.....	.....	0	0	Clear	K. Stewart.
Stayner, Ontario	.....	.....	30.46	773.7	15	— 9.4	84	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	R. J. Cole.
Stratford, Ontario	.....	.....	30.48	772.9	16.0	— 8.9	97	Calm	0	0	.....	0	.....	.....	.....	0	0	Fine	C. J. MacGregor, M. A.
*Sydney, C. B.	29.04	737.6	30.43	772.9	16.0	— 8.9	97	Calm	0	0	.....	0	.....	.....	.....	0	0	Clear	T. C. Hill.
*Toronto, Ontario	29.98	761.5	30.01	762.2	34	1.1	79	N	12	5.4	.....	8k	5n	W	N	1.89	48.0	Cloudy	Magnetic Observatory.
Windsor, N. S.	30.02	762.5	30.44	773.2	18	— 7.8	82	N	2	0.9	.....	0	0	.....	.....	0.01	0.3	Clear	Prof. John E. Oram.
Woodstock, Ontario	30.07	763.8	30.17	766.3	33.0	0.6	89	W	20	8.9	.....	.....	10n	.....	.....	0.78	19.8	Fair	J. Montgomery.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	38.0	3.3	90	NE	.....	.....	.....	.....	10n	.....	.....	0.60	15.2	Hazy	John Delany
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

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

1877.—November 10.

UNITED STATES SERIES.

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

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	30.02	762.5	30.26	768.6	29	— 1.7	78	NW	20	8.9	.....	0	8ks	.....	NW	0.05	1.3	Fair	
Alpena, Michigan	29.75	755.6	30.47	773.9	16	— 8.9	83	NW	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Atlantic City, New Jersey	30.06	763.5	30.08	764.0	47	8.3	85	N	14	6.3	.....	5cs	5s	SW	NE	0.01	0.3	Cloudy	
Augusta, Georgia	29.96	761.0	30.15	765.8	46	7.8	84	NW	4	1.8	.....	0	8s	.....	SW	0	0	Cloudy	
Baltimore, Maryland	30.12	765.0	30.17	766.3	44	6.7	59	NW	10	4.5	.....	.....	10s	.....	NW	Inap.	Inap.	Threatening	
Barnegat, New Jersey	30.05	763.3	30.08	764.0	47	8.3	77	N	29	13.0	.....	.....	10s	.....	N	Inap.	Inap.	Cloudy	
Bismarck, Dakota	28.26	717.8	30.04	763.0	19	— 7.2	84	E	4	1.8	.....	0	5s	.....	Calm	0	0	Fair	
Boise City, Idaho	27.16	689.8	29.82	757.4	38	3.3	80	NW	1	0.4	.....	5k	0	Calm	.....	0	0	Fair	
Boston, Massachusetts	30.01	762.2	30.17	766.3	42	5.6	67	NE	19	8.5	.....	4cs	5s	W	NE	0.35	8.9	Fair	
Brackettville, Texas	29.32	744.7	30.41	772.4	32	0.0	69	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Breckenridge, Minnesota	29.10	739.1	30.18	766.6	14	—10.0	82	SE	8	3.6	.....	5cs	0	Calm	.....	0	6	Fair	
Brownsville, Texas	30.45	773.4	30.52	775.2	42	5.6	83	N	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Buffalo, New York	29.60	751.8	30.36	771.1	26.0	— 3.3	88	N	6	2.7	.....	.....	10s	.....	N	0.10	2.5	Cloudy	
Burlington, Vermont	30.03	762.7	30.31	769.9	24	— 4.4	86	N	12	5.4	.....	.....	10s	.....	N	Inap.	Inap.	Cloudy	
Cairo, Illinois	30.11	764.8	30.53	775.4	33	0.6	70	NW	9	4.0	.....	0	0	.....	.....	0.01	0.3	Clear	
Camp Grant, Arizona	25.37	644.4	30.17	766.3	54	12.2	11	E	.....	.....	2	5c	0	SW	.....	0	0	Fair	
Camp Verde, Arizona	26.94	684.3	30.42	772.7	36	2.2	53	Calm	.....	.....	.....	2c	0	Calm	.....	0	0	Fair	
Campo, California	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Cape Hatteras, N. Carolina	29.87	758.7	29.88	758.9	62	16.7	88	NE	14	6.3	.....	.....	10n	.....	NE	0.46	11.7	Light rain	
Cape Henry, Virginia	29.96	761.0	29.98	761.5	55	12.8	74	N	24	10.7	.....	2c	5s	N	N	0.01	0.3	Cloudy	
Cape Lookout, N. Carolina	29.96	761.0	29.98	761.5	57	13.9	74	NW	12	5.4	.....	8k	2ks	SW	NE	0.22	5.6	Cloudy	
Cape May, New Jersey	30.03	762.7	30.06	763.5	49	9.4	77	N	26	11.6	.....	.....	10s	.....	NE	0	0	Cloudy	
Charleston, South Carolina	30.03	762.7	30.10	764.5	46	7.8	85	W	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Cheyenne, Wyoming	30.03	762.7	30.10	764.5	46	7.8	85	W	12	5.4	.....	8c	0	W	.....	0	0	Fair	
Chicago, Illinois	24.14	613.1	30.08	764.0	38	3.3	37	NE	5	2.2	.....	.....	10s	.....	N	0	0	Cloudy	
Cincinnati, Ohio	29.72	754.9	30.46	773.7	33	0.6	69	NE	8	3.6	.....	.....	10s	.....	N	Inap.	Inap.	Cloudy	
Cleveland, Ohio	29.71	754.6	30.39	771.9	33	0.6	70	N	9	4.0	.....	.....	10s	.....	N	Inap	Inap.	Cloudy	
Concho, Texas	29.64	752.8	30.41	772.4	31	— 0.6	79	NW	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Corsicana, Texas	28.54	724.9	30.38	771.6	25	— 3.9	74	N	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Davenport, Iowa	30.06	763.5	30.58	776.7	29	— 1.7	89	Calm	0	0	.....	Haze	Sm'e	Calm	Calm	0	0	Smoky	
Denison, Texas	29.84	757.9	30.54	775.7	24	— 4.4	86	NW	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Denver, Colorado	29.73	755.1	30.60	777.2	28	— 2.2	88	S	8	3.6	.....	.....	8s	.....	Calm	0	0	Cloudy	
Detroit, Michigan	24.89	632.2	30.11	764.8	39	3.9	39	N	7	3.1	.....	0	8s	.....	N	0	0	Fair	
Dodge City, Kansas	29.68	753.9	30.40	772.1	30	— 1.1	68	SE	4	1.8	.....	0	Haze	.....	Calm	0	0	Fair	
Dubuque, Iowa	27.67	702.8	30.12	765.0	26	— 3.3	68	SE	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Duluth, Minnesota	29.74	755.4	30.52	775.2	16	— 8.9	83	NW	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Eagle Pass, Texas	29.45	748.0	30.17	766.3	24	— 4.4	74	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Eastport, Maine	29.74	755.4	30.55	776.0	34	1.1	70	N	18	8.0	.....	.....	10s	.....	NE	0.65	16.5	Cloudy	
Erie, Pennsylvania	30.12	765.0	30.19	766.8	32	0.0	79	NE	7	3.1	.....	.....	10s	.....	NE	0.17	4.3	Cloudy	
Escanaba, Michigan	29.57	751.1	30.32	770.1	33	0.6	79	SW	12	5.4	.....	2c	0	SW	.....	0	0	Clear	
Florence, Arizona	29.68	753.9	30.38	771.6	25	— 3.9	75	E	.....	.....	.....	0	2s	.....	E	0	0	Fair	
Fort Bayard, New Mexico	28.49	723.6	30.09	764.3	61	16.1	16	NW	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Fort Craig, New Mexico	24.26	616.2	30.26	768.6	35	1.7	44	Calm	0	0	.....	5cs	0	Calm	.....	0	0	Fair	
Fort Gibson, Indian Ter	25.81	655.6	.....	.....	23	— 5.0	60	Calm	0	0	.....	0	0	.....	.....	Inap.	Inap.	Clear	
Fort Griffin, Texas	29.96	761.0	30.56	776.2	22	— 5.6	85	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Fort St. Michael, Alaska	29.23	742.4	30.63	778.0	25	— 3.9	63	Calm	0	0	.....	0	0	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0	Clear	
Galveston, Texas	29.26	743.2	30.48	774.2	22	— 5.6	72	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Grand Haven, Michigan	30.47	773.9	30.52	775.2	42	5.6	66	N	10	4.5	.....	0	1ks	.....	N	0	0	Clear	
Indianapolis, Indiana	29.77	756.1	30.48	774.2	21	— 6.1	79	NE	3	1.3	.....	0	0	.....	.....	Inap	Inap.	Clear	
Indianola, Texas	29.60	751.8	30.44	773.2	30	— 1.1	68	N	6	2.7	.....	.....	10s	.....	N	0	0	Cloudy	
Jacksboro, Texas	30.54	775.7	30.57	776.5	41	5.0	74	N	15	6.7	.....	0	0	.....	.....	0	0	Clear	
Jacksonville, Florida	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Keokuk, Iowa	30.16	766.1	30.19	766.8	46	7.8	76	NW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Key West, Florida	29.85	758.2	30.51	774.9	36	2.2	70	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Kittyhawk, North Carolina	30.08	764.0	30.11	764.8	70.0	21.1	73	N	12	5.4	.....	.....	10s	.....	N	2.01	51.1	Cloudy	
Knoxville, Tennessee	29.94	760.5	29.97	761.2	57	13.9	93	NE	38	17.0	.....	.....	10s	.....	NE	0.46	11.7	Cloudy	
La Crosse, Wisconsin	29.26	743.2	30.30	769.6	38	3.3	71	NW	13	5.8	.....	.....	10s	.....	NW	0.04	1.0	Cloudy	
La Mesilla, New Mexico	29.63	752.6	30.43	772.9	20	— 6.7	70	S	14	6.3	.....	0	0	.....	.....	0	0	Clear	
Laredo, Texas	26.35	669.3	30.50	774.7	28	— 2.2	54	NE	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Leavenworth, Kansas	.....	.....	.....	.....	35	1.7	61	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Los Angeles, California	29.57	751.1	30.49	774.4	24	— 4.4	87	S	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Louisville, Kentucky	29.61	752.1	29.95	760.7	62	16.7	19	NE	8	3.6	.....	0	5s	.....	W	0	0	Fair	
Lynchburg, Virginia	29.82	757.4	30.41	772.4	34	1.1	79	NW	10	4.5	.....	.....	10s	.....	NW	0.02	0.5	Cloudy	
Maricopa Wells, Arizona	29.44	747.8	30.12	765.0	52	11.1	54	N	6	2.7	.....	5k	5ks	W	Calm	0.04	1.0	Cloudy	
Marquette, Michigan	.....	.....	.....	.....	42	5.6	19	W	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Mason, Texas	29.44	747.8	30.19	766.8	25	— 3.9	63	SW	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Memphis, Tennessee	28.83	732.3	30.73	780.5	25	— 3.9	87	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Milwaukee, Wisconsin	30.16	766.1	30.50	774.7	38	3.3	56	N	9	4.0	.....	.....	10s	.....	N	0.01	0.3	Cloudy	
Mobile, Alabama	29.77	756.1	30.52	775.2	23	— 5.0	73	W	6	2.7	.....	5ck	0	SW	.....	0	0	Fair	
Montgomery, Alabama	30.36	771.1	30.40	772.1	45	7.2	76	NW	8	3.6	.....	.....	10s	.....	N	Inap.	Inap.	Cloudy	
Morgantown, West Virginia	30.08	764.0	30.33	770.4	44	6.7	79	NW	11	4.9	.....	.....	10s	.....	N	Inap	Inap.	Cloudy	
Mt. Washington, N. H.	29.18	741.2	30.25	769.1	36	2.2	70	N	8	3.6	.....	.....	10s	.....	NW	0.01	0.3	Cloudy	
Nashville, Tennessee	23.74	603.0	30.10	764.5	17	— 8.3	83	NW	9	4.0	.....	2ck	Fog	SW	NW	0.10	2.5	Foggy	
New Haven, Connecticut	29.85	758.2	30.41	772.4	39	3.9	81	NW	6	2.7	.....	.....	10s	.....	NW	0.01	0.3	Cloudy	
New London, Connecticut	30.03	762.7	30.15	765.8	42	5.6	75	N	12	5.4	.....	.....	10s	.....	.....	0.05	1.3	Cloudy	
New Orleans, Louisiana	30.07	763.8	30.12	765.0	46	7.8	69	NE	12	5.4	.....	0	8s	ks	W	0.16	4.1	Fair	
Newport, Rhode Island	30.36	771.1	30.43	772.9	46.5	8.1	65	N	12	5.4	.....	.....	10ks	.....	N	0	0	Cloudy	
New York, New York	30.06	763.5	30.11	764.8	45	7.2	76	N	9	4.0	.....	.....	10ks	.....	NE	0.44	11.2	Threatening	
Norfolk, Virginia	29.96	761.0	30.14	765.5	42	5.6	75	NW	19	8.5	.....	.....	10s	.....	SW	0.01	0.3	Threatening	
North Platte, Nebraska	29.97	761.2	30.03	762.7	53	11.7	79	N	19	8.5	.....	.....	10s	.....	N	0.04	1.0	Cloudy	
Olympia, Washington Ter.	27.22	691.4	29.91	759.7	31	— 0.6	79	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Omaha, Nebraska	29.67	753.6	29.71	754.6	44	6.7	100	S	1	0.4	.....	.....	10n	.....	Calm	0.93	23.6	Heavy rain	
Oswego, New York	29.25	742.9	30.42	772.7	22	— 5.6	86	S	5	2.2	.....	2c	0	Calm	.....	0	0	Clear	
Pembina, Dakota	30.01	762.2	30.36	771.1	28	— 2.2	83	N	13	5.8	.....	.....	10s	.....	NE	0.03	0.8	Cloudy	
Philadelphia, Pennsylvania	29.16	740.7	30.02	762.5	29	— 1.7	78	W	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Phœnix, Arizona	30.09	764.3	30.14	765.5	41	5.0	73	N	18	8.0	.....	.....	10n	.....	NW	Inap.	Inap.	Light rain	
Pike's Peak, Colorado	.....	.....	.....	.....	49	9.4	30	Calm	.....	.....	.....	1c	0	W	.....	0	0	Clear	
Pioche, Nevada	17.91	454.9	30.12	765.0	17	— 8.3	83	N	28	12.5	.....	.....	10s	.....	Calm	0	0	Cloudy	
Pittsburg, Pennsylvania	24.14	613.1	29.91	759.7	42	5.6	34	SW	6	2.7	.....	0	2s	.....	Calm	0	0	Fair	
Port Huron, Michigan	29.42	747.3	30.27	768.8	35	1.7	80	N	8	3.6	.....	.....	10s	.....	N	Inap.	Inap.	Cloudy	
Portland, Maine	29.68	753.9	30.40	772.1	26	— 3.3	88	E	4	1.8	.....	8k	2ks	N	Calm	0.09	2.3	Clearing	
Portland, Oregon	30.16	766.1	30.22	767.6	37	2.8	71	N	14	6 3	.....	2k	Haze	W	.....	0.07	1.8	Fair	
Prescott, Arizona	29.67	753.6	29.76	755.9	52	11.1	93	W	1	0.4	.....	.....	5n	.....	Calm	0.13	3.3	Light rain	
Punta Rassa, Florida	24.90	632.4	30.26	768.6	28	— 2.2	66	SW	.....	.....	.....	2c	0	Calm	.....	0	0	Clear	
Red Bluff, California	30.15	765.8	30.17	766.3	58	14.4	63	N	16	7.2	.....	0	8s	.....	Calm	0	0	Cloudy	
Rochester, New York	29.55	750.6	29.92	760.0	47	8.3	85	NW	4	1.8	.....	0	5s	.....	Calm	0	0	Fair	
Roseburg, Oregon	29.69	754.1	30.34	770.6	28	— 2.2	88	N	7	3.1	.....	.....	10s	.....	Calm	0.22	5.6	Cloudy	
	29.20	741.7	29.76	755.9	51	10.6	100	Calm	0	0	.....	.....	10n	.....	Calm	0.06	1.5	Light rain	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Sacramento, California	29.81	757.2	29.89	759.2	49	9.4	71	NE	4	1.8		1k	0	Calm		0	0	Clear	
St. Louis, Missouri	29.90	759.4	30.52	775.2	28	—2.2	77	NW	4	1.8		0	0			Inap.	Inap.	Clear	
St. Marks, Florida	30.24	768.1	30.26	768.6	45	7.2	84	NW	7	3.1			10s		NW	0	0	Cloudy	
St. Paul, Minnesota	29.37	746.0	30.27	768.8	20	—6.7	70	SE	8	3.6		0	0			0	0	Clear	
St. Paul's Island, Alaska																			
Salt Lake City, Utah	25.75	654.0	30.08	764.0	39	3.9	73	S	2	0.9		0	0			0	0	Clear	
San Antonio, Texas	29.83	757.7	30.46	773.7	33	0.6	89	NW	2	0.9		0	0			0	0	Clear	
San Diego, California	29.90	759.4	29.97	761.2	62	16.7	22	NE	5	2.2		0	0			0	0	Clear	
Sandusky, Ohio	29.69	754.1	30.41	772.4	31	—0.6	79	NE	20	8.9		0	4ks		NE	Inap.	Inap.	Fair	
Sandy Hook, New Jersey	30.10	764.5	30.12	765.0	43	6.1	75	NE	27	12.1			10n		NE	0.02	0.5	Light rain	
San Francisco, California	29.84	757.9	29.90	759.4	51	10.6	93	W	8	3.6		0	Fog		SW	0	0	Fair	
Santa Fé, New Mexico	23.46	595.9	30.00	762.0	26	—3.3	64	SE	3	1.3		0	2s		SE	0	0	Fair	
Savannah, Georgia	30.04	763.0	30.14	765.5	45	7.2	76	NW	9	4.0		0	0			0	0	Clear	
Shreveport, Louisiana	30.31	769.9	30.56	776.0	39	3.9	91	NE	4	1.8		0	0			0	0	Clear	
Smithville, North Carolina	29.99	761.7	30.03	762.7	48	8.9	85	NW	6	2.7		1cs	0	Calm		0	0	Clear	
Springfield, Massachusetts	29.99	761.7	30.13	765.3	38	3.3	63	N	11	4.9			10s			0.11	2.8	Cloudy	
Stanwix, Arizona					37	2.8	45	Calm				0	0			0	0	Clear	
Stockton, Texas	27.31	693.7	30.31	769.9	36	2.2	52	S	8	3.6		0	0			0	0	Clear	
Thatcher's Island, Mass	30.12	765.0	30.18	766.6	41	5.0	73	NE	28	12.5		8k	0	NE		0.32	8.1	Threatening	
Toledo, Ohio	29.71	754.6	30.48	772.9	32	0.0	89	NW	6	2.7			10s		NW	0.02	0.5	Cloudy	
Tucson, Arizona	27.70	703.6	30.25	768.3	56	13.3	10	SE				2cs	0	E		0	0	Fair	
Tybee Island, Georgia	30.09	764.3	30.13	765.3	44	6.7	83	NW	14	6.3		1k	0	NW		0	0	Clear	
Umatilla, Oregon	29.51	749.5			43	6.1	91	SE	2	0.9			10s		S	0	0	Cloudy	
Vicksburg, Mississippi	30.24	768.1	30.51	774.9	42	5.6	74	N	8	3.6			10s		N	0	0	Cloudy	
Virginia City, Montana	24.31	617.5	29.79	756.7	32	0.0	79	Calm	0	0		0	0			0	0	Clear	
Visalia, California	29.58	751.3	29.95	760.7	49	9.4	71	Calm	0	0		0	5s		Calm	0	0	Fair	
Washington, D. C	30.07	763.8	30.17	766.3	44	6.7	71	NW	14	6.3		5k	5s	SW	NW	0.01	0.3	Cloudy	
Wickenburg, Arizona					30	—1.1	26	N				5c	0	Calm		0	0	Fair	
Wilmington, N. Carolina	29.94	760.5	30.02	762.5	48	8.9	77	W	4	1.8		0	0			0	0	Clear	
Winnemucca, Nevada	25.65	651.5	30.01	762.2	30	—1.1	78	NE	8	3.6		0	0			0	0	Clear	
Wood's Holl, Mass	30.08	764.0	30.13	765.3	47	8.3	70	NE	6	2.7			10s		NE	0.65	16.5	Cloudy	
Yankton, Dakota	28.12	734.6	30.29	769.4	26	—3.3	81	S	4	1.8		2c	0	W		0	0	Fair	
Yuma, Arizona	29.90	759.4	30.07	763.8	46	7.8	43	N	3	1.3		5k	0	N		0	0	Fair	
SUB-SERIES.																			
York Factory, B. A	29.18	741.2	29.24	742.7	21.5	—5.8	100	W	3	1.3			10n					Snowing	J. Fortescue, W. Wood.
Havana, Cuba, W. I	30.05	763.3	30.07	763.8	73	22.8	67	NW	13.2	5.9			8n		N	2.21	56.1	Cloudy	Chas. Hasselbrink.
Kingston, Jamaica, W. I	30.10	764.5	30.11	764.8	79	26.1	82	Calm	0	0		8c	2n	Calm	E	0	0		James Gall.
Navassa, W. I	29.81	757.2	29.89	759.2	83.5	28.6		E	15	6.7						0	0	Clear	F. M Everett.
St. Thomas, W. I					79	26.1	86	E	2	0.9		4ck	4s	E		0	0	Cloudy	G. O. Gellich.
Paramaribo, D. Guiana, S. A			30.00	762.0	83	28.3	79	NE			2	5k	8ks	E		0	0	⅛ cloudy	C. J. Hering.
Batavia, Dutch Guiana, S. A																			Dr. H. Groot.
Medellin, Colombia, S. A	25.17	639.3			66.8	19.3	84	E			1	8cs	2s					Cloudy	Thomas Herran.
Honolulu, Oahu, H. I																			Daniel Smith.
Makawao, Maui, H. I																			F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters: Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.8 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,916.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Ploche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Ploche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.38 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

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

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

STATIONS AND VESSELS.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard Mare Island, Cal.	29.89	759.2	52	11.1	49	9.4	93	Calm	0	0	.....	.....	8	.....	Calm	0	0	.....	.....	Threatening	
Navy Yard, Pensacola, Fla.	30.40	772.1	.....	.....	47	8.3	85	NW	5	2.2	.....	.....	10	.....	SSE	0	0	.....	.....	D. clouds	
Navy Yard, Portsmouth, N.H	30.24	768.1	65	18.3	34	1.1	??	NE	3	1.3	.....	.....	.....	.....	SW	0	0	.....	.....	Clear	
Naval Hospital, Yokohama, Japan	29.99	761.7	55	12.8	48	8.9	92	N	.....	.....	2	.....	10n	.....	SE	0.07	1.8	.....	.....	Light rain	
Adams. S. 49° 39′ 03″ W. 65° 44′	29.67	753.6	70	21.1	48	8.9	92	Calm	.....	.....	0	.....	10	.....	.....	Light	Light	Light	E	Foggy	
Alert, Yokohama, Japan	30.08†	764.0†	52	11.1	52	11.1	100	NNW	.....	.....	2	.....	10	.....	N	.....	.....	Smooth	.....	Raining	
Alliance, Constantinople, Turkey.	30.13	765.3	65	18.3	67	13.9	88	NNE	.....	.....	2	.....	10	.....	NNE	.....	.....	.....	.....	Rainy	
Ashuelot. Tientsin, China	30.32	770.1	48	8.9	34	1.1	43	Calm	.....	.....	0	.....	0	.....	.....	.....	.....	.....	.....	Blue sky	
Canonicus, New Orleans, La.	30.32	770.1	41	5.0	48	8.9	70	NNW	.....	.....	3	.....	10	.....	N&W	.....	.....	.....	.....	Cloudy	
Colorado, New York, N. Y.	30.18	766.6	62	16.7	43	6.1	75	N	8	3.6	.....	.....	10	.....	NE	0.02	0.5	.....	.....	Squally	
Despatch, Constantinople, Turkey.	30.12	765.0	67	19.4	57	13.9	87	NW	.....	.....	2	.....	10	.....	N	.....	.....	.....	.....	Rainy	
Essex. Cape Palmas, Guinea	29.90	759.4	81	27.2	81	27.2	??	W	.....	.....	1	.....	2	.....	.....	.....	.....	Long	SW	D. clouds	
Franklin, Norfolk, Va.	30.50	774.7	54	12.2	54	12.2	74	N	14	6.3	.....	.....	9	.....	N	0	0	.....	.....	Cloudy	
Gettysburg, Malta	29.95‡	760.7‡	.....	.....	69	20.6	95	N&E	.....	.....	0–1	.....	1	.....	Calm	0	0	.....	.....	D. clouds	
Guard, N. 36° 30′, W. 52° 49′	30.44	773.2	70	21.1	70	21.1	75	S	.....	.....	3	.....	9	.....	S&E	.....	.....	Smooth	S	D. clouds	
Marion, Smyrna, Turkey	30.01	762.2	66	18.9	65	18.3	63	SE	.....	.....	0–1	.....	4	.....	Calm	0	0	Smooth	.....	D. clouds	
Michigan, Erie, Pa.	29.80	756.9	59	15.0	35	1.7	70	NNE	.....	.....	2	.....	10	.....	N	.....	.....	.....	.....	Cloudy	
Monocacy, Yokohama, Japan	30.05	763.3	67	19.4	50	10 0	93	NNW	.....	.....	2–3	.....	10	.....	N&W	Blank	Blank	.....	.....	D. clouds	
Monongahela, N. 37° 15′, E. 2° 08′	30.10	764.5	69	20.6	69	20.6	70	SSE	.....	.....	1	.....	cs	.....	.....	.....	.....	Smooth	.....	D. clouds	
New Hampshire, Port Royal, S.C.	30.22	767.6	.....	.....	50	10.0	93	NW	19	8.5	.....	.....	2	.....	SE	0	0	.....	.....	D. clouds	
Omaha, Callao, Peru	30.03	762.7	72	22.2	69	20.6	85	SE	2	0.9	.....	.....	10	.....	SE	0	0	Smooth	.....	Dull	
Onward, Callao, Peru	30.01	762.2	71	21.7	69	20.6	85	SE	.....	.....	2	.....	9	.....	.....	.....	.....	Long	W	D. clouds	
Ossipee. Norfolk, Va.	30.10	764.5	70	21.1	57	13.9	81	N	.....	.....	3	.....	10	.....	N	.....	.....	.....	.....	Overcast	
Palos, Shanghai, China	30.33	770.4	60	15.6	53	11.7	86	N	.....	.....	1	.....	10	.....	N&W	.....	.....	.....	.....	Overcast	
Pensacola, Mare Island, Cal.	29.98	761.5	.....	.....	52	11.1	83	Calm	.....	.....	0	.....	1	.....	.....	.....	.....	.....	.....	Pleasant	
Plymouth, Norfolk, Va.	30.05	763.3	54	12.2	55	12.8	87	N	.....	.....	5	.....	9	.....	.....	.....	.....	.....	.....	Overcast	
Ranger, Shanghai, China	30.38	771.6	.....	.....	57	13.9	81	NNW	.....	.....	3	.....	10	.....	W	.....	.....	.....	.....	Cloudy	
Rio Bravo, Brownsville, Texas	30.38	771.6	.....	.....	44	6.7	84	NNW	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	Hazy	
Santee, Annapolis, Md.	30.21	767.3	61	16.1	46	7.8	77	NW	.....	.....	5	.....	10	.....	N	.....	.....	.....	.....	Raining	
Saratoga, Hampton Roads, Va.	30.40†	772.1†	.....	.....	62	16.7	61	NNW	.....	.....	4–5	.....	8	.....	NW	0	0	.....	.....	Cloudy	
St. Louis, League Island, Pa	30.00	762.0	48	8.9	46	7.8	92	NE	5	2.2	.....	.....	10	.....	NE	0	0	.....	.....	Overcast	
Swatara, Hampton Roads, Va.	30.12	765.0	.....	.....	55	12.8	74	NNW	.....	.....	5	.....	10	.....	N&W	.....	.....	.....	.....	Overcast	
Tennessee, Yokohama, Japan	30.06	763.5	63	17.2	50	10.0	86	N	5	2.2	.....	.....	10	.....	Calm	0.06	1.5	Slight	N&E	Raining	
Trenton, Villefranche, France	30.08	764.0	66	18.9	62	16.7	83	ESE	5	2 2	.....	.....	10	.....	E	1.50	38.1	.....	.....	Raining	
Vandalia, Villefranche, France.	30.01	762.2	63	17.2	62	16.7	83	E	.....	.....	1	.....	10	.....	Calm	.....	.....	.....	.....	D. clouds	
Wabash, Boston, Mass.	30.28	769.1	56	13.3	43	6.1	67	NE	13	5.8	.....	.....	8	.....	NE	0.28	7.1	.....	.....	D. clouds	
Wyoming, Washington, D. C.	30.36†	771.1†	.....	.....	47	8.3	.....	N	.....	.....	1	.....	10	.....	.....	.....	.....	.....	.....	Hazy	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from: they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. ‡ Barometer corrected for instrumental error and reduced to sea-level.

UNITED STATES MARINE SERIES.

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

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.			Force.	Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.			Amount.		Direction.		Character.	Direction from—		
												Up'er	Low'r	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—				
S. S. Alaska																			Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama, N. 14° 02′, W. 90° 35′			29.69	754.1	79	26.1	56	NW			2		7		NW	Light	NE to NNW	D. clouds	Capt. Howard.
S. S. City of Peking, N. 39° 57′, E. 167° 15′			30.25*	768.3*	54	12.2	74	NW			3		4		NW	Small	NW	Showery	Lt. Z. L. Tanner, U.S.N.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio, N. 36° 10′, W. 156° 14′			30.25	768.3	71	21.7		N			3		10			Long	NNW	Overcast	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

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

PACIFIC MAIL S. S. CO. MARINE SERIES.

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

S. S. Alaska																			Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama, N. 14° 02′, W. 90° 35′			29.69	754.1	79	26.1	56	NW			2		7		NW	Light	NE to NNW	D. clouds	Capt. Howard.
S. S. City of Peking, N. 39° 57′, E. 167° 15′			30.25*	768.3*	54	12.2	74	NW			3		4		NW	Small	NW	Showery	Lt. Z. L. Tanner, U.S.N.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio, N. 36° 10′, W. 156° 14′			30.25	768.3	71	21.7		N			3		10			Long	NNW	Overcast	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

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

WHITE STAR LINE MARINE SERIES.

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

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

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

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

S. S. Belgic, N. 32° 25′, E. 160° 51′			30.28†	769.1†				Var.			4–5		Heavy		W	Moderate.	WSW	D. clouds	Capt. John Metcalf.
S. S. Gaelic																			Capt. W. H. Kidley
S. S. Oceanic, N. 27° 12′, E. 125° 20′			30.01	762.2	65	18.3	84	NNE			5–6		8		N; NE	Smooth		Showery	Capt. H. Parsell.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:36 a. m., Washington time. †Corrected for temperature and elevation; instrumental error not known.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

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

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig																			Capt. K. Undütsch.
S. S. Nürnberg, N. 47° 38′, W. 24° 7′			29.59	751.6	58.0	14.4	76	WNW			6		kn		NW	Rough	NW	Raining	Capt. A. Jaeger.
S. S. Ohio, N. 48° 43′, W. 26° 0′			29.71	754.6	55.5	13.1	68	W			7		10			High	W	Overcast	Capt. G. Meyer.

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

UNITED STATES MARINE SERIES.—CONTINUED.

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

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Lo'wr	Upper.	Lower.	Character	Direction From—		
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second	0—10.	0—10.	0—10.	From—	From—				
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana. N. 39° 49′, W. 69° 44′			29.64*	752.8*	63	17.2	83	E			4		4		E	Heavy	ESE	Cloudy	Captain Sargent.
S. S. Ohio. N. 51° 30′, W. 11° 20′			29.22	742 2	59	15.0	88	W			7		5		W	Very rough	W	Fair	Captain Morrison.
S. S. Pennsylvania, N. 46° 56′, W. 43° 19′			29.43†	747.5†	50	10.0	??	SW			8		10		SW	Heavy	SW	Cloudy	Captain Harris.

NOTE.—The originals give the barometer as read off: the wind-force by the scale 0 to 12. *Aneroid; correction for elevation applied, instrumental error not known.
†Corrected for temperature and elevation, instrumental error not known.

RED STAR LINE MARINE SERIES.

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

S. S. Nederland — Capt. Randle.
S. S. Switzerland — Capt. Jackson.
S. S. Vaderland — Capt. Nichols.

ALLAN LINE MARINE SERIES.

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

S. S. Hibernian
S. S. Scandinavian — Capt. W. Richardson.

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, Portsmouth, N. H.			30.16	766.1	41	5.0	??	NNE	21	9.4			2s		NE			Clear	Capt. James Jorgensen.

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

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

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

Albert J. Myer

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

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON NOVEMBER 11, 1877.

7:35 A. M. WASHINGTON mean time.

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

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

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

ALGERIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours	.....	.....	30.04	762.9	69.4	20.8	55	N	.....	.....	1	.....	2	.....	.....	0	0	Fair	Michel.
Algiers	.....	.....	29.93	760.2	69.8	21.0	54	NW	.....	.....	1	.....	3	.....	.....	0	0	Pretty fair...	Peter.
La Calle	.....	.....	30.01	762.2	72.9	22.7	50	W	.....	.....	2	.....	7	.....	.....	0	0	Very cloudy	Fleury.
Tunis	.....	.....	30.09	764.2	71.4	21.9	42	W	.....	.....	4	.....	10	.....	.....	0	0	Covered	Jacques.
Sfax	.....	.....	30.15	765.7	68.0	20.0	.....	NE	.....	.....	1	.....	8	.....	.....	0	0	Very cloudy	Husson.
Saida	.....	.....	30.07	763.7	62.2	16.8	38	S	.....	.....	1	.....	2	.....	.....	0	0	Fair	Millot.
Tebessa	.....	.....	30.13	765.3	.....	.....	.....	SW	.....	.....	4	.....	3	.....	.....	.....	.....	Pretty fair...	Bourgeois.
Geriville	.....	.....	30.09	764.3	56.8	13.8	60	ESE	.....	.....	3	.....	3	.....	.....	0	0	Pretty fair...	Lemaillot.
Laghouat	.....	.....	30.15	765.9	66.2	19.0	46	W	.....	.....	4	.....	4	.....	.....	0	0	Cloudy.....	Guyot.
Biskra	.....	.....	30.13	765.3	71.1	21.7	50	NW	.....	.....	1	.....	10	.....	.....	0	0	Covered	Kuntz.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

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

AUSTRIAN SERIES.

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

Agram	29.88	746.3	29.93	760.2	55.2	12.9	78	Calm	.....	.....	0	.....	10	.....	.....	0.008	0.2	.....	Prof. Ivan Stozir
Cracow, I. R. Observatory	29.19	741.3	29.98	761.4	37.8	3.2	93	NE	.....	.....	1	.....	10	.....	.....	0	0	.....	Dr. Wierzbiski.
Eperies	29.11	739.5	30.01	762.2	46.8	8.2	74	S	.....	.....	1	.....	10k	.....	NE	0	0	.....	Julius Mikolik.
Gratz	28.64	727.4	29.90	759.4	46.6	8.1	81	SW	.....	.....	1	.....	9	.....	.....	0	0	.....	Andreas Rospini
Hermannstadt	28.61	726.7	30.05	763.3	47.1	8.4	61	ESE	.....	.....	1	.....	0	.....	.....	0	0	.....	Prof. Reissenberger.
Kremsmünster	28.47	723.2	29.86	758.5	33.4	0.8	96	E	.....	.....	1	.....	10	.....	.....	0	0	.....	Prof. C. Wagner.
Lemberg	29.01	736.8	30.01	762.3	44.6	7.0	82	SE	.....	.....	1	.....	1	.....	.....	0	0	.....	Dr. T. Stanecki.
Pola	29.84	757.8	29.95	760.6	63.1	17.3	79	SSE	.....	.....	3	.....	10cs	.....	.....	0.025	0.63	.....	I.R.Hydrographic Office.
Szathmar	29.03	752.5	30.10	764.6	48.0	8.9	71	SE	.....	.....	2	.....	0	.....	.....	0	0	.....	Johann Tamas, S. J.
Szegedin	29.74	755.5	30.03	762.7	54.7	12.6	76	S	.....	.....	1	.....	7	.....	.....	0	0	.....	Karl Stancel.
Trieste	29.86	758.4	29.96	761.0	59.2	15.1	90	ESE	.....	.....	1	.....	10	.....	.....	0.110	2.8	Rainy.....	P. Busin.
Vienna	29.16	740.6	29.87	758.7	41.4	5.2	97	W	.....	.....	1	.....	10	.....	.....	0	0	Foggy.....	I.R. Central Met.Obs'y.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time, and at Trieste at 7 a. m. of the following day. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 388.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

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

Arlon	28.21	716.4	29.71	754.7	48.6	9.2	82	SW	.....	.....	3	.....	10	.....	.....	0.126	3.2	.....	Prof. M. Passau.
Brussels	29.34	745.1	29.63	760.1	53.8	12.1	75	SW	.....	.....	4	.....	6	.....	SW	0.075	1.90	.....	Royal Observatory.
Furnes	29.43	747.5	29.45	748.1	52.7	11.5	78	SSW	.....	.....	6	.....	10	.....	.....	0.114	2.9	.....	M. E. de Cae.
Maeseyck	29.46	748.3	29.59	751.6	54.7	12.6	79	S	.....	.....	6	.....	5	.....	.....	0.024	0.6	.....	M. Pierrot.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

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

BRITISH SERIES.

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

STATIONS.	Barometer. Corrected for instrum't'al error and temperature. Inches.	Barometer. Corrected for instrum't'al error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Aberdeen	28.57	725.7	28.66	728.0	48.0	8.9		SSE	39	17.4			9			0.350	8.89	Squally	W. Boswell.
Ardrossan																			William McNeil.
Armagh, Observatory			28 27	718.0	50.2	10.1		SSE	32	14.3								Squally	S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)			28 73	729.7	49.4	9.7		SSE	31	13.9			10					Raining	John Hartnup.
Birr Castle, (Parsonstown)			28.30	718.8	51.8	11.0		SW			3		10					Raining	J. Dreyer.
Bradford, Yorkshire																0	0		J. McLandsborough.
Bridgetown, (Barbados)	29.88	758.9	29.91	759.7	82.0	27.8		NE			1		2					D. clouds	Pvt. G. W. Roberts, A.
Cambridge, Observatory			29.16	740.7	50.2	10.1		S			4		10					Raining	H. Todd. [H. C.
Cardington			29.06	738.1	51.0	10.6		S			6		10					Raining	John McLaren.
Chatham, School M. E	29.05	737.9	29.18	741.2	48.2	9.0		SW			4		9					Raining	Lt.-Col. C.M.Martin, R.E.
Dartmoor	27.54	699.5	28.98	736.1	47.6	8.7		SW			7		10					Rain and fog	Alexander Watt.
Davos Platz (Switzerland)																			Francis Redford, M. A.
Donaghadee	28.35	720.1	28.38	720.8	51	10.6		SW			6		10					Raining	J. Mac Gowan.
Dover	29.28	743.7	29.31	744.5	53	11.7		SW			6		9					Squally	J. Costello.
Eccles, (near Manchester)			28.84	732.5	50.0	10.0		S	14.6	6.3			10					Raining	Thomas Mackereth.
Falmouth, Observatory	28.69	728.7	28.91	734.3	52.9	11.6		SSW			7		10					Raining	The Staff.
Fort Napier, (Natal)	27.74	704.6	29.97	761.2	64.1	17.8		E			2		10					Overcast	Pvt. G. Salmon, A.H.C.
Free Town, (Sierra Leone)			29.96	761.0	86	30.0		W			0		3					D. clouds	
Galway, Queen's College					50	10.0		SW			6		9					Gloomy	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	30.04	763.0	30.09	764.3	66.5	19.2		NW			2		0					Blue sky	Corpl. C. Aitken, A.H.C.
Glasgow, Observatory	28.28	718.3	28 49	723.6	49.5	9.7		SSW			8		10					Raining	D. G. Maclean.
Great Yarmouth	29.25	742.9	29.26	743.2	52	11.1		S			6		6					Squally	G. T. Watson.
Greenwich, Royal Obs'y	29.03	737.3	29.20	741.7	51.0	10.6		SW			6		10					Raining	The Staff, for G. B. Airy.
Guernsey	29.00	736.6	29.22	742.2	53	11.7		SSW			7		10					Raining	Dr. S. E. Hoskins, F.R.S.
Helston			28.96	735.6	54	12.2		S			8		10n			0.34	8.6	Raining	M. P. Moyle.
Holyhead	28.44	722.4	28.49	723.6	53	11.7		SSW			6		10					Raining	John Tilston.
Jersey	29.00	736.6	29.29	744.0	53.0	11.7		SW			7		10					Raining	J. Fisher.
Kew, Observatory			29.19	741.4	51.1	10.6		S	34	15.2			10					Raining	The Staff.
Kingstown	28.38	720.8	28.41	721.6	53	11.7		S			6		10					Raining	George Mitchell.
Leicester, Museum			28.90	734.0	50.8	10.4		SW			6		10					Raining	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	30.10	764.5	30.18	766.6	69.0	20.6		S			2		4					D. clouds	S'gt. C. Arbeiter, A.H.C
Nairn	28.40	721.3	28.49	723.6	49	9.4		SE			5		5					½ clouded	W. B. Penny.
Nassau, (Bahamas)			30.05	763.3	70.5	21.4		NW			7		9					Overcast	C. S. Duncombe.
Nottingham, Observatory	28.76	730.5	28.95	735.3	50.3	10.2		S			6		10d		S	0.022	0.56	Raining	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	28.40	721.3	28.90	734.0	49.0	9.4		S			6		10					Raining	Rev. Stephen Whitty
Oxford, Radcliffe Obs'y			29.07	738.4	51	10.6		S			5		10					Raining	F. Lucas
Plymouth	28.90	734.0	28.98	736.1	53.5	11.9		SSW			6		10					Raining	John Merrifield
Roche's Point	28.40	721.3	28.45	722.6	49	9.4		SW			7		10					Raining	W. Kennedy.
Saint Ann's Head																			John C. Walker.
Sandwick Manse, (Orkneys)			28.12	714.2	46	7.8		SE	42	18.8			10					Squally	Rev. C. Clouston, LL. D
Scutari, Cemetery, (Turkey			30.10	764.5	58.8	14.9		SW			1		5					D. clouds	Sergt. W. H. Lyne.
Sheffield	28.64	727.4	28.87	733.3	50.2	10.1		S			6		10			0.40	10.2	Raining	W. F. Cooper.
Silloth Rectory	28.57	725.7	28.69	726.4	50.2	10.1	79	S			7		10			0.355	9.02	Raining	Rev. F. Redford, M. A.
Stonyhurst, Observatory					48.6	9.2		S			6		10					Raining	Rev. S. J. Perry.
Stornoway, Lews C., (Hebr.)			28.10	713.7	49	9.4		SE			8		10					Raining	John Smith.
Stratfield Turgiss	28.91	734.3	29.12	739.6	51.2	10.7		S			3		10					Raining	Rev. C. H. Griffith, F.M.S.
Thurso			28.53	724.6	47	8.3		SE			6		8					Gloomy	John Trotter.
Truro, Royal Institution			28.90	734.0	55	12.8		SE			10		10					Raining	W. Newcombe.
Valencia, Observatory			28.34	719.8	49.7	9.8		WSW	45	20.1			10					Overcast	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)					51	10.6		SW			8		10			0.6	15.		Henry Mercer.
Cape Good Hope, Obs'y	30.03	762.7	30.07	763.8	76.7	24.8	48	S	6	2.7		0	0						The Staff, for E. J. Stone.
Hobart Town, (Tasmania)			29.72	754.9	49.5	9.7	81	NW			3		8k			0.18	4.6		Francis Abbott, F.R.A.S.
Leith, Restalrig Park			28.57	725.7	49.3	9.6		SW			5		10k			0.08	2.0	Showery	Andrew Gibb.
Mauritius, Observatory	29.82	757.4	30.01	762.2	80.8	27.1	64	NNW	14.0	6.3		2	6		N	0	0	Cloudy	C. Meldrum.
Melbourne, Observatory	29.98	761.5	30.07	763.8	54.1	12.3	78	WSW	10	4.5			8			0	0	Dull	R. L. J. Ellery.
Monach L't-house, (Hebrides)																			J. Youngclause.
North Unst, (Shetland Is.)																			Robert Burnet.

Note.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,408 feet, or 429.7 meters; Davos Platz, 5,1057 ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m.

Marine Series. Vessels.	Barometer. Corrected for instrum't'al error and temperature. Inches.	Barometer. Corrected for instrum't'al error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea or swell. Height scale 0—9	Sea or swell. Direction from—	Weather	Observer.
S. S. Algeria																			Capt. W. Watson.
S. S. Batavia, N. 51° 15′, W. 18° 50′			28.64	727.4	44	6.7		WNW			7		10			7	W	Rain & hail.	Capt. J. E. Mouland.
Ship Camperdown																			Capt. A. T. Miller.
Brig Catherine																			Capt. Adam Smith.
Barque Celeste																			Capt. D. F. McKechnie.
S. S. Hibernia																			Capt. W. R. Cato.
Barque Maroon																			Capt. A. T. Brown.
Ship Mikado																			Capt. C. C. Prehn.
S. S. Seine																			Capt. H. Manning.
Barque Sorata																			Capt. Jas. J. Price.
Schooner Traveller																			Capt. Alex Simpson.

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

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

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

STATIONS.	BAROMETER. Corrected for instrum'tal error and temperature. Inches.	BAROMETER. Corrected for instrum'tal error and temperature. Millimeters.	BAROMETER. Reduced to sea-level. Inches.	BAROMETER. Reduced to sea-level. Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Upper. From—	CLOUDS. Direction. Lower. From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	WEATHER.	OBSERVER
San José	26.20	665.5			68.0	20.0	86	NE			5		9cs;d		NE	Inap.	Inap.		Federico Maison.

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

DANISH SERIES.

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

Copenhagen	29.59	751.5	29.63	752.7	50.2	10.1	92	S			2		8						
Fanöe	29.45	748.0	29.47	748.5	49.1	9.5	92	S			6		10						
Godthaab, (Greenland)	29.32	744.7	29.36	745.8	22.1	— 5.5	73	NNE			4		9						
Stykkisholm, (Iceland)	28.60	726.3	28.64	727.4	36.5	2.5	96	NE			7		8						
Thorshavn, (Faröe)	29.50	728.9	28.54	724.8	44.8	7.1	87	SE			4		5						
Vestervig	29.27	743.4	29.44	747.7	48.9	9.4	92	S			6		6						

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

FRENCH SERIES.

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

Alençon, Normal School	29.04	737.6	29.59	751.6	53.6	12	86	SW			4		10		NW	0	0	Covered	Collignon, Director.
Amiens, Normal School	29.54	750.2	29.65	753.0	55 0	12.8	75	SSW			2		2		SW	0	0	Slightly cl'dy	Bonvarne, Director.
Avignon, Normal School	29.78	756.5	29.86	758.5	59.0	15	63	N			1		0			0.307	7.8	Very clear	Mr. Giraud, Director.
Bar-sur-Seine	29.14	740.1	29.70	754.4	56.3	13.5	60	SW			3		5km			0.028	0.7	Cloudy	C. Saillard.
Beaumette Obs'y (Angers)	29.35	745.4	29.50	749.4	55.4	13.0	83	S	21.5	9.6			10		S	0.402	10.2	Raining	Albert Cheux.
Beauvais	29.28	743.6	29.56	750.7	54.9	12.7	74	SSW			3		10		SW	0	0	Covered	Normal School.
Besançon	28.95	735.2	29.84	757.9	54.7	12.6	79	S			2		5		SW	0.87	22.	Cloudy	Normal School.
Bourg-en-Bresse	28.97	735.7	29.80	759.1	52.3	11.3	80	S			4	2c		S		0.969	24.6	Slightly cl'dy	Normal School.
Bourges, Normal School	29.08	738.0	29.63	752.6	54.5	12.5	98	SE			2		2		NE	0	0	Slightly cl'dy	A. Wagner, Director.
Brest, Naval Observatory	28.98	736.2	29.21	741.8	52.3	11.3	86	SW			7		10		SW	0.069	1.75	Raining	The Staff.
Carcassonne, Normal School	29.49	749.1	29.00	759.4	63.1	17.3	72	NNE			2		10		NNE	0.43	11.	Covered	Vateau, Director.
Caen	29.21	741.9	29.40	746.8	53.8	12.1	98	NW			6		10		ENE	0	0	Covered	Normal School.
Chartres, Normal School	29.03	737.4	29.60	751.7	55.4	13	79	SSW			6		10			0.04	1.	Covered	Lequin, Director.
Châlons-sur-Marne, N. Sch'l	29.34	745.3	29.65	753.2	56.7	13.7	71	S			3		5k		S	0	0	Cloudy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.47	723.0	29.80	756.8	58.6	14.8	48	SW			2		8		SW	0.039	1.0	Very cloudy	Alluard, Director.
Commercy, Normal School	29.90	734.0	29.80	756.9	52.5	11.4	83	WNW			2		2		NW	0	0	Slightly cl'dy	Dr. Goulet, Director.
Commune de Grénasque*	28.76	730.5	29.90	759.5	54.1	12.3	83	NW			2		5		NW	0.024	0.6	½ covered	V. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	29.43	747.6	29.65	753.1	56.8	13.8	82	SSE			6		10			0.118	3.0	Covered	Mouillot, Director.
Le Mans, Normal School	29.20	743.1	29.56	750.8	54.0	12.2	76	SW			6		8		SW	0.08	2.	Very cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	28.88	733.6	29.75	755.7	54.5	12.5	81	SSW			2		5		E	0	0	Cloudy	Pin, Director.
Lorient, Naval Observatory	29.31	744.4	29.41	746.9	53.6	12.0	86	S			8		10			1.630	41.4	Covered	T. Carré, Director.
Mâcon, Normal School	29.12	739.7	29.78	756.3	51.6	10.9	93	Calm			0		0			0.67	17.	Clear	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	28.73	729.7	29.77	756.2	52.5	11.4	80	SSW					10		NNE	0	0	Covered	Normal School.
Nismes, Normal School	29.69	754.2	29.89	759.3	59.0	15	91	N			1		0			0.20	5.	Clear	Boyer, Director.
Orleans, Normal School	29.29	743.9	29.67	753.5	55.0	12.8	70	SW			8		8		W	0.08	2.	Very cloudy	Bernard, Director.
Paris, Observatory	29.35	745.4	29.58	751.4	54.3	12.4	73	S			4		10k		SW	0.004	0.10	Covered	National Observatory.
Privas	28.83	732.2	29.80	759.1	57.6	14.2	67	S			2		1		S	0.262	6.4	Clear	Normal School
Rochefort, Naval Obs'y	29.67	753.6	29.70	754.4	57.9	14.4	76	SSW			6		10		SSW	0.59	15.	Raining	Lt. Decante, Director.
Rouen, Normal School	29.44	747.8	29.53	750.0	55.2	12.9	68	S			2		10		S	0	0	Covered	F. Lucard, Director.
Tarbes, Normal School																			T. Hugues, Director.
Villefranche	29.10	739.0	29.80	756.8	59.0	15	82	SSE			2		8		Calm	0.772	19.6	Very cloudy	Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.80	757.0	29.83	757.7	82.4	28										0.16	4.		L'Abbé Marchési.
Marseilles, Observatory			29.87	758.6	59.0	15.0	68	NW			2-3		1			0.008	0 20		The Staff.
Mont-Louis	24.73	628.2	30.05	763.2	46.2	7.9	52	SSW	16 8	7.50			1		SSW	0.087	2.2		Mr. Falguères.
Nice			29.83	757.7	62.1	16.7	85	S					10		SW	0.322	8.2	Raining	Dr. A. Niepce.
Paris, Montsouris Obs'y	29.30	744.3	29.58	751.3	54.1	12.3	70	SSW			3-4		10		SSW	Inap.	Inap.		Marié Davy, Director.
Perpignan			29.89	759.2	60.3	15.7	60	S	5.6	2.50			7		SW	0.051	1.3		Dr. Fines.
Pic du Midi, (Summit,) H. P.	20.98	533.0			28 0	— 2.2		W			3		8					Cloudy	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.32	566.9			33.3	0.7		W			2		8			0.110	2.8	Cloudy	Gen'l de Nansouty.
Saint Maur, (near Paris)	29.43	747.6	29.60	751.8	54.9	12.7	70	S			4		10		SSW	0.087	2.2	Covered	E. Renou.
Toulouse, Observatory	29.18	741.1	29.90	759.4	57.2	14.0	61	SE			1		2			0.008	0.2	Raining	The Staff.
Tours	29.44	747.8	29.64	752.8	56.1	13.4	74	SSW			4		10		SW	0.063	1.6		C. Marquet.
Versailles, (near Paris)			29.58	751.4	55.0	12.8	75	SW			3		10			0	0	Covered	Dr. A. Borigny.
Zi-Ka-Wei, (near Shanghai)	30.30	769.7	30.33	770.3	45.5	7.5	87	SE	9.2	4.1			0			0	0	Clear	Mare Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; for Montsouris, the barometer reduced to freezing but not to sea-level. At Mirecourt the cloud direction is apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.0 feet; Commune de Grénasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,686.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,369 m., or 7,702.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

GERMAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Berlin	29.60	751.8	29.77	756.1	55.0	12.8	79	S			1		8			0.060	1.52	Raining	Prof. Arndt.
Breslau	29.35	745.5	29.88	758.9	46.6	9.8	81	SSE			2		10			0	0		Royal University Obs'y.
Carlsruhe	29.34	745.2	29.76	755.9	55.2	12.9	71	SW			1		9			0.047	1.2		Albert Senz.
Cassel	29.17	740.9	29.78	765.3	55.0	12.8	73	S			2		8	SSW		0	0		Dr. H. Möhl.
Crefeld	29.43	747.4	29.58	751.4	56.8	13.8	65	SW			5		5cs;k			0	0		Director Lose.
Emden	29.49	749.1	29.53	750.0	52.2	11.2	88	S			3		1			0	0		Prof. Prestel.
Frankfort on the Main	29.43	747.6	29.80	756.9	55.2	12.9		SSW			2		7			Inap.	Inap.		Physical Society.
Friedrichshafen	28.42	721.8	29.86	758.4	50.9	10.5	92	S			3		10	SW		0	0		M. Wilhelm.
Hamburg	29.58	751.4	29.65	753.2	54.7	12.6	82	SSW			5		4c;k			0	0	Fine	Captain F. Hegemann.
Kiel	29.60	751.7	29.61	752.2	53.2	11.8	80	SSW			2		8			0	0		Prof. G. Karsten.
Königsberg, (Prussia)	29.86	758.4	29.94	760.5	39.6	4.2	84	SE										Covered	Prof. E. Luther.
Köslin			29.77	756.1	48.4	9.1		S			2		4			0	0		H. Müller.
Leipsic, Observatory	29.38	746.3	29.80	757 0	52.0	11.1	91	SSE			3		10			0.079	2.0	Rainy	Prof. Bruhns.
Memel, Naval School	29.89	759.3	29.94	760.5	43.3	6.3	81	SE			4		6c;cs	SW					Reinbrecht von Skalweit.
Neufahrwasser	29.87	758.6	29.88	759.0	45.9	7.7	85	S			2		10	SSE		0	0		A. Lothes.
Posen	29.61	752.1	29.90	759.4	48.9	9.4	82	S			2		10					Cloudy	Dr. Magener.
Strassburg Obs., (in Alsace	29.24	742.7	29.78	756.5	55.0	12.8	72	S			3		6	W		0.160	4.06		Dr. Schur.
Stuttgart	28.84	732.4	29.76	756.0	54.9	12.7	94	W			1		9	W		0	0		Prof. Schoder.
Treves, (Trier)	29.08	738.6	29.60	751.7	55.2	12.9	72	W			5		10			0.067	1.69	Foggy	Prof. Flesch.
Weissenburg, (Bavaria)	28.30	718.7	29.81	757.2	48.7	9.3	92	S	2	1			10	SSW		0.055	1.4	Covered	Dr. Von Bebber.
Wustrow, Naval School	29.71	754.6	29.75	755.6	51.6	10.9	86	SSE			4		8					Cloudy	E. F. Schütz.
German Naval Series.																			

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

GREEK SERIES.

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

Athens	29.76	755.9	30.15	765.9	61.2	16.2		S										Clear	Dr. J. F. J. Schmidt.

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

INDIAN SERIES.

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

Kurrachee	29.95	760.8	30.00	762.0	84.0	28.9	65	WSW	22.0?	9.8?			1			0	0	D. clouds	
Deesa	29.55	750.4	30.02	762.5	87.7	30.9	35	Calm					4	W		0	0	D. clouds	
Bombay	29.93	760.1	29.96	761.1	84.1	28.9	58	WNW	10.0	4.5			2		WSW	0	0	D. clouds	
Poona	27.94	709.7	29.94	760.5	80.7	27.1	43	NE					7	E		0	0	D. clouds	
Lahore	29.24	742.8	30.01	762.2	70.2	21.2	57	Calm	2.3	1.0			3			0	0	Blue sky	
Belgaum	27.44	697.1	29.99	761.8	76.1	24.5	58	E	1.0	0.4			2	W		0	0	D. clouds	
Bangalore																			
Roorkee	28.98	736.2	29.90	759.4	74.4	23.6	46	SE	1.5	0.7			0			0	0		
Agra	29.42	747.2	29.99	761.7	79.7	26.5	37	NW								0	0		
Trichinopoly																			
Nagpur	28.96	735.6	30.02	762.4	77.9	25.5	42	Calm	2.4	1.1			2			0	0	Blue sky	
Madras																			
Lucknow	29.62	752.3	29.99	761.8	78.3	25.7	43	NW	2.2	1.0			0			0	0	Blue sky	
Allahabad	29.69	754.0	30.00	762.1	74.4	23.6	55	Calm	0.8	0.4			0			0	0	Blue sky	
Patna	29.82	757.5	30.01	762.2	80.3	26.8	45	W	0.8	0.4			0			0	0	Blue sky	
Hazaribagh	27.98	710.7	30.03	762.8	70.8	21.6	39	WNW	4.3	1.9			0			0	0	Blue sky	
Cuttack	29.92	760.0	30.00	762.1	76.0	24.4	63	Calm	0.2	0.1			0			0	0	Blue sky	
Calcutta (Alipore)	29.98	761.6	30.00	762.1	78.2	22.9	73	N	3.0	1.3			0			0	0	Blue sky	
Goalpara	29.59	751.5	29.98	761.5	75.8	24.3	68	SE	2.4	1.1			0			0	0	Blue sky	
Chittagong	29.89	759.2	29.98	761.6	78.1	25.6	72	Calm	0.8	0.4			4			0	0		
Sibsagar	29.70	754.3	30.04	763.1	69.6	20.9	86	ENE	1.6	0.7			0			0	0	Blue sky	
Rangoon																			
Jubbulpore	28.65	727.6	30.02	762.6	78.5	25.8	51	NE	1.3	0.6			0			0	0	Blue sky	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,026 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 1—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	21.98	558.3	29.86	758.5	32.0	0.0	99	NW	.....	.....	1	.....	10	.....	.....	4.725*	120.0*	.....	Ab. Dom. Mongini.
Stelvio	21.99	558.6	29.90	759.4	29.3	— 1.5	.....	SSE	.....	.....	4	.....	10	.....	.....	0.437	11.1	.....	Signora Ernesta Manfredi.
Udine	29.49	749.1	29.91	759.6	54.9	12.7	98	Calm	0	0	.....	.....	10	.....	.....	0.929	23.6	.....	Prof. Giovanni Clodig.
Padua	29.77	756.2	29.88	759.0	53.6	12.0	99	NE	3.1	1.4	.....	.....	10	.....	.....	0.980	24.9	.....	Prof. Dott. Lorenzoni.
Vicenza	29.69	754.2	29.89	759.2	51.1	10.6	97	NW	0.7	0.3	.....	.....	10	.....	.....	0.795	20.2	.....	Conte Alm. Da Schio.
Verona	29.69	754.1	29.91	759.8	59.4	15.2	86	NE	0	0	.....	.....	10	.....	.....	1.039	26.4	.....	Dott. B. Bertoncelli.
Bergamo	28.55	725.2	29.80	756.1	49.6	9.8	89	SW	.....	.....	2	.....	10	.....	.....	1.882	47.8	.....	Prof. Trionfini Carlo.
Domodossola	28.87	733.2	29.92	759.9	48.2	9.0	91	Calm	.....	.....	0	.....	10	.....	.....	0.697	17.7	.....	Prof. Giuseppe Calza.
Milan	29.39	746.4	29.91	759.8	50.0	10.0	.....	ENE	.....	.....	1	.....	10	ESE	.....	1.016	25.8	.....	Ab. Gio. Capelli.
Pavia	29.54	750.4	29.90	759.4	48.4	9.1	96	SE	.....	.....	1	.....	10	.....	.....	0.433	11.0	.....	Prof. Gio. Cantoni.
Moncalieri	28.98	736.0	29.90	759.4	50.9	10.5	88	ENE	0	0	.....	.....	10	.....	.....	0	0	.....	Prof. P. F. Denza.
Mondovi	27.96	710.1	29.90	759.4	47.3	8.5	89	NE	.....	.....	2	.....	10	.....	.....	0.059	1.5	.....	Prof. D. C. Bruno.
Porto Maurizio	29.05	753.1	29.86	758.5	57.7	14.3	89	SSE	.....	.....	2	.....	10	W	.....	1.362	34.6	.....	Prof. L. Vassallo.
Genoa	29.69	754.2	29.86	758.5	57.6	14.2	91	SE	6.3	2.8	.....	.....	10	S	.....	0.732	18.6	.....	Prof. G. M. Garibaldi.
Piacenza	29.64	752.8	29.90	759.4	48.9	9.4	93	W	0.7	0.3	.....	.....	10	.....	.....	0.390	9.9	.....	Dott. G. Manzi.
Parma	29.59	751.5	29.91	759.7	50.7	10.4	95	NW	.....	.....	4	.....	10	.....	.....	0.350	8.9	.....	Prof. P. Pigorini.
Florence	29.69	754.1	29.95	760.7	64.4	18.0	57	SW	.....	.....	2	.....	10	.....	.....	0.177	4.5	.....	Cav. F. Meucci.
Leghorn	29.83	757.6	29.91	759.8	63.3	17.4	84	S	16.8	7.5	.....	.....	10	S	.....	1.083	27.5	.....	Prof. P. Monte.
Siena	28.75	730.3	29.97	761 1	59.5	15.3	73	S	9.4	4.2	.....	.....	10	S	.....	0	0	.....	Prof. L. Toscani.
Urbino	28.44	722.3	30.00	762.1	57.9	14.4	72	SW	.....	.....	4	.....	10	.....	.....	0	0	.....	Prof. P. Serpieri.
Pesaro	29.89	759.3	29.95	760.6	60.3	15.7	69	SW	9.8	4.4	.....	.....	10	SW	.....	0	0	.....	Prof. Luigi Guidi.
Ancona	29.85	758.2	29.99	760.9	59.7	15.4	69	SE	.....	.....	4	.....	10	.....	.....	0	0	.....	Prof. F. DeBosis.
Grosseto	29.90	759.4	30.01	762.2	64.8	18.2	75	SSE	.....	.....	6	.....	8	S	.....	0.012	0.3	.....	Avv. P. Ponticelli.
Rome	29.89	759.2	30.07	763.7	64.2	17.9	65	S	16.8	7.5	.....	.....	10	.....	.....	0	0	.....	Prof. P. A. Secchi.
Naples, O. U.	29.95	760.4	30.14	765.5	66.0	19.2	63	SSE	.....	.....	4	.....	10	SE	.....	0	0	.....	Prof. L. Palmieri.
Lecce	.....	.....	.....	.....	62.8	17.1	84	SSE	2.5	1.1	.....	.....	0	.....	.....	0	0	.....	Prof. C. De Giorgi.
Cosenza	.....	.....	.....	.....	64.9	18.3	68	NE	0.7	0.3	.....	.....	2	.....	.....	0	0	.....	Prof. F. D. Conti.
Cagliari	.....	.....	.....	.....	68.9	20.5	75	S	.....	.....	2	.....	9	W	.....	0	0	.....	Prof. A. Pacinotti.
Riposto, (Sicily)	30.00	762.0	30.05	763.2	64.0	17.8	68	SE	.....	.....	2	.....	3	.....	.....	0	0	.....	Prof. F. Caffero.
Palermo	29.83	757.6	30.03	764.0	64.6	18.1	67	ENE	3.1	1.4	.....	.....	9	.....	.....	0	0	.....	Prof. G. Cacciatore.
Caltanissetta	28.17	715.5	30.11	764.9	60.1	15.6	68	SSW	.....	.....	2	.....	3	E	.....	0	0	.....	Prof. A. Pagani.
Syracuse	30.08	763.9	30.15	765.8	63.1	17.3	77	SE	.....	.....	1	.....	5	SW	.....	0	0	.....	Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.61	752.0	30.16	766.1	62.1	16.7	72	SSW	1.3	0.6	.....	.....	10	.....	.....	1.599	40.6	.....	Prof. F. Brioschi.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals give the wind-force on the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,548.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,358.3 ft.; Bergamo 379.6 m., or 1,245.3 ft.; Mondovi, 353 m., or 1,321.2 ft.; Siena, 348.5 m., or 1,143.3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft. *Unmelted snow.

JAPANESE SERIES.

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

Tokei (Yeddo)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	The Observatory.
Tokei (Yeddo) University	29.94	760.5	30.04	762.9	51.2	10.8	90	.....	.....	.....	.....	.....	.....	.....	.....	0.04	1.0	Clear	Prof. P. V. Veeder.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

MEXICAN SERIES.

By authority of the Secretary of Public Works.

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

Aguascalientes	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	I. N. Marin, M. D.
Córdoba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	C. Peña, M. D.
Cuernavaca	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	L. Castillo, A. E.
Guadalajara	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. L. Perez.
Guanajuato	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. V. Fernandez.
Leon	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. M. Leal.
Mexico	23.22	589.7	30.40	772.0	39.0	3.9	74	Calm	0	0	.....	0	Haze	.....	.....	0	0	Hazy	Central Observatory.
Orizaba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	N. N.
Orizaba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	I. Orozco, M. D.
Pabellon, (Aguascalits)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. V. de Leon, M. E.
Puebla	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. B. Gonzalez.
Toluca	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. C. Velazquez.
Tlacotalpam	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. F. R. Bayly.
San Luis Potosi	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	G. Barroeta, M. D.
Vera-Cruz	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. J. Rossell.
Zacatecas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. A. Bonilla, M. E.
Puebla, (Catholic Institute)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	P. Spina. [M. M. D. D.
Morelia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Tena, F. L. Páramo,

Note.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,230 m., or 7,512.9 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

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

Flushing	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Groningen	29.47	748.6	29.47	748.6	52.5	11.4	.....	S	.....	.....	5	.....	.....	.....	.....	0.031	0.8	.....	.....
Helder	29.46	748.3	29.52	749.7	52.2	11.2	.....	S	.....	.....	4	.....	.....	.....	.....	0	0	.....	.....
Hellevoetsluis	29.40	746.7	29.40	746.7	51.3	10.7	.....	S	.....	.....	5	.....	.....	.....	.....	0.197	5.0	.....	.....
Utrecht	.....	.....	29.46	748.3	53.2	11.8	80	S	.....	.....	6	.....	.....	.....	.....	.....	.....	.....	.....
.....	29.45	748.1	29.50	749.3	53.6	12.0	72	S	.....	.....	5	.....	2	.....	.....	0.004	0.1	Light cloudy	H. v d Brink.

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

NORWEGIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	29.12	739.7	29.18	741.1	48.6	9.2	79	S	35.1	15.7	.....	.....	9	.....	.....	0.012	0.3	.....	
Brönö	29.20	741.6	29.24	742.6	51.1	10 6	29	SSE	36	16	.....	.....	5	.....	.....	0	0	.....	
Christiania	29.28	743.7	29.43	747 4	46.8	8.2	96	SSE	18	8	.....	.....	9	.....	.....	0.878	22.3	Raining	
Tromsö	29.32	744.6	29.36	745.7	39.6	4.2	77	SW	7	3	.....	.....	5	.....	.....	0	0	.....	

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

PORTUGUESE SERIES.

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

Angra, (Azores)	29.93	760.3	30.13	765.2	62.2	16.8	85	W	19.9	8.9	.....	.....	7	.....	.....	0	0	.....	Dr. J. A. Sampaio
Campo Major	29.07	738.3	30.10	764.6	55.4	13.0	86	SSW	9.8	4.4	.....	.....	9	SSW	.....	0.157	4.0	.....	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.10	764.6	30.19	766.8	69.8	21.0	52	SSE	6.3	2.8	.....	.....	6	.....	.....	0.020	0.5	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.71	754.7	30.07	763.8	61.3	16.3	71	SW	17.4	7.8	.....	.....	8	NW	.....	0.173	4.4	.....	The Staff.
Ponta Delgada, (Azores)	30.11	764.7	30.18	766.5	65.5	18.6	63	W	11.2	5.0	.....	.....	3	.....	.....	0	0	.....	

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

Naval Series. Vessels.	Sea or swell. Height scale 0–9	Sea or swell. Direction from—		
S. S. India.	.....	.....	.....	A. D. Pedroso, Com'd't. Lt. S. A. P. de Mirando.

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

RUSSIAN SERIES.

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

Warsaw	29.56	750.8	30.00	761.9	37.0	2.8	96	SE	13	6	.....	.....	10	.....	.....	.....	.....	Light fog	Astronomical Obs.
Wilna	29.72	754.8	30.15	765.8	38.1	3.4	92	S	2	1	.....	.....	10	.....	.....	.....	.....	.....	Astronomical Obs.
Dorpat	29.86	758.5	30.11	764.9	39.6	4.2	90	SE	7	3	.....	.....	6	.....	.....	.....	.....	.....	Prof. Dr. Weihrauch
St. Petersburg	30.13	765.3	30.15	765.7	37.9	3.3	89	S	22	10	.....	.....	10	.....	.....	.....	.....	.....	Central Physical Obs.
Kuopio	29.62	752.3	29.95	760.6	41.0	5.0	100	SSE	18	8	.....	.....	10	.....	.....	Blank	Blank	.....	Ch. Forsten.
Kieff	29 54	750.2	30.19	766.9	38.1	3.4	90	E	4	2	.....	.....	10	.....	.....	.....	.....	.....	Physical Cabinet.
Nikolaiev	30.11	764.9	30.19	766.7	39.4	4.1	95	NE	4	2	.....	.....	10	.....	.....	.....	.....	.....	Kurdakof.
Kertch	30.09	764.2	30.11	764.7	52.9	11.6	86	NNW	7	3	.....	.....	8	.....	.....	.....	.....	.....	Lagorio.
Moscow	29.87	758.8	30.45	773.4	35.2	1.8	85	S	9	4	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Lugan	29.94	760.4	30.14	765.6	49.6	9.8	66	ENE	4	2	.....	.....	2	.....	.....	.....	.....	.....	Meteorological Obs.
Archangel	30.27	768.9	30.25	769.4	31.6	— 0.2	96	S	9	4	.....	.....	10	.....	.....	.....	.....	.....	Ogorodnikof.
Tiflis	28.69	728.6	30.10	764.5	59.2	15.1	63	E	9	4	.....	.....	3	.....	.....	.....	.....	.....	Physical Observatory.
Astrakhan	30.30	769.7	30.22	767.6	50.9	10.5	33	E	2	1	.....	.....	9	.....	.....	.....	.....	.....	Sebastianof.
Kasan	30.08	764.0	30.36	771.2	30.2	— 1.0	84	Calm	0	0	.....	.....	10	.....	.....	.....	.....	.....	Physical Cabinet.
Orenburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Tschernischef.
Ekaterinburg	29.19	741.3	30.18	760.6	29.3	— 1.5	88	W	7	3	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Nukuss	29.97	761.2	30.21	767.3	45.7	7.6	67	ENE	4	2	.....	.....	8	.....	.....	.....	.....	.....	
Kasaly	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Bobrof.
Tashkend	28.63	727.3	30.39	771.9	46.2	7.9	82	Calm	0	0	.....	.....	10	.....	.....	.....	.....	.....	Michelson.
Barnaul	29.42	747.3	29.97	761.1	32.9	0.5	100	SW	4	2	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Yeniseisk	29.54	750.2	29.87	758.6	30.9	— 0.6	92	S	7	3	.....	.....	10	.....	.....	.....	.....	Snowing	Marks.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Usolzef.
Oorga	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Mossin.
Peking, (China)	29.97	761.2	30.11	764.8	35.8	2.1	48	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Physical Observatory.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nikolaievsk, on the Amoor	.....	.....	.....	.....	13.1	—10.6	93	W	9	4	.....	.....	10n	.....	.....	.....	.....	Snowing	

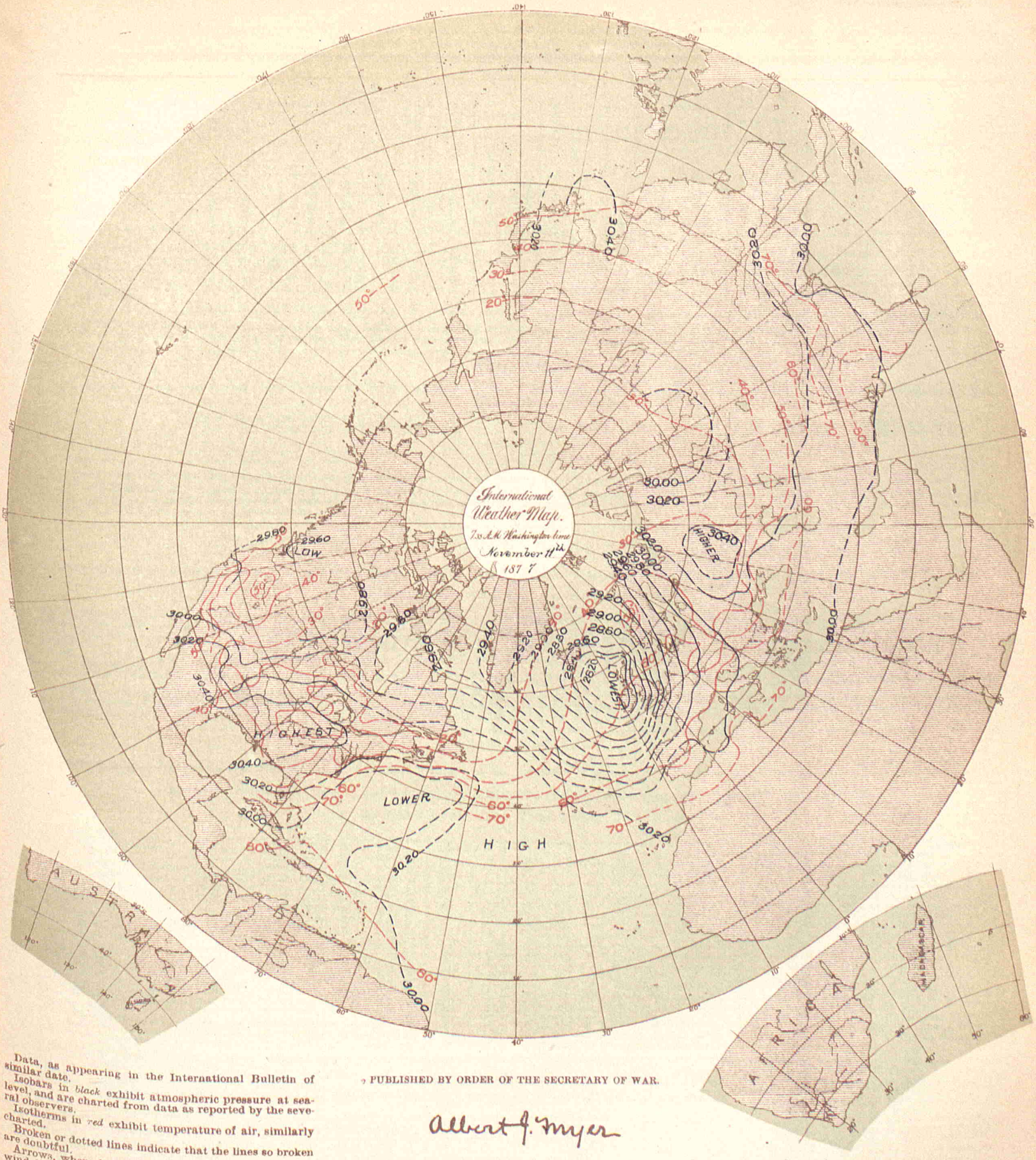
NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Ekaterinburg, 306. 4? m., or 1,005.2? ft.; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,231.0? m., or 4,202.6? ft.

SPANISH SERIES.

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

Barcelona, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Rave, Director.
Bilbao, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Manuel de Naveran
Burgos, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Domingo Martin y Perez.
Madrid, Royal Observatory	27.79	705.9	30.05	763.2	52.0	11.1	73	SW	11.2	5.00	.....	3	6	SW	.....	0.260	6.6	Almost cov'd	The Staff.
Murcia, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Olayo Diaz, Director.
Santiago, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	30.08	764.0	30.15	765.7	70.1	21.2	56	N	13.0	5.8	.....	.....	8k;n	.....	S	0.039	1.0	Cloudy	Benito Vines, S. J.
San Fernando, Naval Obs'y.	30.05	763.3	30.15	765.8	61.5	16.4	76	NW	1.6	0.7	.....	0	4	.....	NW	0.009	0.2	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.	.....	.....	29.88	758.9	79.9	26.6	86	SE	0	0	.....	0	3k	.....	S	0	0	Clear	Leonardo de Tejeda, Chief of Engineers.

NOTE.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.



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

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

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

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

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

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

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

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

SWEDISH SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.75	755.7	29.79	756.7	39.9	4.4	.....	S	.....	.....	4	.....	5	.....	.....	0.118	3.0	....	
Umea	29.66	753.4	29.71	754.7	39.9	4.4	100	SSW	.....	.....	4	.....	10	.....	.....	0.201	5.1	.....	
Hernosand	29.57	751.0	29.62	752.3	41 4	5.2	98	S	.....	.....	2	.....	10	.....	.....	0.161	4.1	Raining	
Stockholm	29.52	749.9	29.70	754.4	45.0	7.2	91	S	.....	.....	2	.....	10	.....	.....	0.055	1.4	Foggy	
Wisby	29.72	754.8	29.78	756.3	46.0	7.8	98	S	.....	.....	4	.....	10	.....	.....	0.287	7.3	Raining	
Sub-Series.																			
Upsala	29.60	751.7	29.67	753.6	45.1	7.3	98	SSE	16.1	7.2	.....	.....	10	.....	.....	0.062	1.58	Raining	Dr. Hildebrandsson.

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

SWISS SERIES.

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

Geneva	28.45	722.6	29.89	759.2	49.8	9.9	86	N	.....	.....	1	.....	7	.....	.....	0.677	17.2	Cloudy	The Observatory.
Zurich	28.21	716.5	29.86	758.5	49.5	9.7	86	SE	.....	.....	1	.....	9	.....	.....	0.079	2.0	Cloudy	The Observatory.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—For Geneva the corresponding departures from the normal values are: Barometer, —3.7 mm; Thermometer, +2.4 cent.; Relative Humidity, +10 per cent.

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

TURKISH SERIES.

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

Constantinople	.....	.....	30.15	765.7	55.6	13.1	72	SW	9	4.0	.....	.....	6	.....	SW	0	0	....	The Observatory.
Fao, (Persian Gulf)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salonica	.....	.....	30.10	766.8	64.4	18	.....	SE	.....	.....	1	.....	0	.....	.....	.....	.....	.....	B. Stefanides.
Valona	.....	.....	30.17	766.4	62.2	16.8	.....	W	.....	.....	1	.....	0	.....	.....	0	0	Clear	A. Bertrand.
Varna	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Imperial Observatory.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.92	760.0	30.04	762.9	69.3	20.7	68	NE	.....	.....	1	.....	10cs;n	.....	NE	0.15	3.8	Overcast	Prof. C. V. A. Van Dyck

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

CANADIAN SERIES.

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

Bathurst, N. B	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	....	Hon. J. Ferguson.
Brockville, Ontario	.....	.....	30.34	770.6	26	— 3.3	.....	Calm	0	0	.....	0	5s	.....	W	0	0	Fair	W. R. Bigg.
*Chatham, N. B	.....	.....	30.34	770.6	27	— 2.8	82	NW	4	1.8	.....	.....	10s	.....	Calm	0	0	Cloudy	G. A. Blair.
Charlottetown, P. E. Island	.....	.....	30.33	770.4	31	— 0.6	87	E	4	1.8	.....	.....	10ks	.....	Calm	0	0	Cloudy	H. J. Cundall, C. E.
Cornwall, Ontario	30.11	764.8	30.32	770.1	26.5	— 3.1	90	SW	.....	.....	1	.....	10s	.....	.....	0	0	Cloudy	James Smith, M. A.
Dalhousie, N. B	30.22	767.6	.....	.....	15.8	— 9.0	96	W	.....	.....	1	.....	.....	.....	.....	0	0	Bright	H. A. Johnson.
Esquimault, B. C	29.60	749.3	29.55	750.6	45.8	7.7	96	N	.....	.....	.....	4cs	0	.....	.....	0.01	0.3	Cloudy	W. H. Bevis.
*Father Point, Quebec	.....	.....	30.29	769.4	20	— 6.7	85	S	10	4.5	.....	0	2s	.....	Calm	0	0	Clear	J. McWilliams.
Fredericton, N. B	30.30	769.6	30.37	771.4	27.0	— 2.8	80	E	1.0	0.4	.....	.....	s	.....	.....	0	0	Cloudy	Prof. Harrison.
*Fort Garry, Manitoba	.....	.....	29.96	761.0	26	— 3.3	94	S	4	1.8	.....	0	2s	.....	S	0	0	Fair	James Stewart.
Goderich, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	H. J. Strang, M. A.
Granton, Ontario	29.16	740.7	30.32	770.1	27.2	— 2.7	95	W	.....	.....	1	0	0	.....	.....	0	0	Clear	James Grant.
*Halifax, N. S	30.11	764.8	30.26	768.6	30	— 1.1	98	N	6	2.7	.....	.....	10ks	.....	.....	0	0	Cloudy	F. Allison, M. A.
Hamilton, Ontario	29.92	760.0	30.32	770.1	20.7	— 6.3	97	SW	.....	.....	2	8cs	.....	SW	.....	0	0	Cloudy	Geo. Dickson, M. A
Heart's Content, N. F	30.35	770.9	30.38	771.6	25	— 3.9	74	N	.....	.....	2	0	1ks	.....	.....	0.01	0.3	Fine	E. Weedon.
*Kingston, Ontario	29.98	761.5	30.34	770.6	27	— 2.8	89	N	1	0.4	.....	5k	0	W	.....	0	0	Fair	S. Woods, M. A.
Little Glace Bay, N. S	30.27	768.8	30.31	769.9	34.0	1.1	90	NE	6	2.7	.....	.....	10n	.....	.....	0	0	Overcast	C. H. Rigby.
*Montreal, Quebec	30.11	764.8	30.32	770.1	25	— 3.9	90	W	3	1.3	.....	.....	10n	.....	.....	0	0	Cloudy	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.53	760.0	30.26	768.6	29	— 1.7	89	E	5	2.2	.....	5k	5ks	W	W	0	0	Cloudy	Rev. R. Mosley.
Peterboro, Ontario	29.57	751.1	30.39	771.9	20.4	— 6.4	44	Calm	.....	.....	0	0	0	.....	.....	0	0	Bright	J. F. Jeffers, B. A.
Port Dover, Ontario	29.63	752.6	30.36	771.1	27	— 2.8	88	W	7	3.1	.....	0	0	.....	.....	0	0	Clear	H. Morgan.
Port Hastings, N. S	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Peter Grant.
Port Stanley, Ontario	29.67	753.6	30.36	771.1	29	— 1.7	86	W	5	2.2	.....	0	0	.....	.....	0	0	Clear	M. Payne.
*Quebec, Quebec	29.98	761.5	30.32	770.1	24	— 4.4	87	Calm	0	0	.....	.....	10n	.....	Calm	0	0	Cloudy	Capt. Ashe, R. N
*Rockliffe, Ontario	29.79	756.7	30.29	769.4	19	— 7.2	97	Calm	0	0	.....	5cs	0	NW	.....	0	0	Fair	W. H. McIntyre.
St. John, N. B	30.16	766.1	30.33	770.4	27	— 2.8	88	N	4	1.8	.....	.....	10ks	.....	.....	0	0	Overcast	G. Murdock, C. E.
*Saugeen, Ontario	29.52	749.8	30.25	768.3	37	2.8	81	NW	5	2.2	.....	10k	0	W	.....	0	0	Cloudy	K. Stewart.
Stayner, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. J. Cole.
Stratford, Ontario	28.96	735.6	30.32	770 1	25.6	— 3.6	91	SW	7.0	3.1	.....	.....	10s	.....	.....	0	0	Cloudy	C. J. MacGregor, M. A.
*Sydney, C. B	30.28	769.1	30.31	769.9	31	— 0.6	79	N	2	0.9	.....	.....	10s	.....	.....	0	0	Cloudy	T. C. Hill.
*Toronto, Ontario	29.92	760.0	30.33	770.4	24	— 4.4	84	W	5	2.2	.....	2ck	0	Calm	.....	0	0	Clear	Magnetic Observatory.
Windsor, N S	30.20	767.1	30.29	769.4	30.5	— 0.8	95	E	8	3.6	.....	10k	0	.....	.....	0	0	Fair	Prof. John E. Oram.
Woodstock, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Montgomery.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	27.5	— 2.6	82	NW	.....	.....	.....	Sm'e	Sm'e	.....	.....	Inap.	Inap.	Fair	John Delany
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

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

UNITED STATES SERIES.

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

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

STATIONS.	BAROMETER. Corrected for instrum'tal error and temperature. Inches.	BAROMETER. Corrected for instrum'tal error and temperature. Millimeters.	BAROMETER. Reduced to sea-level. Inches.	BAROMETER. Reduced to sea-level. Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Upper. From—	CLOUDS. Direction. Lower. From—	RAIN FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	WEATHER.	OBSERVER.
Albany, New York	30.05	763.3	30.29	769.4	32	0.0	79	NW	5	2.2	.....	.....	10s	.....	Calm	Inap	Inap.	Cloudy	
Alpena, Michigan	29.66	750.8	30.25	768.3	27	— 2.8	77	SW	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Atlantic City, New Jersey	30.17	766.3	30.19	766.8	39	3.9	91	N	18	8.0	.....	.....	10n	.....	N	0.03	0.8	Light rain	
Augusta, Georgia	30.16	766.1	30.35	770.9	39	3.9	86	N	5	2.2	.....	0	Sm'e	.....	N	0	0	Smoky	
Baltimore, Maryland	30.25	768 3	30.30	769.6	38	3.3	71	NW	8	3.6	.....	.....	10s	.....	NW	0.05	1.3	Cloudy	
Barnegat, New Jersey	30.16	766.1	30.18	766.6	40	4.4	87	N	31	13.9	.....	.....	10n	.....	N	0.07	1.8	Light rain	
Bismarck, Dakota	28 10	713.7	29.82	757.4	29	— 1.7	78	E	4	1.8	.....	0	1s	.....	Calm	0	0	Clear	
Boise City, Idaho	26.89	683.0	29.40	746.7	54	12.2	43	S	12	5.4	.....	.....	10s	.....	S	0	0	Cloudy	
Boston, Massachusetts	30.08	764.0	30.24	768.1	32.5	0.3	65	N	14	6.3	.....	2cs	4s	SW	NE	0.04	1.0	Fair	
Brackettville, Texas	29.17	740.9	30.27	768.8	40	4.4	56	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Breckenridge, Minnesota	28.98	736.1	30.04	763.0	22	— 5.6	86	SE	9	4.0	.....	0	0	.....	.....	0	0	Clear	
Brownsville, Texas	30.34	770.6	30.41	772.4	40	4.4	91	N	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Buffalo, New York	29.59	751.6	30.33	770.4	31.0	— 0.6	78	W	2	0.9	.....	1k	0	W	.....	0	0	Clear	
Burlington, Vermont	30.06	763.5	30.34	770.6	31	— 0.6	79	N	4	1.8	.....	.....	10s	.....	Calm	0	0	Cloudy	
Cairo, Illinois	30.09	754.3	30.51	774.9	29	— 1.7	89	Calm	0	0	.....	.....	Fog	.....	Calm	0	0	Foggy	
Camp Grant, Arizona	26.27	641.8	30.07	763.8	48	8.9	21	NW	.....	.....	1	0	0	.....	.....	0	0	Clear	
Camp Verde, Arizona	26.83	681.5	30.32	770.1	35	1.7	61	W	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Campo, California	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Cape Hatteras, N. Carolina	30.02	762.5	30.02	762.5	46	7.8	92	N	25	11.2	.....	.....	10s	.....	NE	Inap.	Inap.	Cloudy	
Cape Henry, Virginia	30.12	765.0	30.15	765.8	47	8.3	85	NW	38	17.0	.....	.....	10s	.....	NE	Inap.	Inap.	Cloudy	
Cape Lookout, N. Carolina	30.16	766.1	30.18	766.6	44	6.7	75	N	23	10.3	.....	.....	10s	.....	NE	0	0	Cloudy	
Cape May, New Jersey	30.16	766.1	30.18	766.6	40	4.4	73	N	28	12.5	.....	.....	10s	.....	NW	Inap.	Inap.	Cloudy	
Charleston, South Carolina	30.21	767.3	30.28	769.1	44	6.7	67	N	7	3.1	.....	0	0	.....	.....	0	0	Clear	
Cheyenne, Wyoming	24.01	609.8	29.95	760.7	36	2.2	45	W	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Chicago, Illinois	29.92	752.3	30.36	771.1	32	0.0	79	SW	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Cincinnati, Ohio	29.76	755.9	30.46	773.7	28	— 2.2	88	SE	1	0.4	.....	0	Fog	.....	SE	0	0	Clear	
Cleveland, Ohio	29.67	753.6	30.45	773.4	27	— 2.8	77	S	9	4.0	.....	0	0	.....	.....	0	0	Clear	
Concho, Texas	28.33	719.6	30.11	764.8	33	0.6	69	S	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Corsicana, Texas	29.94	760.5	30.44	773.2	32	0.0	79	Calm	0	0	.....	Haze	0	Calm	.....	0	0	Clear	
Davenport, Iowa	29.69	754.1	30.37	771.4	30	— 1.1	89	S	1	0.4	.....	1c	0	Calm	.....	0	0	Clear	
Denison, Texas	29.59	751.6	30.45	773.4	31	— 0.6	78	S	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Denver, Colorado	24.76	628.9	29.98	761.5	32	0.0	79	S	7	3.1	.....	0	2s	.....	Calm	0	0	Clear	
Detroit, Michigan	29.63	752.6	30.34	770.6	29	— 1.7	78	SW	11	4.9	.....	0	0	.....	.....	0	0	Clear	
Dodge City, Kansas	27.43	696.7	29.79	756.7	35	1.7	61	S	10	4.5	.....	2c	0	SW	.....	0	0	Clear	
Dubuque, Iowa	29.54	750.3	30.29	769.4	26	— 3.3	88	SW	5	2.2	.....	2cs	0	Calm	.....	0	0	Fair	
Duluth, Minnesota	29.44	747.8	30.15	765.8	29	— 1.7	78	NW	2	0.9	.....	.....	10ks	.....	NW	0	0	Cloudy	
Eagle Pass, Texas	29.56	750.8	30.36	771.1	34	1.1	70	Calm	0	0	.....	2cs	0	Calm	.....	0	0	Fair	
Eastport, Maine	30.21	767.3	30.28	769.1	31	— 0.6	79	NE	18	8.0	.....	.....	10s	.....	.....	0	0	Cloudy	
Erie, Pennsylvania	29.59	751.6	30.34	770.6	35	1.7	80	SW	4	1.8	.....	2c	5k	Calm	W	0	0	Cloudy	
Escanaba, Michigan	29.54	750.3	30.24	768.1	25	— 3.9	75	W	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Florence, Arizona	28.39	721.1	29.99	761.7	60	15.6	19	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Fort Bayard, New Mexico	24.13	612.9	30.13	765.3	39	3.9	47	NE	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Fort Craig, New Mexico	25.68	652.3	.....	.....	26	— 3.3	75	NW	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Fort Gibson, Indian Ter	29.81	757.2	30.38	771.6	31	— 0.6	79	S	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Fort Griffin, Texas	29.02	737.1	30.36	771.1	34	1.1	79	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	29.06	738.1	30.25	768.3	29	— 1.7	78	S	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Galveston, Texas	30.40	772.1	30.45	773.4	49	9.4	64	NE	8	3.6	.....	8ck	0	SE	.....	0	0	Cloudy	
Grand Haven, Michigan	29.63	752.6	30.31	769.9	37	2.8	80	W	15	6.7	.....	0	5s	.....	W	0	0	Fair	
Indianapolis, Indiana	29.60	751.8	30.44	773.2	27	— 2.8	88	NW	2	0.9	.....	1cs	Fog	Calm	.....	0	0	Clear	
Indianola, Texas	30.40	772.1	30.43	772.9	49	9.4	64	NE	15	6.7	.....	0	2s	.....	Calm	0	0	Clear	
Jacksboro, Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Jacksonville, Florida	30.26	768.6	30.29	769.4	43	6.1	75	NW	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Keokuk, Iowa	29.66	753.4	30.32	770.1	35	1.7	61	S	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Key West, Florida	30.13	765.3	30.17	766.3	63.5	17.5	67	N	21	9.4	.....	8k	0	NW	.....	0.01	0.3	Cloudy	
Kittyhawk, North Carolina	30.11	764.8	30.14	765.5	47	8.3	100	N	34	15.2	.....	.....	10n	.....	N	0.10	2.5	Light rain	
Knoxville, Tennessee	29.36	745.7	30.44	773.2	32	0.0	60	N	8	3.6	.....	0	0	.....	.....	0	0	Clear	
La Crosse, Wisconsin	29.47	748.5	30.25	768.3	29	— 1.7	78	S	4	1.8	.....	0	0	.....	.....	0	0	Clear	
La Mesilla, New Mexico	26.20	665.5	30.35	770.9	33	0.6	51	N	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Laredo, Texas	.....	.....	.....	.....	38	3.3	81	Calm	0	0	.....	5c	0	.....	.....	0	0	Fair	
Leavenworth, Kansas	29.36	745.7	30.25	768.3	34	1.1	8	S	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Los Angeles, California	29.58	751.3	29.92	760.0	52	11.1	43	N	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Louisville, Kentucky	29.86	758.4	30.47	773.9	32	0.0	89	Calm	0	0	.....	.....	Fog	.....	Calm	0	0	Dense fog	
Lynchburg, Virginia	29.58	751.3	30.27	768.8	42	5.6	66	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Maricopa Wells, Arizona	.....	.....	.....	.....	40	4.4	31	E	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Marquette, Michigan	29.41	747.0	30.14	765.5	30	— 1.1	59	W	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Mason, Texas	28.66	728.0	30.57	776.5	25	— 3.9	87	Calm	0	0	.....	2cs	0	Calm	.....	0	0	Clear	
Memphis, Tennessee	30.16	766.1	30.50	774.7	30	— 1.1	89	Calm	0	0	.....	0	Sm'e	.....	Calm	0	0	Clear	
Milwaukee, Wisconsin	29.64	752.8	30.38	771.6	26	— 3.3	76	SW	9	4.0	.....	5c	0	NW	.....	0	0	Fair	
Mobile, Alabama	30.30	771.9	30.44	773.2	34	1.1	90	N	7	3.1	.....	0	0	.....	.....	0	0	Clear	
Montgomery, Alabama	30.17	766.3	30.42	772.7	35	1.7	75	N	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Morgantown, West Virginia	29.31	744.5	30.43	772.9	33	0.6	69	Calm	0	0	.....	.....	10s	.....	NW	0	0	Cloudy	
Mt. Washington, N. H.	23.76	603.5	30.12	765.0	19	— 7.2	84	W	15	6.7	.....	0	Fog	.....	W	0	0	Foggy	
Nashville, Tennessee	29.92	760 0	30.50	774.7	27	— 2.8	88	NW	1	0.4	.....	0	Haze	.....	Calm	0	0	Clear	
New Haven, Connecticut	30.10	764.5	30.22	767.6	36	2.2	80	N	16	7.2	.....	.....	10s	.....	N	0.03	0.8	Cloudy	
New London, Connecticut	30.14	765.5	30.20	767.1	37	2.8	81	NE	11	4.9	.....	0	10s	.....	NE	Inap.	Inap.	Cloudy	
New Orleans, Louisiana	30.38	771.6	30.45	773.4	42	5.6	58	N	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Newport, Rhode Island	30.13	765.3	30.18	766.6	36	2.2	90	N	12	5.4	.....	.....	10s	.....	NE	Inap.	Inap.	Threatening	
New York, New York	30.05	763.3	30.24	768.1	38	3.3	71	N	14	6.3	.....	0	8ks	.....	SW	0.39	9.9	Fair	
Norfolk, Virginia	30.16	766.1	30.22	767.6	38	3.3	100	N	16	7.2	.....	.....	10n	.....	NW	0.14	3.6	Light rain	
North Platte, Nebraska	27.65	687.1	29.72	754.9	26	— 3.3	88	W	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Olympia, Washington Ter.	29.59	751.6	29.63	752.6	47	8.3	92	SW	5	2.2	.....	.....	10n	.....	Calm	0.95	24.1	Light rain	
Omaha, Nebraska	28.93	736.3	30.12	765.0	31	— 0.6	80	S	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Oswego, New York	30.03	762.7	30.36	771.1	34	1.1	69	SW	6	2.7	.....	.....	10s	.....	Calm	0	0	Cloudy	
Pembina, Dakota	29.14	740.1	30.00	762.0	26	— 3.3	88	S	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Philadelphia, Pennsylvania	30.21	767.3	30.26	768.6	39	3.9	72	N	15	6.7	.....	.....	10s	.....	N	0.03	0.8	Cloudy	
Phœnix, Arizona	.....	.....	.....	.....	46	7.8	33	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Pike's Peak, Colorado	17.86	453.6	30.07	763.8	17	— 8.3	35	W	18	8.0	.....	8cs	0	SW	.....	0	0	Cloudy	
Pioche, Nevada	24.00	609.6	29.77	756.1	42	5.6	27	S	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Pittsburg, Pennsylvania	29.55	750.6	30.42	772.7	28	— 2.2	88	NW	3	1.3	.....	10c	0	N	.....	0	0	Cloudy	
Port Huron, Michigan	29.60	751.8	30.31	769.9	28	— 2.2	88	SW	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Portland, Maine	30.22	767.6	30.28	769.1	31	— 0.6	79	N	12	5.4	.....	5k	Haze	SW	.....	0	0	Fair	
Portland, Oregon	29.67	753.6	29.77	756.1	49	9.4	93	S	1	0.4	.....	0	5ks	.....	S	0.55	14.2	Fair	
Prescott, Arizona	24.80	629.9	30.16	766.1	29	— 1.7	56	S	.....	.....	.....	5cs	0	Calm	.....	0	0	Fair	
Punta Rassa, Florida	30.21	767.3	30.23	767.8	48	8.9	77	N	18	8.0	.....	0	0	.....	.....	0	0	Clear	
Red Bluff, California	29.45	748.0	29.80	756.9	52	11.1	93	S	14	6.3	.....	.....	10n	.....	Calm	1.02	25.9	Light rain	
Rochester, New York	29.70	754 4	30.36	771.1	26	— 3.3	88	SW	6	2.7	.....	0	0	.....	.....	Inap.	Inap.	Clear	
Roseburg, Oregon	29.22	742.2	29.79	756.7	45	7.2	96	Calm	0	0	.....	.....	10n	.....	Calm	0.10	2.5	Light rain	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Sacramento, California	29.73	755.1	29.82	757.4	53	11.7	93	SE	4	1.8	.....	.....	10n	.....	Calm	0.65	16.5	Light rain	
St. Louis, Missouri	29.92	760.0	30.54	775.7	32	0.0	79	S	4	1.8	.....	0	0	.....	.....	0	0	Clear	
St. Marks, Florida	30.33	770.4	30.35	770.9	38	3.3	80	N	8	3.6	.....	0	0	.....	.....	0	0	Clear	
St. Paul, Minnesota	29.24	742.7	30.10	764.5	32	0.0	79	NE	8	3.6	.....	5c	5s	NW	Calm	0	0	Cloudy	
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salt Lake City, Utah	25.59	650.0	29.92	760.0	48	8.9	49	E	8	3.6	.....	0	5s	.....	Calm	0	0	Fair	
San Antonio, Texas	29.68	753.9	30.31	769.9	34	1.1	89	NE	3	1.3	.....	0	0	.....	.....	0	0	Clear	
San Diego, California	29.88	758.9	29.96	761.0	53	11.7	42	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Sandusky, Ohio	29.69	754.1	30.41	772.4	29	—1.7	78	SW	10	4.5	.....	1c	0	Calm	.....	0	0	Clear	
Sandy Hook, New Jersey	30.19	766.8	30.22	767.6	39	3.9	81	N	27	12.1	.....	.....	10ks	.....	NE	0.14	3.6	Cloudy	
San Francisco, California	29.74	755.4	29.81	757.2	56	13.3	90	W	8	3.6	.....	Haze	4s	.....	SW	0.56	14.2	Fair	
Santa Fé, New Mexico	23.36	593.3	29.90	759.4	28.5	—1.9	53	NE	5	2.2	.....	0	2s	.....	Calm	0	0	Fair	
Savannah, Georgia	30.19	766.8	30.29	769.4	43	6.1	83	N	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Shreveport, Louisiana	30.26	768.6	30.50	774.7	36	2.2	100	Calm	0	0	.....	.....	Fog	.....	.....	0	0	Foggy	
Smithville, North Carolina	30.20	767.1	30.24	768.1	44	6.7	68	N	10	4.5	.....	0	8s	.....	N	0	0	Cloudy	
Springfield, Massachusetts	30.06	763.5	30.19	766.8	37	2.8	62	N	8	3.6	.....	.....	10s	.....	N	0	0	Cloudy	
Stanwix, Arizona	.....	.....	.....	.....	30	2.2	45	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Stockton, Texas	27.12	688.8	30.12	765.0	37	2.8	64	S	8	3.6	.....	0	6s	.....	S	0	0	Fair	
Thatcher's Island, Mass	30.19	766.8	30.25	768.3	37	2.8	80	NE	28	12.5	.....	.....	10s	.....	NE	0.04	1.0	Cloudy	
Toledo, Ohio	29.67	753.6	30.39	771.9	30	—1.1	78	W	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Tucson, Arizona	27.56	700.0	30.11	764.8	51	10.6	33	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Tybee Island, Georgia	30.24	768.1	30.27	768.8	45	7.2	85	N	16	7.2	.....	0	0	.....	.....	0	0	Clear	
Umatilla, Oregon	29.40	746.7	.....	.....	44	6.7	92	SE	6	2.7	.....	8cs	0	Calm	.....	0	0	Cloudy	
Vicksburg, Mississippi	30.24	768.1	30.52	775.2	32	0.0	89	NE	1	0.4	.....	.....	Fog	.....	Calm	0	0	Foggy	
Virginia City, Montana	24.11	612.4	29.59	751 6	34	1.1	61	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Visalia, California	29.50	749.3	29.87	758.7	49	9.4	71	Calm	0	0	.....	Haze	.....	Calm	.....	0	0	Hazy	
Washington, D. C	30.20	767.1	30.31	769.9	37	2.8	71	N	12	5.4	.....	.....	10s	.....	N	Inap.	Inap.	Cloudy	
Wickenburg, Arizona	.....	.....	.....	.....	30	—1.1	26	S	.....	.....	.....	0	0	.....	.....	.....	.....	Clear	
Wilmington, N. Carolina	30.14	765.5	30.23	767.8	43	6.1	67	NW	8	3.6	.....	.....	10s	.....	N	0	0	Cloudy	
Winnemucca, Nevada	25.41	645.4	29.77	756.1	36	2.2	62	NE	7	1.3	.....	0	0	.....	.....	0	0	Clear	
Wood's Holl, Mass	30.11	764.8	30.17	766.3	43	6.1	75	NE	8	3.6	.....	.....	10s	.....	NE	0	0	Cloudy	
Yankton, Dakota	28.71	729.2	30.06	763.5	26	—2.2	82	SE	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Yuma, Arizona	29.81	757.2	29.98	761.5	45	7.2	24	E	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Sub-Series.																			
York Factory, B. A	29.85	758.2	29.90	759.4	21.0	—6.1	93	NW	7	3.1	.....	.....	10n	.....	.....	0.09	2.3	Snowing	J. Fortescue, W. Wood.
Havana, Cuba, W. I	30.09	764.3	30.11	764.8	70	21.1	52	NW	14.4	6.4	.....	4k	4ks	Calm	N	0.06	1.5	Clearing	Chas. Hasselbrink.
Kingston, Jamaica, W. I	30.08	764.0	30.09	764.3	79	26.1	82	Calm	0	0	.....	5c	2s	Calm	SE	0	0	.....	James Gall.
Nayassa, W. I	29.80	756.9	29.88	758 9	82	27.8	.....	NE	10	4.5	.....	.....	.....	.....	.....	0	0	Clear	F. M Everett.
St. Thomas, W. I	.....	.....	.....	.....	82	27.8	78	SE	3	1.3	.....	2c	4s	E	.....	0.02	0.5	Cloudy	G. O. Gellich.
Paramaribo, D. Guiana, S. A	.....	.....	29.99	761.7	85	29.4	72	E	.....	.....	3	0	8k	.....	.....	0	0	Clear	C. J. Hering.
Batavia, Dutch Guiana, S. A	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Dr. H. Groot.
Medellin, Colombia, S. A	25.19	639.8	.....	.....	66.5	19.2	85	Calm	.....	.....	0	3ck	6s;ks	.....	.....	0.20	5.1	Cloudy	Thomas Herran.
Honolulu, Oahu, H. I	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Daniel Smith.
Makawao, Maui, H. I	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters: Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.: Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.: Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,627.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.: Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.93 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.: Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

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

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

STATIONS AND VESSELS.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard Mare Island, Cal.	29.78	756.4	56	13.3	56	13.3	94	WNW	1	0.4	....	.....	10	.....	Calm	0.26	7.1	.....	.....	Raining.....	
Navy Yard, Pensacola, Fla.	30.42	772.7	.....	.....	40	4.4	83	NW	9	4.0	....	.....	4	.....	.....	0	0	.....	.....	D. clouds....	
Navy Yard, Portsmouth, N.H.	30.28	769.1	57	13.9	28	— 2.2	??	NE	1	0.4	.....	.....	.....	.....	.....	0	0	.....	.....	Clear	
Naval Hospital, Yokohama, Japan.....	29.99	761.7	57.5	14.2	50	10.0	93	Calm	.....	.....	0	.....	0	.....	.....	0.10	2.5	.....	.....	Clear	
Adams. S. 50° 43′ 12″ W. 66° 10′ 30″	29.71	754 6	69	20.6	55	12.8	93	NNW	.....	.....	2	.....	10	.....	N	Light	Light	Light	N	Misty.....	
Alert. Yokohama, Japan.....	30.17†	766 3†	50	13.3	56	13.3	100	NNE	.....	.....	1	.....	0	.....	.....	.....	.....	Smooth	.....	Hazy.....	
Alliance, Constantinople, Turkey.	30.26	768 6	68	20.0	58	14.4	70	SSW	.....	.....	0–1	.....	6	.....	WNW	.....	.....	.....	.....	Pleasant.....	
Ashuelot. Tientsin, China.....	30.13	765.3	54	12.2	43	6.1	43	Calm	.....	.....	0	.....	0	.....	.....	.....	.....	Smooth	.....	Blue sky.....	
Canonicus, New Orleans, La.....	30.29	771.9	39	3.9	44	6.7	84	NNE	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	Clear.....	
Colorado, New York, N. Y.....	30.33	770.4	72	22.2	39	3.9	82	N	20	8.9	.....	.....	8	.....	S W & N	0.38	9.7	.....	.....	Cloudy.....	
Despatch, Constantinople, Turkey.	30.28	769.1	68	20.0	57	13.9	75	WSW	.....	.	2	.....	5	.....	S&W	.....	.....	.....	.....	Cloudy.....	
Essex. Cape Palmas, Guinea....	29.92	760.0	79	26.1	82	27.8	??	W	.....	.....	1	.....	.....	.....	E	.....	.....	Long	SW	Raining.....	
Franklin, Norfolk, Va.....	30.27	768.8	42	5.6	41	5.0	82	NNW	17	7.6	.....	.....	1	.....	NNW	0.05	1.3	.....	.....	Overcast.....	
Gettysburg, Malta	30.01‡	762.2‡	.....	.....	70	21.1	95	Calm	.....	.....	0	.....	1	.....	Calm	0	0	.....	.....	D. clouds.....	
Guard, N. 36° 41′, W. 50° 57′.....	30.35	770.9	72	22.2	74	23.3	81	S	.....	....	3	.....	3	.....	S	.....	.....	Smooth	S	D. clouds.....	
Marion, Smyrna, Turkey.....	30.15	765.8	65	18.3	65	18.3	94	N	.....	.....	1	.....	7	.....	N	0	0	Smooth	W	D. clouds. ...	
Michigan, Erie, Pa.....	29.80	756.9	54	12.2	34	1.1	71	SW	.....	.....	1	.....	2	.....	W	.....	.....	.....	.....	Fair	
Monocacy, Yokohama, Japan.....	30.01	762.2	65	18.3	54	12.2	87	NW	.....	.....	0–1	.....	1	.....	.....	.....	.....	.....	.....	D. clouds....	
Monongahela, N. 37° 51′, E. 4° 01′.....	30.11	764.8	69	20.6	69	20.6	75	WSW	.....	.....	4	.....	ks	.....	.....	.....	.....	Smooth	.....	D. clouds.....	
New Hampshire, Port Royal, S.C.....	30.38	771.6	.. ..	.....	45	7.2	92	NNW	19	8.5	.....	.....	1	.....	N	0	0	.....	.....	D. clouds....	
Omaha, Callao, Peru.....	30.05	763.3	73	22.8	70	21.1	90	Calm	0	0	.....	.....	10	.....	SE	0	0	Smooth	.....	Dull	
Onward, Callao, Peru.....	30.02	762.5	72	22 2	69	20.6	82	SSE	.....	.....	1	.....	10	.....	.....	.....	.....	Long	W	D. clouds...	
Ossipee. Norfolk, Va.....	30.25	768.3	72	22.2	46	7.8	77	N	.....	.....	4	.....	10	.....	N	.....	.....	.....	.....	Overcast.....	
Palos, Shanghai, China.....	30.37	771.4	56	13.3	50	10.0	86	Calm	.....	.....	0	.....	0	.....	.....	.....	.....	.....	.....	Clear.....	
Pensacola, San Francisco, Cal.....	29.00?	736.6?	.....	.....	58	14.4	94	S&E	.....	.....	2	.....	10	.....	.....	.....	.....	.....	.....	Overcast.....	
Plymouth, Norfolk, Va.....	30.18	766.6	43	6.1	42	5.6	91	NNW	.....	.....	4–6	.....	10	.....	.....	.....	.....	.....	.....	Overcast.....	
Ranger, Shanghai, China.....	30.44	773.2	.....	.....	56	13.3	87	SSE	.....	.....	1	.....	1	.....	Calm	.....	.....	.....	.....	Pleasant.....	
Rio Bravo, Brownsville, Texas.....	30.28	769.1	.....	.....	41	5.0	91	NW	.....	.....	2	.....	3	.....	NW	.....	.....	.....	.....	D. clouds.....	
Santee, Annapolis, Md	30.30	769.6	58	14.4	39	3.9	82	N	....	.....	3	.....	10	.....	N	0.2	5.	.....	.....	Overcast.....	
Saratoga, Hampton Roads, Va.....	30.53†	775.4†	.....	.....	55	12.8	68	NNW	.....	.....	4	.....	10	.....	NW	Light	Light	.....	.....	Fair.....	
St. Louis, League Island, Pa	30.14	765.5	41	5.0	41	5.0	82	N	8	3.6	.....	.....	8	.....	N	0.11	2.8	.....	.....	Cloudy.....	
Swatara, Hampton Roads, Va.....	30.26	768.6	.....	.....	49	9.4	71	N	.....	.....	5	.....	10	.....	.....	.....	.....	.....	.....	Squally.....	
Tennessee, Yokohama, Japan.....	30.11	764.8	63	17.2	53	11 7	86	NNW	3	1.3	.....	.....	0	.....	.....	0.19	4.8	Slight	S&E	Drizzling.....	
Trenton, Villefranche, France.....	29.96	761.0	66	18.9	63	17.2	83	Calm	0	0	.....	.....	10	.....	E	1.20	30 5	.....	.....	D. clouds.....	
Vandalia, Villefranche, France.,...	29.88	758.9	62	16.7	63	17.2	89	N	.....	.....	1	.....	10	.....	E	.....	.....	Long smooth	SSE	D. clouds.....	
Wabash. Boston, Mass.....	30.25	768.3	51	10.6	34	1.1	71	N	8	3.6	.....	.....	9	.....	N	0.03	0.8	.....	.....	D. clouds.....	
Wyoming, Washington, D. C.....	30.44†	773.2†	.....	.....	40	4.4	.....	NNE	.....	.....	3	.....	10	.....	S&W	.....	.....	.....	.....	Squally.....	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. ‡ Barometer corrected for instrumental error and reduced to sea-level.

UNITED STATES MARINE SERIES.

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

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.	Character.	Direction from—		
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—				
S. S. Alaska																			Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama, N. 13° 29′, W. 89° 13′			29.59	751.6	72	22.2	71	N			2		8			Light	Var.	Overcast	Capt. Howard.
S. S. City of Peking, N. 39° 56′, E. 172° 47′			30.39*	771.9*	53	11.7	80	E			1		7		E	Long	NW	D. clouds	Lt. Z. L. Tanner, U.S.N.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio, N. 30° 12′, W. 161° 28′			30.24	768.1	74	23.3		W			3		10			Long	NNW	Overcast	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

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

WHITE STAR LINE MARINE SERIES.

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

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

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

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

S. S. Belgic, N. 33° 18′, E. 146° 30′			30.21†	767.3†				WNW			5		Heavy		W	Moderate	NW	Overcast	Capt. John Metcalf.
S. S. Gaelic																			Capt. W. H. Kidley
S. S. Oceanic, N. 29° 26′, E. 130° 5′			30.11	764.8	62	16.7	88	NE			3		4		Var.	Moderate	SW	D. clouds	Capt. H. Parsell.

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

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

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

S. S. Baltimore																			Capt. H. Andressen
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig																			Capt. K. Undutsch.
S. S. Nürnberg, N. 48° 12′, W. 16° 58′			28.80	731.5	55.0	12.8	87	WNW			7		kn		W	High	WNW	Raining	Capt. A. Jaeger.
S. S. Ohio, N. 48° 0′, W. 28° 59′			29.35	745.5	42.5	5.8	92	WNW			8		ks		W	Heavy	W	Squally	Capt. G. Meyer.

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

UNITED STATES MARINE SERIES.—Continued.

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

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Lo'wr	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second	0—10.	0—10.	0—10.	From—	From—	Character	Direction From—		
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, N. 41° 03′, W. 64° 54′			29.68*	753.9*	53	11.7	93	NE			7		9		NE	Heavy	NNE	Cloudy	Captain Sargent.
S. S. Ohio, St. George's Channel			28.45	722.6	50	10.0	86	S			9		10		S			Stormy	Captain Morrison.
S. S. Pennsylvania, N. 45° 53′, W. 47° 25′			30.30†	769.6†	33	0.6	89	N			4		8		NE	Heavy	N	Cloudy	Captain Harris.

NOTE.—The originals give the barometer as read off; the wind-force by the scale 0 to 12. *Aneroid; correction for elevation applied, instrumental error not known.
†Corrected for temperature and elevation, instrumental error not known.

RED STAR LINE MARINE SERIES.

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

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

ALLAN LINE MARINE SERIES.

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

S. S. Hibernian																			Capt. W. Richardson.
S. S. Scandinavian																			

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, Portsmouth, N. H.			30.28	769.1	37	2.8	90	NNE	12	5.4			58		NW			Clearing	Capt. James Jorgensen.

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

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

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

Albert J. Myer

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

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON NOVEMBER 12, 1877.

7:35 A. M. WASHINGTON mean time.

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

ALGERIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours	.....	.....	29.92	759.9	68.4	20.2	55	Calm	.....	.....	0	.....	2	.....	.....	0	0	Fair	Michel.
Algiers	.....	.....	29.80	756.8	73.4	23.0	49	NW	.....	.....	1	.....	3	.....	.....	0	0	Pretty fair.	Peter.
La Calle	.....	.....	29.86	758.4	73.9	23.3	50	W	.....	.....	1	.....	7	.....	.....	0	0	Very cloudy	Fleury.
Tunis	.....	.....	29.93	760.2	74.8	23.8	41	W	.....	.....	3	.....	6	.....	.....	0	0	Cloudy	Jacques.
Sfax	.....	.....	30.02	762.4	66.2	19.0	.....	W	.....	.....	1	.....	2	.....	.....	0	0	Fair	Husson.
Saida	.....	.....	29.99	761.7	64.4	18.0	44	W	.....	.....	1	.....	2	.....	.....	0	0	Fair	Millot.
Tebessa	.....	.....	30.01	762.3	.....	.....	.....	W	.....	.....	0	.....	0	.....	.....	.....	.....	Clear	Bourgeois.
Geriville	.....	.....	29.93	760.2	59.0	15	58	SW	.....	.....	2	.....	5	.....	.....	0	0	Cloudy	Lemaillot.
Laghouat	.....	.....	30.02	762.5	66.2	19.0	46	W	.....	.....	4	.....	2	.....	.....	0	0	Fair	Guyot.
Biskra	.....	.....	29.96	761.0	71.1	21.4	44	N	.....	.....	2	.....	5	.....	.....	0	0	Cloudy	Kuntz.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

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

AUSTRIAN SERIES.

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

Agram	29.25	742.9	29.79	756.6	63.0	17.2	53	SW	.....	.....	5	.....	6	.....	.....	0	0	.....	Prof. Ivan Stozir
Cracow, I. R. Observatory	29.02	737.2	29.78	756.4	56.8	13.8	67	NE	.....	.....	2	.....	1	.....	.....	0	0	.....	Dr. Wierzbiski.
Eperies	29.04	737.7	29.93	760.1	60.2	10.1	71	S	.....	.....	2	.....	4cs	.....	.....	0	0	.....	Julius Mikolik.
Gratz	28.50	723.8	29.73	755.1	57.4	14.1	60	SW	.....	.....	4	.....	3	.....	.....	0	0	.....	Andreas Rospini.
Hermannstadt	28.54	724.8	29.97	761.1	49.3	9.6	56	ESE	.....	.....	1	.....	0	.....	.....	0	0	.....	Prof. Reissenberger.
Kremsmünster	28.19	716.0	29.54	750.4	41.0	5.0	90	Calm	.....	.....	0	.....	10	.....	.....	0	0	.....	Prof. C. Wagner.
Lemberg	28.97	735.7	29.98	761.4	40.3	4.6	94	S	.....	.....	1	.....	9	.....	.....	0	0	.....	Dr. T. Stanecki.
Pola	29.72	755.0	29.84	757.8	62.2	16.8	77	S	.....	.....	2	.....	10s	.....	.....	0.009	0.23	.....	I.R.Hydrographic Office.
Szathmar	29.54	750.4	30.01	762.2	54.0	12.2	50	SE	.....	.....	2	.....	10	.....	.....	0	0	.....	Johann Tamas, S. J.
Szegedin	29.63	752.6	29.91	759.7	55.0	12.8	73	SE	.....	.....	3	.....	5	.....	.....	0	0	.....	Karl Stancel.
Trieste	29.74	755.3	29.84	757.9	62.2	16.8	89	SW	.....	.....	1	.....	6	.....	.....	0	0	Cloudy	P. Busin.
Vienna	28.93	734.7	29.60	751.9	63.1	17.3	54	S	.....	.....	4	.....	4	.....	.....	0	0	.....	I. R. Central Met. Obs'y.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

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

BELGIAN SERIES.

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

Arlon	27.82	706.6	29.31	744.4	48.7	9.3	87	S	.....	.....	6	.....	10	.....	.....	0.587	14.9	Raining	Prof. M. Passau.
Brussels	29.01	736.8	29.21	741.8	51.4	10.8	75	SSW	.....	.....	4	.....	10	.....	.....	0.006	0.15	.....	Royal Observatory.
Furnes	29.09	738.9	29.11	739.5	52.3	11.3	85	SSW	.....	.....	4	.....	5	.....	.....	0	0	.....	M. E. de Cae.
Maeseyck	29.14	740.1	29.27	743.4	52.7	11.5	90	S	.....	.....	4	.....	10	.....	.....	0.331	8.4	Raining	M. Pierrot.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

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

BRITISH SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	28.53	724.6	28.62	726.9	45.1	7.3	.....	SSE	26	11.6	.....	.....	9	.....	.....	0.090	2.29	Raining.....	W. Boswell.
Ardrossan	28.49	723.6	28.51	724.1	48	8.9	.....	SSW	.....	.....	8	.....	7	.....	.....	.....	.....	D. clouds....	William McNeil.
Armagh, Observatory	.....	.....	28.60	723.9	40.9	4.9	.....	S	28	12.5	.....	.....	10	.....	.....	.....	.....	Squally.....	S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)	.....	.....	28.77	730.7	43.1	6.2	.....	SSE	19	8.5	.....	.....	10	.....	.....	.....	.....	Overcast.....	John Hartnup.
Birr Castle, (Parsonstown)	.....	.....	28.53	725.9	41.5	5.3	.....	S	.....	.....	2	.....	10	.....	.....	.....	.....	Overcast.....	J. Dreyer.
Bradford, Yorkshire	28.42	721.9	28.82	732.0	45.1	7.3	.....	S	.....	.....	4	.....	8	.....	.....	0.16	4.1	D. clouds....	J. McLandsborough.
Bridgetown, (Barbados)	29.87	758.7	29.90	759.4	82.5	28.1	.....	NE	.....	.....	1	.....	3	.....	.....	.....	.....	D. clouds....	Pvt. G. W. Roberts, A.
Cambridge, Observatory	.....	.....	28.98	736.1	51.0	10.6	.....	SSW	.....	.....	2	.....	5	.....	.....	.....	.....	D. clouds....	H. Todd. [H. C.
Cardington	.....	.....	28.98	736.1	48.0	8.9	.....	SW	.....	.....	2	.....	5	.....	.....	.....	.....	D. clouds....	John McLaren.
Chatham, School M. E	28.88	733.5	29.01	736.8	48.7	9.3	.....	SW	.....	.....	2	.....	8	.....	.....	.....	.....	Blue sky.....	Lt.-Col. C.M.Martin, R.E.
Dartmoor	27.46	697.5	28.01	734.3	42.8	6.0	.....	S	.....	.....	4	.....	5	.....	.....	.....	.....	Hail-squalls	Alexander Watt.
Davos Platz (Switzerland)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Francis Redford, M. A.
Donaghadee	28.51	724.1	28.54	724.9	43	6.1	.....	SSW	.....	.....	5	.....	8	.....	.....	.....	.....	D. clouds....	J. Mac Gowan.
Dover	29.03	737.3	29.05	737.9	52	11.1	.....	WSW	.....	.....	5	.....	7	.....	.....	.....	.....	¾ clouded...	J. Costello.
Eccles, (near Manchester)	.....	.....	28.82	732.0	44.7	7.1	.....	S	9.4	4.2	.....	.....	10	.....	.....	.....	.....	Squally.....	Thomas Mackereth.
Falmouth, Observatory	28.60	726.4	28.82	732.0	47.7	8.7	.....	SSW	.....	.....	6	.....	6	.....	.....	.....	.....	Overcast.....	The Staff.
Fort Napier, (Natal)	27.64	702.0	29.84	757.9	68.9	20.5	.....	NE	.....	.....	2	.....	10	.....	.....	.....	.....	Blue sky.....	Pvt. G. Salmon, A.H.C.
Free Town, (Sierra Leone)	.....	.....	30.00	762.0	85	29.4	.....	Calm	.....	.....	0	.....	3	.....	.....	.....	.....	D. clouds....	
Galway, Queen's College	.....	.....	.....	.....	46	7.8	.....	S	.....	.....	6	.....	10	.....	.....	.....	.....	Gloomy.....	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	29.84	757.9	29.89	759.2	64.5	18.1	.....	SW	.....	.....	6	.....	10	.....	.....	.....	.....	Raining.....	Corpl. C. Aitken, A.H.C.
Glasgow, Observatory	28.36	720.3	28.56	725.4	45.0	7.2	.....	SSE	.....	.....	5	.....	8	.....	.....	.....	.....	Gloomy.....	D. G. Maclean.
Great Yarmouth	29.00	736.6	29.01	736.8	49	9.4	.....	SW	.....	.....	4	.....	3	.....	.....	.....	.....	Blue sky.....	G. T. Watson.
Greenwich, Royal Obs'y	28.83	732.3	29.00	736.6	49.0	9.4	.....	SW	.....	.....	2	.....	9	.....	.....	.....	.....	Nearly o'cast	The Staff, for G. B. Airy.
Guernsey	28.79	731.3	29.02	737.1	50	10.0	.....	SW	.....	.....	4	.....	5	.....	.....	.....	.....	D. clouds....	Dr. S. E. Hoskins, F.R.S.
Helston	.....	.....	28.86	733.0	50	10.0	.....	SW	.....	.....	7	.....	6	.....	.....	0.37	9.4	D. clouds	M. P. Moyle.
Holyhead	28.65	727.7	28.70	729.0	45	7.2	.....	SSW	.....	.....	7	.....	10	.....	.....	Blank	Blank	Misty.....	John Tilston.
Jersey	28.78	731.0	29.06	738.1	48.2	9.0	.....	SSW	.....	.....	6	.....	7	.....	.....	Blank	Blank	D. clouds....	J. Fisher.
Kew, Observatory	.....	.....	29.00	736.6	50.0	10.0	.....	S	16	7.2	.....	.....	6	.....	.....	.....	.....	D. clouds....	The Staff.
Kingstown	28.59	726.2	28.62	726.9	45	7.2	.....	S	.....	.....	6	.....	9	.....	.....	.....	.....	Overcast.....	George Mitchell.
Leicester, Museum	.....	.....	28.90	734.0	47.0	8.3	.....	SW	.....	.....	2	.....	1	.....	.....	.....	.....	D. clouds....	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.95	760.7	30.03	762.7	72.4	22.4	.....	W	.....	.....	2	.....	6	.....	.....	.....	.....	Overcast.....	S'gt. C. Arbeiter. A.H.C
Nairn	28.33	719.6	28.42	721.9	44	6.7	.....	SE	.....	.....	4	.....	5	.....	.....	.....	.....	½ clouded...	W. D. Penny.
Nassau, (Bahamas)	.....	.....	30.09	764.3	74.0	23.3	.....	NW	.....	.....	6	.....	4	.....	.....	.....	.....	D clouds....	C. S. Duncombe.
Nottingham, Observatory	28.72	729.5	28.90	734.0	47.7	8.7	.....	S	.....	.....	5	.....	2ck;k	.....	SSW	0.482	12.24	Blue sky.....	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	28.36	720.3	28.87	733.3	47.2	8.4	.....	S	.....	.....	6	.....	6	.....	.....	.....	.....	D. clouds....	Rev. Stephen Whitty
Oxford, Radcliffe Obs'y	.....	.....	28.96	735.6	47	8.3	.....	S	.....	.....	1	.....	3	.....	.....	.....	.....	Blue sky.....	F. Lucas
Plymouth	28.82	732.0	28.89	733.8	50.0	10.0	.....	SW	.....	.....	5	.....	10	.....	.....	.....	.....	Gloomy.....	John Merrifield.
Roche's Point	28.59	726.2	28.64	727.4	45	7.2	.....	WSW	.....	.....	4	.....	8	.....	.....	.....	.....	Showery.....	W. Kennedy.
Saint Ann's Head	28.56	725.4	28.72	729.5	48	8.9	.....	SSW	.....	.....	7	.....	6	.....	.....	.....	.....	Squally.....	John C. Walker.
Sandwick Manse, (Orkneys)	.....	.....	28.44	722.4	43.3	6.3	.....	S	40	17.9	.....	.....	2	.....	.....	.....	.....	D. clouds....	Rev. C. Clouston, LL. D
Scutari, Cemetery, (Turkey)	.....	.....	30.10	764.5	58.0	14.4	.....	SW	.....	.....	1	.....	1	.....	.....	.....	.....	Blue sky.....	Sergt. W. H. Lyne.
Sheffield	28.63	727.2	28.87	733.3	46.8	8.2	.....	SW	.....	.....	3	.....	7	.....	.....	0	0	D. clouds....	W. F. Cooper.
Silloth Rectory	28.64	727.4	28.87	728.2	44.2	6.8	83	S	.....	.....	6	.....	4	.....	.....	0.365	9.27	D. clouds....	Rev. F. Redford, M. A.
Stonyhurst, Observatory	.....	.....	.....	.....	42.5	5.8	.....	S	.....	.....	5	.....	8	.....	.....	.....	.....	Hazy.....	Rev. S. J. Perry.
Stornoway, Lews C., (Hebr.)	.....	.....	28.13	714.5	44	6.7	.....	S	.....	.....	9	.....	10	.....	.....	.....	.....	Overcast.....	John Smith.
Stratfield Turgiss	28.76	730.5	28.98	736.1	49.7	9.8	.....	S	.....	.....	1	.....	5	.....	.....	.....	.....	Showery.....	Rev. C. H. Griffith, F.M.S.
Thurso	.....	.....	28.41	721.6	44	6.7	.....	S	.....	.....	6	.....	4	.....	.....	.....	.....	D. clouds....	John Trotter.
Truro, Royal Institution	.....	.....	28.88	733.5	50	10.0	.....	SE	.....	.....	6	.....	6	.....	.....	.....	.....	Gloomy.....	W. Newcombe.
Valencia, Observatory	.....	.....	28.60	726.4	46.3	7.9	.....	SW	24	10.7	.....	.....	10	.....	.....	.....	.....	Raining.....	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)	.....	.....	.....	.....	45	7.2	.....	W	.....	.....	7	.....	5	.....	.....	0.30	7.6	.....	Henry Mercer.
Cape Good Hope, Obs'y	29.95	760.7	29.99	761.7	72.7	22.6	66	W	17	7.6	.....	2	4	.....	.....	.....	.....	.....	The Staff, for E. J. Stone.
Hobart Town, (Tasmania)	.....	.....	29.84	757.9	54.5	12.5	82	NW	.....	.....	3	.....	8k	.....	.....	0.07	1.8	.....	Francis Abbott, F.R.A.S.
Leith, Restalrig Park	.....	.....	28.65	727.7	45.9	7.7	.....	SW	.....	.....	5	.....	10k	.....	.....	0.21	5.3	Showery.....	Andrew Gibb.
Mauritius, Observatory	29.78	756.4	29.97	761.2	80.0	26.7	74	N	13.5	6.0	.....	1	9	.....	NNW	0	0	Cloudy.....	C. Meldrum.
Melbourne, Observatory	30.13	765.3	30.22	767.6	51.9	11.1	81	SE	5	2.2	.....	.....	0	.....	.....	0	0	Light dew...	R. L. J. Ellery.
Monach L't-house, (Hebrides)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Youngclause.
North Unst, (Shetland Is.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Robert Burnet.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m.

Marine Series. Vessels.																Sea or swell. Height scale 0—9	Sea or swell. Direction from—		
S. S. Algeria	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. W. Watson.
S. S. Batavia, N. 51° 0′, W. 22° 20′	.....	.....	29.22	742.2	44	6.7	.....	NW	.....	.....	6	.....	7	.....	.....	8	WNW	Showery.....	Capt. J. E. Mouland.
Ship Camperdown	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. A. T. Miller.
Brig Catherine	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. Adam Smith.
Barque Celeste	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. D. F. McKechnie.
S. S. Hibernia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. W. R. Cato.
Barque Maroon	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. A. T. Brown.
Ship Mikado	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. C. C. Prehn.
S. S. Seine	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. H. Manning.
Barque Sorata	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. Jas. J. Price.
Schooner Traveller	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. Alex Simpson.
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NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.

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

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

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

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

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

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

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

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
San José	26.22	666.0	.....	.....	66.6	19.2	88	NE	.....	.....	6	.....	3cs;sd	E	NE	Inap.	Inap.	.....	Federico Maison.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

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

DANISH SERIES.

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

Copenhagen	29.42	747.3	29.47	748.5	46.9	8.3	92	SSE	.....	.....	6	.....	10	.....	.....	.....	.....	.....	.....
Fanöe	29.19	741.3	29.21	741.8	48.9	9.4	92	SSE	.....	.....	7	.....	10	.....	.....	.....	.....	.....	.....
Godthaab, (Greenland)	29.45	747.9	29.49	749.0	19.6	—6.9	59	NE	.....	.....	4	.....	5	.....	.....	.....	.....	Snowing	.....
Stykkisholm, (Iceland)	28.54	725.0	28.59	726.1	25.0	—3.9	90	NE	.....	.....	9	.....	10	.....	.....	.....	.....	.....	.....
Thorshavn, (Faröe)	28.25	717.6	28.29	718.5	46.6	8.1	78	SE	.....	.....	6	.....	6	.....	.....	.....	.....	.....	.....
Vestervig	29.00	736.6	29.17	740.9	47.8	8.8	96	SE	.....	.....	7	.....	10	.....	.....	.....	.....	Raining	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

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

Alençon, Normal School	28.65	727.8	29.21	741.8	55.4	13	82	SW	.....	.....	4	.....	10	.....	.....	0.717	18.2	Covered	Collignon, Director.
Amiens, Normal School	29.04	737.6	29.15	740.3	53.2	11.8	78	S	.....	.....	2	.....	5	.....	W	0.354	9.0	Cloudy	Bonvarne, Director.
Avignon, Normal School	29.46	748.2	29.54	750.2	61.3	16.3	69	SE	.....	.....	6	.....	10	.....	S	0.177	4.5	Covered	Mr. Giraud, Director.
Bar-sur-Seine	28.71	729.2	29.26	743.2	54.7	12.6	70	SW	.....	.....	4	.....	10	.....	SW	Inap.	Inap.	Raining	C. Saillard.
Bar-sur-Seine	28.71	729.2	29.26	743.2	54.7	12.6	70	SW	21.5	9.6	.....	.....	10	.....	SW	0.579	14.7	Raining	Albert Cheux.
Beaumette Obs'y (Angers)	29.05	737.9	29.21	741.9	50.4	10.2	84	SW	.....	.....	3	.....	8	.....	SW	0.423	10.75	Very cloudy	Normal School.
Beauvais	28.91	734.4	29.19	741.5	52.0	11.1	75	SSW	.....	.....	6	.....	10	.....	SW	0	0	Covered	Normal School.
Besançon	28.52	724.3	29.35	745.5	56.5	13.6	71	SSW	.....	.....	8	.....	5n	.....	S	0	0	Cloudy	Normal School.
Bourg-en-Bresse	28.54	724.8	29.44	747.7	56.3	13.5	63	S	.....	.....	6	.....	10	.....	E	0.075	1.9	Covered	A. Wagner, Director.
Bourges, Normal School	28.75	730.2	29.29	744.0	50 0	10	89	WSW	.....	.....	6	.....	10	.....	SW	0.866	22.00	Raining	The Staff.
Brest, Naval Observatory	28.78	731.0	29.00	736.6	50.5	10.3	66	SW	.....	.....	6	.....	10	.....	E	0	0	Slightly cl'dy	Vateau, Director.
Carcassonne, Normal School	28.94	735.0	29.34	745.3	57.2	14	80	E	.....	.....	4	.....	2	.....	NE	0	0	Covered	Normal School.
Caen	29.02	737.2	29.10	739.1	52.5	11.4	71	NNE	.....	.....	1	.....	10	.....	.....	0.55	14.	Covered	Lequin, Director.
Chartres, Normal School	28.60	726.5	29.15	740.5	51.1	10.6	84	SSW	.....	.....	4	.....	10	.....	.....	0.197	5.0	Light rain	T. Leloup, Director.
Châlons-sur-Marne, N. Sch'l	28.91	734.4	29.23	742 4	49.8	9.9	100	S	.....	.....	3	.....	10	.....	.....	.....	.....	.....	.....
Clermont-Fd., Puy de D. Obs	27.98	710.6	29.28	743.7	61.5	16.4	50	S	.....	.....	3	.....	8	.....	SW	0	0	Very cloudy	Alluard, Director.
Commercy, Normal School	28.45	722.7	29.34	745.3	52.5	11.4	88	SSW	.....	.....	4	.....	10	.....	SSW	0	0	Covered	Dr. Goulet, Director.
Commune de Gréasque*	28.50	723.8	29.04	752.8	58.1	14.5	72	SE	.....	.....	4	.....	10	.....	SE	0.04	1.	Covered	.....
Grenoble	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Normal School.
La Roche-sur-Yon, N. School	29.02	737.0	29.23	742.4	50.4	10.2	70	SSE	.....	.....	2	.....	2	.....	NNE	0.126	3.2	Slightly cl'dy	Mouillot, Director.
Le Mans, Normal School	28.90	734.0	29.20	741.7	48.9	9.4	86	SW	.....	.....	4	.....	8	.....	SW	0.583	14.8	Very cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	28.46	722.8	29.35	745.5	54.1	12.3	74	S	.....	.....	5	.....	10	.....	S	0.870	22.10	Covered	Pin, Director.
Lorient, Naval Observatory	29.03	737.4	29.13	739.9	52.2	11.2	61	SW	.....	.....	5	.....	8	.....	W	0.394	10.0	¾ covered	T. Carré, Director.
Mâcon, Normal School	28.69	728.6	29.36	745.7	55.0	12.8	93	N	.....	.....	6	.....	5	.....	S	0	0	Cloudy	M. Marchal, Director.
Metz	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. A. Schuster, Dir.
Mirecourt	28.33	719.5	29.35	745.5	54.7	12.6	70	SSW	.....	.....	.....	.....	10	.....	NNE	0	0	Covered	Normal School.
Nismes, Normal School	29.32	744.6	29.52	749.7	61.2	16.2	87	S	.....	.....	2	.....	5	.....	N	0	0	Cloudy	Boyer, Director.
Orleans, Normal School	28.84	732.0	29.22	742.2	49.0	9.8	86	SW	.....	.....	8	.....	8	.....	SW	0.28	7.	Very cloudy	Bernard, Director.
Paris, Observatory	28.97	735.8	29.21	741.8	50.4	10.2	81	S	.....	.....	2	.....	10km	.....	SW	0.172	4.37	Covered	National Observatory.
Privas	28.45	722.5	29.49	749.1	55.6	13.1	67	S	.....	.....	6	.....	10	.....	S	0.20	5.	Covered	Normal School
Rochefort, Naval Obs'y	29.24	742.7	29.27	743.5	50.0	10.0	82	SW	.....	.....	6	.....	8	.....	SW	0.16	4.	¾ covered	Lt. Decante, Director.
Rouen, Normal School	29.06	738.1	29.15	740.3	53.2	11.8	89	S	.....	.....	2	.....	2	.....	S	0.218	5.4	Slightly cl'dy	F. Lucard, Director.
Tarbes, Normal School	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	T. Hugues, Director.
Villefranche	28.71	729.2	29.41	746.9	58.1	14.5	89	ESE	.....	.....	8	.....	8	.....	.....	0	0	Very cloudy	Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.79	756.6	29.82	757.3	80.6	27	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.10	28.	.....	L'Abbé Marchési.
Marseilles, Observatory	.....	.....	29.59	751.6	61.7	16.5	70	S	.....	.....	4	.....	10	.....	SSW	0.028	0.70	Raining	The Staff.
Mont-Louis	24.42	620.2	29.73	755.2	39.0	3.9	75	SSW	37.3	16.66	.....	.....	10	.....	SSW	0.012	0.3	.....	Mr. Falguère.
Nice	.....	.....	29.67	753.7	56.1	13.4	98	SW	.....	.....	8	.....	10	.....	SW	1.890	48.0	Thunder-storm	Dr. A. Niepce.
Paris, Montsouris Obs'y	28.93	734.7	29.20	741.7	49.6	9.8	82	SSW	.....	.....	3-4	.....	10	.....	SSW	0.236	6.0	.....	Marié Davy, Director.
Perpignan	.....	.....	29.36	745.4	64.4	18.0	41	SW	18.6	8.33	.....	.....	10	.....	SW	0	0	.....	Dr. Fines.
Pic du Midi, (Summit,) H. P.	20.70	525.8	.....	.....	26.6	— 3.0	.....	SW	.....	.....	6	.....	10	.....	.....	.....	.....	Snowy	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.03	559.6	.....	.....	29.7	— 1.3	.....	SW	.....	.....	6	.....	10	.....	.....	0.331	8.4	Snowy	Gen'l de Nansouty.
Saint Maur, (near Paris)	29.06	738 0	29.22	742.2	50.5	10.3	80	S	.....	.....	2	.....	10	.....	SSW	0.134	3.4	.....	E. Renou.
Toulouse, Observatory	28.74	730.1	29.45	748.1	55.8	13.2	78	WSW	.....	.....	4	.....	9	.....	.....	0.102	2.6	.....	The Staff.
Tours	29.04	737.7	29.24	742.7	50.0	10.0	89	SW	.....	.....	2	.....	10	.....	SW	0.484	12.3	.....	C. Marquet.
Versailles, (near Paris)	.....	.....	29.17	740.9	50.4	10.2	80	SW	.....	.....	2	.....	10	.....	.....	0.131	3.34	Covered	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.12	765 0	30.15	765.7	53.8	12.1	92	NNW	7.6	3.4	.....	9ck	.....	W	.....	0	0	Covered	Marc Dechevrens, S. J.
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NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the oldest series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; for Montsouris, the barometer reduced to freezing but not to sea-level. At Mirecourt the cloud direction is apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,368 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

GERMAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Berlin	29.38	746.2	29.55	750.6	50.9	10.5	79	S			1		9			0.024	0.61		Prof. Arndt.
Breslau	29.11	739.5	29.64	752.8	58.6	14.8	65	SSE			3		2			0	0		Royal University Obs'y.
Carlsruhe	28.97	735.8	29.38	746.3	54.0	12.2	72	ESE			1		10			0.134	3.4	Raining	Albert Senz.
Cassel	28.88	733.5	29.47	748.6	56.5	13.6	61	SE			3		10	SSW		0	0		Dr. H. Möhl.
Crefeld	29.09	738.8	29.24	742.8	52.7	11.5	87	SE			5		10			0.16	4.	Raining	Director Lose.
Emden	29.23	742.4	29.26	743.3	52.2	11.2	85	S			4		10			0.008	0.2		Prof. Prestel.
Frankfort on the Main	29.12	739.6	29.48	748.9	51.6	10.9		SE			2		9			0.12	3.		Physical Society.
Friedrichshafen	28.06	712.6	29.48	748.8	48.6	9.2	87	NE			6		6	N		0.075	1.9		M. Wilhelm.
Hamburg	29.30	744.3	29.37	746.1	50.4	10.2	87	SSE			5		10			0.043	1.1	Squally	Captain F. Hegemann.
Kiel	29.34	745.2	29.35	745.6	50.0	10.0	84	SE			5		10			0.039	0.99		Prof. G. Karsten.
Königsberg, (Prussia)	29.72	754.9	29.80	756.9	44.2	6.8	80	SE										Fair	Prof. E. Luther.
Köslin			29.58	751.3	44.6	7.0		SE			2		4			0.028	0.7		H. Müller.
Leipsic, Observatory	29.14	740.1	29.56	750.7	50.5	10.3	81	SE			2		10			0.031	0.8		Prof. Bruhns.
Memel, Naval School	29.82	757.5	29.87	758.7	42.4	5.8	81	SE			5		6ck;cs					Squally	Reinbrecht von Skalweit.
Neufahrwasser	29.74	755.5	29.76	755.9	46.8	8.2	82	SE			3		7	S		0	0		A. Lothes.
Posen	29.38	746.2	29.67	753.6	54.5	12.5	73	S			1		1					Clear	Dr. Magener.
Strassburg Obs., (in Alsace	28.88	733.5	29.42	747.3	51.3	10.7	76	S			1		10	S				Raining	Dr. Schur.
Stuttgart	28.53	724.7	29.47	748.4	50.9	10.5	74	E			1		10	S		0.075	1.9		Prof. Schoder.
Treves, (Trier)	28.72	729.4	29.23	742.4	54.5	12.5	73	SW			7		10			0.374	9.50	Foggy	Prof. Flesch.
Weissenburg, (Bavaria)	28.03	712.0	29.55	750.5	43.9	6.6	85	SSE	7	3			10	S		0	0	Covered	Dr. Von Bebber.
Wustrow, Naval School	29.51	749.5	29.55	750.6	48.0	8.9	86	SE			4		10					Covered	E. F. Schütz.
German Naval Series.																			

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

GREEK SERIES.

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

Athens	29.73	755.1	30.12	765.1	58.5	14.7		NW										Covered	Dr. J. F. J. Schmidt.

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

INDIAN SERIES.

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

Kurrachee	29.95	760.7	30.00	762.0	84.7	29.3	54	WSW	11.0?	4.9?			0			0	0	Blue sky	
Deesa	29.54	750.2	30.01	762.3	86.6	30.3	39	Calm					0			0	0	Blue sky	
Bombay	29.90	759.5	29.94	760.4	84.8	29.3	70	NW	11.0	4.9			0			0	0	Blue sky	
Poona	27.94	709.6	29.94	760.5	79.8	26.6	45	E					0			0	0	Blue sky	
Lahore	29.24	742.6	30.00	761.9	71.8	22.1	58	NE	1.4	0.6			10			0.08	2.0	Cloudy	
Belgaum	27.44	696.9	29.99	761.7	76.0	24.4	50	E	1.0	0.4			1			0	0	D. clouds	
Bangalore																			
Roorkee	29.13	740.0	30.05	763.2	74.8	23.5	44	SW	1.2	0.5			3			0	0		
Agra	29.42	747.3	29.99	761.7	80.2	26.8	46	NE								0	0		
Trichinopoly																			
Nagpur	28.98	736.4	30.04	763.0	76.6	24.8	38	Calm	2.5	1.1			0			0	0	Blue sky	
Madras																			
Lucknow	29.65	753.1	30.03	762.7	74.3	23.5	64	NW	1.1	0.5			0			0	0	Blue sky	
Allahabad	29.70	754.4	30.02	762.4	75.6	24.2	58	Calm	0.9	0.4			0			0	0	Blue sky	
Patna	29.86	758.5	30.06	763.6	79.7	26.4	47	W	0.7	0.3			0			0	0	Blue sky	
Hazaribagh	28.01	711.3	30.06	763.4	71.6	22.0	49	Calm	2.2	1.0			0			0	0	Blue sky	
Cuttack	29.96	761.0	30.04	763.1	74.0	23.3	69	NNE	0.2	0.1			0			0	0	Blue sky	
Calcutta (Alipore)	30.01	762.1	30.03	762.7	71.8	22.1	83	N	2.0	0.9			2			0	0	D. clouds	
Goalpara	29.63	752.6	30.03	762.7	75.2	24.0	69	ESE	2.7	1.2			0			0	0	Blue sky	
Chittagong	29.94	760.4	30.03	762.8	77.7	25.4	77	NW	2.9	1.3			0			0	0	Blue sky	
Sibsagar	29.72	755.0	30.07	763.8	69.0	20.6	86	ENE	1.9	0.8			2			0	0	Blue sky	
Rangoon																			
Jubbulpore	28.67	728.2	30.05	763.2	78.0	25.6	51	NE	2.1	0.9			0			0	0	Blue sky	

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

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Valdobbia	21.88	555.7	29.76	755.9	28.6	— 1.9	90	ENE			2		10			5.907*	150.0*		Ab. Dom. Morgini.
Stelvio	21.89	556.1	29.80	756.9	28.8	— 1.8		S			8		10			0.472	12.0		Signora Ernesta Manfredi.
Udine	29.89	746.4	29.80	756.9	56.7	13.7	89	S	1.8	0.8			10			1.303	33.1		Prof. Giovanni Clodig.
Padua	29.66	753.4	29.77	756.2	55.0	13.3	87	NE	4.3	1.9			10	SW		0.067	1.7		Prof. Dott. Lorenzoni.
Vicenza	29.68	751.4	29.78	756.4	53.2	12.9	89	NNE	0.7	0.3			8	E		0.433	11.0		Conte Alm. Da Schio.
Verona	29.52	749.9	29.75	755.6	59.0	15.0	91	NNE	0	0			10			0.244	6.2		Dott. B. Bertoncelli.
Bergamo	28.43	722.2	29.77	756.1	50.4	10.2	84	N			4		10			0.862	21.9		Prof. Trionfini Carlo.
Domodossola	28.72	729.5	29.77	756.2	48.0	8.9	97	Calm			0		10			1.248	31.7		Prof. Giuseppe Calza.
Milan	29.22	742.2	29.74	755.5	50.7	10.4		ENE			2		10	ESE		1.219	30.8		Ab. Gio. Capelli.
Pavia	29.38	746.2	29.73	755.2	50.2	10.1	97	E			2		10			0.386	9.8		Prof. Gio. Cantoni.
Moncalieri	28.84	732.4	29.76	755.8	47.5	8.6	97	NNW	0	0			10			0.047	1.2		Prof. P. F. Denza.
Mondovi	27.81	706.4	29.75	755.7	45.1	7.3	94	NNW			1		10			0	0		Prof. D. C. Bruno.
Porto Maurizio	29.50	749.3	29.72	754.9	56.7	13.7	91	SW			2		10	SW		1.366	34.7		Prof. L. Vassallo.
Genoa	29.56	750.9	29.73	755.2	58.5	14.7	82	SE	13.7	6.1			10	S		0.803	20.4		Prof. G. M. Garibaldi.
Piacenza	29.48	748.8	29.74	755.4	51.4	10.8	92	E	11.2	5.0			10			0.228	5.8		Dott. G Manzi.
Parma	29.41	747.1	29.73	755.2	53.6	12.0	93	NNE			2		10			0.319	8.1		Prof. P. Pigorini.
Florence	29.56	750 7	29.82	757.3	63.5	17.5	74	SE			2		10	SW		0.827	21.0		Cav. F Meucci.
Leghorn	29.70	754.4	29.79	756.6	62.6	17.0	80	S	1.3	0.6			9	W		0.043	1.1		Prof. P. Monte.
Siena	28.61	726.7	29.82	757.5	58.1	14.5	81	S	2.5	1.1			10	SW		0.299	7.6		Prof. L. Toscani.
Urbino	28.33	719.5	29.80?	759.3?	56.8	13.8	67	SW			2		10			0.437	11.1		Prof. P. Serpieri.
Pesaro	29.77	756 2	29.82	757.5	61.3	16.3	70	SW	9.8	4.4			10	SW		0	0		Prof. Luigi Guidi.
Ancona	29.72	755.0	29.83	757.7	61.5	16.4	52	SE			4		10			0	0		Prof. F. DeBosis.
Grosseto	29.76	755.9	29.87	758.7	63.7	17.6	72	SSE			4		6	S		0.429	10.9		Avv. P. Ponticelli.
Rome	29.73	755.1	29.91	759.6	62.1	16.7	74	S	11.2	5.0			10			0.433	11.0		Prof. P. A Secchi.
Naples, O. U.	29.78	756.3	29.98	761.4	65.5	18.6	77	S			2		10	SSW		1.169	29.7		Prof. L. Palmieri.
Lecce					64.9	18.3	79	S	9.4	4.2			4			0	0		Prof. C. De Giorgi.
Cosenza					65.8	18.8	79	NE	1.6	0.8			10			0	0		Prof. F. D. Conti.
Cagliari					67.1	19.5	78	S			2		9	W		0	0		Prof. A. Pacinotti.
Riposto, (Sicily)	29.91	759.6	29.95	760.8	64.8	18.2	78	NE			2		6	SW		0	0		Prof. F. Caflero.
Palermo	29.67	753.7	29.93	760.1	70.0	21.1	44	WSW	5.6	2.5			0			0	0		Prof. G. Cacciatore.
Caltanissetta	28.05	712.5	29.99	761.8	68.8	14.9	66	SSE			4		7	NE		0	0		Prof. A. Pagani.
Syracuse	29.92	760.0	30.00	761.9	66.9	19.4	77	SW			4		9	SW		0	0		Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.43	747.6	29.99	761.7	60.4	15.8	81	SW	1.8	0.8			10			0.110	2.8		Prof. F. Brioschi.

Note.—The originals give the wind-force on the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,543.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo 379.6 m., or 1,245.3 ft.; Mondovi, 558 m., or 1,824.2 ft.; Siena, 348.5 m., or 1,143.3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft. *Unmelted snow.

JAPANESE SERIES.

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

Tokei (Yeddo)																			The Observatory.
Tokei (Yeddo) University	30.20	767.1	30.30	769.7	49	9.4	85									0	0	Clear	Prof. P. V. Veeder.

MEXICAN SERIES.

By authority of the Secretary of Public Works.

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

Aguascallientes																			I. N. Marin, M. D.
Córdoba																			C. Peña, M. D.
Cuernavaca																			L. Castillo, A. E.
Guadalajara																			Prof. L. Perez.
Guanajuato																			Prof. V. Fernandez.
Leon																			Prof. M. Leal.
Mexico	29.16	588.4	30.33	770.3	42.8	6.0	74	Calm	0	0		0	0			0	0	Fair	Central Observatory.
Orizaba																			N. N.
Orizaba																			I. Orozco, M. D.
Pabellon, (Aguascalts)																			M. V. de Leon, M. E.
Puebla																			Prof. B. Gonzalez.
Toluca																			Prof. C. Velazquez.
Tlacotalpam																			Prof. F. R. Bayly.
San Luis Potosi																			G. Barroeta, M. D.
Vera-Cruz																			Prof. J. Rossell.
Zacatecas																			J. A. Bonilla, M. E.
Puebla, (Catholic Institute)																			P. Spina. [M. M. D. D.
Morelia																			M. Tena, F. L. Páramo,

Note.—The elevation of Aguascallientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,569 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,293 m., or 7,522.9 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabell m. 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

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

Flushing																			
Groningen	29.16	740.6	29.16	740.6	51.8	11.0		S			4					0.079	2.0		
Helder	29.15	740.5	29.21	741.9	51.3	10.7		S			5					0.122	3.1		
Hellevoetsluis	29.12	739.6	29.12	739.6	50.7	10.4		SSW			4					0.055	1.4		
Utrecht			29.15	740.3	52.7	11.5	79	S			5								
	29.15	740.3	29.19	741.5	52.7	11.5	71	SSW			4		5			0.185	4.7	Cloudy	H. v d Brink.

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

NORWEGIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	28.83	732.3	28.89	733.7	54.7	12.6	59	S	31.5	14.1	.....	.....	4	.....	.....	0.366	9.3	.....	
Brönö	29.29	743.9	29.33	744.9	51.8	11.0	50	SSE	36	16	.....	.....	6	.....	.....	0	0	.....	
Christiania	29.22	742.2	29.37	745.9	50.5	10.3	76	SSE	13	6	.....	.....	10	.....	.....	0.524	13.3	.....	
Tromsö	29.47	748.6	29.52	749.7	30.3	2.4	89	Calm	0	0	.....	.....	2	.....	.....	0	0	.....	
.....																			

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

PORTUGUESE SERIES.

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

Angra, (Azores)	30.02	762.5	30.21	767.4	59.4	15.2	80	WNW	13.7	6.1	.....	.....	5	.....	.....	0	0	.....	Dr. J. A. Sampaio.
Campo Major	28.74	729.9	29.77	756.2	57.0	13.9	67	WNW	20.6	9.2	.....	.....	9	WNW	.....	0.283	7.2	Light rain...	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	29.98	761.6	30.07	763.8	72.1	22.2	62	W	6.3	2.8	.....	.....	9	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.44	747.8	29.80	756.9	58.3	14.6	64	WNW	15.0	6.7	.....	.....	10	W	.....	0.217	5.5	.....	The Staff.
Ponta Delgada, (Azores)	30.15	765.7	30.22	767.5	61.9	16.6	61	N	5.6	2.5	.....	.....	3	.....	.....	0.024	0.6	.....	
.....																			
.....																			

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

Naval Series. Vessels.	Sea or swell. Height scale 0–9	Sea or swell. Direction from—		
S. S. India.			.....	A. D. Pedroso, Com'd't. Lt. S. A. P. de Mirando.
.....			.....	.....
.....			.....	.....

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

RUSSIAN SERIES.

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

Warsaw	29.39	746.5	29.82	757.3	50.7	10.4	70	SE	20	9	.....	.....	1	.....	.....	.....	.....	.....	Astronomical Obs.
Wilna	29.66	753.3	30.09	764.3	41.0	5.0	80	SE	4	2	.....	.....	10	.....	.....	.....	.....	.....	Astronomical Obs.
Dorpat	29.90	759.5	30.15	765.9	40.3	4.6	84	SE	7	3	.....	.....	10	.....	.....	.....	.....	.....	Prof. Dr. Weihrauch
St. Petersburg	30.26	768.5	30.27	768.9	35.6	2.0	85	SSE	18	8	.....	.....	10	.....	.....	.....	.....	.....	Central Physical Obs.
Kuopio	29.74	755.5	30.07	763.8	37.4	3.0	100	S	34	15	.....	.....	10	.....	.....	.....	.....	Raining.....	Ch. Forsten.
Kieff	29.55	750.6	30.21	767.4	38.3	3.5	95	SE	9	4	.....	.....	10	.....	.....	.....	.....	Foggy	Physical Cabinet.
Nikolaiev	30.14	765.5	30.21	767.3	45.0	7.2	93	E	4	2	.....	.....	10	.....	.....	.....	.....	Light rain...	Kurdakof.
Kertch	29.91	759.6	29.93	760.1	49.8	9.9	91	ENE	11	5	.....	.....	10	.....	.....	.....	.....	.....	Lagorio.
Moscow	30.02	762.6	30.61	777.4	30.6	— 0.8	92	SSE	7	3	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Lugan	30.01	762.3	30.22	767.6	44.8	7.1	70	ENE	13	6	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Archangel	30.26	768.7	30.28	769.2	37.4	3.0	93	S	22	10	.....	.....	8	.....	.....	.....	.....	.....	Ogorodnikof.
Tiflis	28.67	728.2	30.10	764.5	54.1	12.3	80	SE	4	2	.....	.....	9	.....	.....	.....	.....	.....	Physical Observatory.
Astrakhan	30.35	770.9	30.27	768.8	47.3	8.5	64	NE	7	3	.....	.....	10	.....	.....	.....	.....	.....	Sebastianof.
Kasan	30.39	772.0	30.68	779.3	31.3	— 0.4	70	NE	4	2	.....	.....	10	.....	.....	.....	.....	.....	Physical Cabinet.
Orenburg	30.13	765.4	30.54	775.7	21.4	— 5.9	57	E	13	6	.....	.....	5	.....	.....	.....	.....	.....	Tschernischef.
Ekaterinburg	29.58	751.4	30.61	777.5	18.9	— 7.3	84	NNE	9	4	.....	.....	10	.....	.....	.....	.....	Snowing.....	Meteorological Obs.
Nukuss	29.88	759.0	30.12	765.0	51.8	11.0	61	NE	2	1	.....	.....	2	.....	.....	.....	.....	.....	
Kasaly	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Bobrof.
Tashkend	28.52	724.3	30.26	768.5	48.4	9.1	86	Calm	0	0	.....	.....	10	.....	.....	.....	.....	.....	Michelson.
Barnaul	29.51	749.6	30.07	763.7	24.3	— 4.3	81	NW	9	4	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Yeniseisk	29.65	753.1	29.98	761.6	28.2	— 2.1	94	SE	4	2	.....	.....	10	.....	.....	.....	.....	Snowing.....	Marks.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Usolzef.
Oorga	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Mossin.
Peking, (China)	30.01	762.3	30.15	763.9	48.2	9.0	26	NW	22	10	.....	.....	0	.....	.....	.....	.....	.....	Physical Observatory.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nikolaievsk, on the Amoor	.....	.....	.....	.....	15.4	— 9.2	91	W	13	6	.....	.....	10n	.....	.....	.....	.....	Snowing.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Ekaterinburg, 306.4? m., or 1,005.2? ft.; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft.

SPANISH SERIES.

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

Barcelona, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Rave, Director.
Bilbao, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Manuel de Naveran
Burgos, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Domingo Martin y Perez.
Madrid, Royal Observatory	27.35	694.8	29.54	750.4	56.7	13.7	78	SW	35.8	16.00	.....	0	5	.....	.....	0.031	0.8	Cloudy.....	The Staff.
Murcia, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Olayo Diaz, Director.
Santiago, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	30.09	764.2	30.16	765.9	71.7	22.1	72	NNE	14.1	6.3	.....	.....	10k;n	.....	NNE	Inap.	Inap.	Cloudy.....	Benito Vines, S. J.
San Fernando, Naval Obs'y.	29.77	756.2	29.87	758.7	64.9	18.3	80	SSW	34.4	15.4	.....	0	10	.....	WSW	0.444	11.3	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.	.....	.....	29.87	758.8	81.3	27.4	86	SE	0	0	.....	2s	1k	Calm	Calm	0	0	Clear	Leonardo de Tejeda, Chief of Engineers.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.88	759.0	29.92	760 0	38.5	3.6	.....	S	.....	.....	4	.....	5	.....	.....	0.669	17.0	.....	
Umea	29.79	756.7	29.84	758.0	40.3	4.6	100	S	.....	.....	6	.....	10	.....	.....	0.362	9.2	.....	
Hernosand	29.74	755.5	29.80	756.8	41.4	5.2	94	S	.....	.....	6	.....	10	.....	.....	0.008	0.2	Raining	
Stockholm	29.56	750.9	29.74	755.4	43.2	6.2	91	SSE	.....	.....	4	.....	10	.....	.....	0.024	0.6	.....	
Wisby	29.68	753.9	29.74	755.4	43.5	6.4	94	SSE	.....	.....	6	.....	10	.....	.....	0.185	4.7	.....	
Sub-Series.																			
Upsala	29.66	753.3	29.73	755.2	42.3	5.7	94	SSE	12.3	5.5	.....	.....	10	.....	.....	0.007	0.18	Foggy	Dr. Hildebrandsson.

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

SWISS SERIES.

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

Geneva	28.03	712.0	29.45	748.1	56.1	13.4	55	SSW	.....	.....	1	.....	10	.....	.....	0.024	0.6	Covered	The Observatory.
Zurich	27.86	707.7	29.54	750.2	44.2	6.8	95	W	.....	.....	1	.....	10	.....	.....	0.008	0.2	Covered	The Observatory.
.....																			
.....																			
.....																			

Note.—For Geneva the corresponding departures from the normal values are: Barometer, —14.3 mm; Thermometer, +6.1 cent.; Relative Humidity, —22 per cent.

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

TURKISH SERIES.

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

Constantinople	.....	.....	30.15	765.7	54.1	12.3	75	S	2	1.0	.....	.....	2	.....	SW	0	0	.....	The Observatory.
Fao, (Persian Gulf)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salonica	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	B. Stefanides.
Valona	.....	.....	30.14	765.6	58.6	14.8	.....	N	.....	.....	1	.....	10	.....	.....	.....	.....	.....	A. Bertrand.
Varna	.....	.....	30.06	763.4	66.0	18.9	.....	S	.....	.....	1	.....	5	.....	.....	0	0	Cloudy	Imperial Observatory.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.88	758.9	30.00	761.9	70.0	21.1	59	NW	.....	.....	1	.....	5ks	.....	N	0.11	2.8	D. clouds	Prof. C. V. A. Van Dyck.

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

CANADIAN SERIES.

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

Bathurst, N. B	29.86	758.4	29.93	760.2	26.8	— 2.9	96	Calm	0	0	.....	10	.....	.....	.....	0	0	Threatening	Hon. J. Ferguson.
Brockville, Ontario	.....	.....	30.15	765.8	34	1.1	.....	SW	3	1.3	.....	.....	10s	.....	W	0	0	Cloudy	W. R. Bigg.
*Chatham, N. B	.....	.....	29.94	760.5	25	— 3.9	93	W	6	2.7	.....	2k	8ks	NW	NW	0	0	Cloudy	G. A. Blair.
Charlottetown, P. E. Island.	.....	.....	29.88	758.9	35	1.7	73	NE	9	4.0	.....	.....	10ks	.....	Calm	0	0	Cloudy	H. J. Cundall, C. E.
Cornwall, Ontario	29.89	759.2	30.09	764.3	34.0	1.1	87	SW	.....	.....	2	.....	10s	.....	.....	0	0	Cloudy	James Smith, M. A.
Dalhousie, N. B	29.94	760.5	29.98	761.5	24.7	— 4.1	91	NW	.....	.....	1	.....	.....	.....	.....	0	0	Threatening	H. A. Johnson.
Esquimault, B. C	29.81	757.2	29.86	758.4	44.8	7.1	96	Calm	.....	.....	.....	.....	10	.....	.....	0	0	Cloudy	W. H. Bevis.
*Father Point, Quebec	.....	.....	29.96	761.0	29	— 1.7	83	SW	15	6.7	.....	.....	10s	.....	NW	Inap.	Inap.	Light snow	J. McWilliams.
Fredericton, N. B	29.94	760.5	30.01	762.2	25.0	— 3.9	87	E	6.0	2.7	.....	10cs	0	W	.....	0	0	Cloudy	Prof. Harrison.
*Fort Garry, Manitoba	.....	.....	29.86	758.4	26	— 3.3	94	SE	7	3.1	.....	2k	5ks	SE	SE	0	0	Fair	James Stewart.
Goderich, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	H. J. Strang, M. A.
Granton, Ontario	29.08	738.6	30.24	768.1	29.2	— 1.6	86	W	.....	.....	1	0	0	.....	.....	0	0	Clear	James Grant.
*Halifax, N. S	29.70	754.4	29.84	757.9	34	1.1	91	NW	16	7.2	.....	.....	10ks	.....	.....	Inap.	Inap.	Cloudy	F. Allison, M. A.
Hamilton, Ontario	29.88	758.9	30.26	768.6	34.5	1.4	81	SW	.....	.....	2	8cs	.....	SW	.....	0	0	Cloudy	Geo. Dickson, M. A
Heart's Content, N. F	29.80	756.9	29.83	757.7	32	0.0	100	NE	.....	.....	1	.....	10	.....	.....	0.30	7.6	Snowing	E. Weedon.
*Kingston, Ontario	29.82	757.4	30.17	766.3	35	1.7	85	SW	3	1.3	.....	.....	10s	.....	Calm	0	0	Cloudy	S. Woods, M. A.
Little Glace Bay, N. S	29.72	754.9	29.96	761.0	38.3	3.5	97	NE	8	3.6	.....	.....	10n	.....	.....	0.14	3.6	Misty	C. H. Rigby.
Montreal, Quebec	29.88	758.9	30.08	764.0	34	1.1	78	W	13	5.8	.....	.....	10n	.....	.....	0	0	Cloudy	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.45	748.0	30.16	766.1	38	3.3	86	N	9	4.0	.....	2ck	2ks	NW	NW	0	0	Fair	Rev. R. Mosley.
Peterboro, Ontario	29.39	746.5	30.18	766.6	34.7	1.5	59	Calm	.....	.....	0	0?	0?	.....	.....	0	0	Overcast?	J. F. Jeffers, B. A.
Port Dover, Ontario	29.54	750.3	30.20	768.6	33	0.6	80	SW	7	3.1	.....	0	0	.....	.....	0	0	Clear	H. Morgan.
Port Hastings, N. S	29.75	755.6	29.80	756.9	30.7	— 0.7	.....	N	2	0.9	.....	.....	.....	.....	.....	0	0	Fine	Peter Grant.
Port Stanley, Ontario	29.59	751.6	30.27	768.8	31	— 0.6	86	W	5	2.2	.....	0	0	.....	.....	0	0	Clear	M. Payne.
*Quebec, Quebec	29.68	753.9	30.01	762.2	32	0.0	90	S	9	4.0	.....	.....	10n	.....	S	0	0	Cloudy	Capt. Ashe, R. N.
*Rockliffe, Ontario	29.65	753.1	30.13	765.3	34	1.1	93	NW	3	1.3	.....	0	5s	.....	NW	0	0	Fair	W. H. McIntyre.
St. John, N. B	29.83	757.7	30.00	762.0	24	— 4.4	87	NW	5	2.2	.....	3k	0	.....	.....	0	0	Fine	G. Murdock, C. E.
Saugeen, Ontario	29.46	748.3	30.18	766.6	40	4.4	90	W	4	1.8	.....	.....	10ks	.....	.....	0	0	Cloudy	K. Stewart.
Stayner, Ontario	.....	.....	30.18	766.6	38	3.3	82	Calm	0	0	.....	10k	0	NW	.....	0	0	Cloudy	R. J. Cole.
Stratford, Ontario	28.90	734.0	30.25	768.3	27.4	— 2.6	96	W	3.5	1.6	.....	.....	3s	.....	.....	0	0	Fine	C. J. MacGregor, M. A.
*Sydney, C. B	29.76	755.9	29.79	756.7	37	2.8	90	NE	6	2.7	.....	.....	10n	.....	NE	0.17	4.3	Cloudy	T. C. Hill.
*Toronto, Ontario	29.82	757.4	30.22	767.6	33	0.6	91	W	2	0.9	.....	.....	10ks	.....	NW	0	0	Cloudy	Magnetic Observatory.
Windsor, N. S	29.80	756.9	29.90	759.4	33.0	0.6	89	NE	16	7.2	.....	10k	0	.....	.....	0	0	Fair	Prof. John E. Oram.
Woodstock, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Montgomery.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	31.0	— 0.6	.....	NE	.....	.....	.....	.....	10n	.....	.....	0.60	15.2	Snowing	John Delany.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

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

1877.—November 12.

UNITED STATES SERIES.

By authority of the SECRETARY OF WAR.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.93	760.2	30.18	766.6	33	0.6	69	NW	4	1.8	.....	5ks	2s	NW	Calm	0	0	Fair	
Alpena, Michigan	29.50	749.3	30.19	766.8	31	— 0.6	89	Calm	0	0	.....	0	1s	.....	Calm	0	0	Clear.	
Atlantic City, New Jersey	30.19	766.8	30.21	767.3	32	0.0	79	W	6	2.7	.....	0	0	.....	.....	Inap.	Inap.	Clear.	
Augusta, Georgia	30.21	767.3	30.41	772.4	36	2.2	90	NW	4	1.8	.....	0	Sm'e	.....	NW	0	0	Smoky	
Baltimore, Maryland	30.22	767.6	30.28	769.1	36	2.2	70	NW	2	0.9	.....	Haze	Sm'e	Calm	Calm	0	0	Smoky	
Barnegat, New Jersey	30.17	766.3	30.20	767.1	37	2.8	71	NW	12	5.4	.....	0	Haze	.....	Calm	Inap.	Inap.	Clear	
Bismarck, Dakota	27.91	708.9	29.62	752.3	27	— 2.8	77	E	12	5.4	.....	0	2s	.....	Calm	0	0	Clear	
Boise City, Idaho	26.97	685.0	29.57	751.1	42	5.6	83	SW	1	0.4	.....	.....	10n	.....	Calm	Inap.	Inap.	Light rain	
Boston, Massachusetts	29.93	760.2	30.09	764.3	30.5	— 0.8	74	NW	12	5.4	.....	0	Haze	.....	.....	0	0	Clear	
Brackettville, Texas	28.99	736.3	30.05	763.3	42	5.6	65	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Breckenridge, Minnesota	28.79	731.3	29.81	757.2	28	— 2.2	94	SE	13	5.8	.....	1cs	0	Calm	.....	0	0	Cloudy	
Brownsville, Texas	30.16	766.1	30.23	767.8	59	15.0	70	Calm	0	0	.....	2c	8s	Calm	SE	0	0	Fair	
Buffalo, New York	29.47	748.5	30.19	766.8	41.0	5.0	82	W	16	7.2	.....	2ck	2s	NW	NW	0	0	Cloudy	
Burlington, Vermont	29.89	759.2	30.16	766.1	35	1.7	70	S	4	1.8	.....	.....	10s	.....	Calm	0	0	Cloudy	
Cairo, Illinois	29.91	759.7	30.33	770.4	36	2.2	61	SE	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Camp Grant, Arizona	25.11	637.8	29.91	759.7	57	13.9	35	E	.....	.....	1	0	0	.....	.....	0	0	Clear.	
Camp Verde, Arizona	26.60	675.6	30.09	764.3	39	3.9	55	W	.....	.....	.....	10k	0	W	.....	0	0	Cloudy	
Campo, California	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Cape Hatteras, N. Carolina	30.19	766.8	30.20	767.1	45	7.2	76	N	14	6.3	.....	0	0	.....	.....	0	0	Clear	
Cape Henry, Virginia	30.24	768.1	30.27	768.8	44	6.7	68	NW	22	9.8	.....	0	0	.....	.....	0	0	Clear	
Cape Lookout, N. Carolina	30.29	769.4	30.31	769.9	42	5.6	73	N	15	6.7	.....	0	0	.....	.....	0	0	Clear	
Cape May, New Jersey	30.20	767.1	30.23	767.8	41	5.0	63	NW	26	11.6	.....	0	0	.....	.....	0	0	Clear	
Charleston, South Carolina	30.30	769.6	30.37	771.4	43	6.1	75	N	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Cheyenne, Wyoming	23.93	607.8	29.87	758.7	37	2.8	63	W	8	3.6	.....	10c	0	Calm	.....	0	0	Cloudy	
Chicago, Illinois	29.50	749.3	30.22	767.6	37	2.8	80	SW	9	4.0	.....	0	0	.....	.....	0	0	Clear	
Cincinnati, Ohio	29.68	753.9	30.36	771.1	30	— 1.1	89	SE	4	1.8	.....	0	Fog	.....	SE	0	0	Foggy	
Cleveland, Ohio	29.60	751.8	30.37	771.4	32	0.0	69	S	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Concho, Texas	28.18	715.8	29.83	757.7	36	2.2	45	S	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Corsicana, Texas	29.78	756.4	30.28	769.1	38	3.3	90	S	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Davenport, Iowa	29.55	750.6	30.21	767.3	37	2.8	70	Calm	0	0	.....	0	Sm'e	.....	Calm	0	0	Clear	
Denison, Texas	29.43	747.5	30.27	768.8	41	5.0	82	SE	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Denver, Colorado	24.66	626.4	29.88	758.9	39	3.9	39	S	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Detroit, Michigan	29.56	750.8	30.27	768.8	32	0.0	79	SW	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Dodge City, Kansas	29.31	744.7	29.85	758.1	35	1.7	70	S	6	2.7	.....	2c	0	Calm	.....	0	0	Clear	
Dubuque, Iowa	29.43	747.5	30.16	766.1	33	0.6	79	S	1	0.4	.....	0	2s	.....	Calm	0	0	Fair	
Duluth, Minnesota	29.34	745.2	30.04	763.0	33	0.6	79	NE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Eagle Pass, Texas	29.39	746.5	30.17	766.3	37	2.8	71	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Eastport, Maine	29.92	760.0	29.99	761.7	25	— 3.9	81	N	17	7.6	.....	.....	10s	.....	N	0	0	Cloudy	
Erie, Pennsylvania	29.53	750.0	30.27	768.8	37	2.8	80	S	6	2.7	.....	0	Sm'e	.....	.....	0	0	Clear	
Escanaba, Michigan	29.47	748.5	30.15	765.8	28	— 2.2	77	W	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Florence, Arizona	28.24	717.3	29.84	757.9	55	12.8	38	E	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Fort Bayard, New Mexico	24 00	609.6	30.00	762.0	40	4.4	40	NW	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Fort Craig, New Mexico	25.50	647.7	.....	.....	32	0.0	79	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Fort Gibson, Indian Ter	29.66	753.4	30.22	767.6	39	3.9	72	S	6	2.7	.....	2c	0	W	.....	0	0	Fair	
Fort Griffin, Texas	28.87	733.3	30.21	767.3	34	1.1	79	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	28.89	733.8	30.05	763.3	36	2.2	90	S	.....	.....	5	0	0	.....	.....	0	0	Clear	
Galveston, Texas	30.27	768.8	30.31	769.9	55	12.8	80	SE	6	2.7	.....	2ck	2s	W	Calm	0	0	Fair	
Grand Haven, Michigan	29.51	749.5	30.17	766.3	44	6.7	75	SW	14	6.3	.....	0	0	.....	.....	0	0	Clear	
Indianapolis, Indiana	29.53	750.0	30.36	771.1	33	0.6	79	S	1	0.4	.....	0	Sm'e	.....	.....	0	0	Clear	
Indianola, Texas	30.22	767.6	30.25	768.3	62	16.7	72	SE	7	3.1	.....	.....	10cs	.....	SE	0	0	Cloudy	
Jacksboro, Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Jacksonville, Florida	30.32	770.1	30.35	770.9	43	6.1	75	N	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Keokuk, Iowa	29.56	750.8	30.20	767.1	40	4.4	56	S	8	3.6	.....	0	Haze	.....	Calm	0	0	Clear	
Key West, Florida	30.14	765.5	30.18	766.6	66.0	18.9	78	N	18	8.0	.....	1cs	0	Calm	.....	0	0	Clear	
Kittyhawk, North Carolina	30.26	768.6	30.29	769.4	40	4.4	91	NW	12	5.4	.....	0	0	.....	.....	0.01	0.3	Clear	
Knoxville, Tennessee	29.38	746.2	30.46	773.7	30	— 1.1	79	Calm	0	0	.....	.....	0	Fog	.....	0	0	Dense fog	
La Crosse, Wisconsin	29.33	745.0	30.10	764.5	33	0.6	70	S	8	3.6	.....	0	0	.....	Calm	0	0	Clear	
La Mesilla, New Mexico	26.13	663.7	30.28	769.1	34	1.1	62	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Laredo, Texas	.....	.....	.....	.....	45	7.2	68	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Leavenworth, Kansas	29.25	742.9	30.12	765.0	36	2.2	80	S	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Los Angeles, California	29.47	748.5	29.80	756.9	54	12.2	86	Calm	0	0	.....	.....	10s	.....	Calm	0.45	11.4	Cloudy	
Louisville, Kentucky	29.80	756.9	30.39	771.9	35	1.7	79	SE	2	0.9	.....	0	Fog	.....	SE	0	0	Foggy	
Lynchburg, Virginia	29.60	751.8	30.31	769.9	42	5.6	42	W	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Maricopa Wells, Arizona	.....	.....	.....	.....	41	5.0	49	E	.....	.....	.....	0	5s	.....	Calm	0	0	Fair	
Marquette, Michigan	29.40	746.7	30.13	765.3	33	0.6	69	W	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Mason, Texas	28.54	724.9	30.38	771.6	37	2.8	91	Calm	0	0	.....	.....	10s	.....	.....	0	0	Foggy	
Memphis, Tennessee	30.06	763.5	30.40	772.1	32	0.0	89	Calm	0	0	.....	5c	Sm'e	SW	Calm	0	0	Fair	
Milwaukee, Wisconsin	29.48	748.8	30.20	767.1	32	0.0	79	W	10	4.5	.....	0	Sm'e	.....	Calm	0	0	Clear	
Mobile, Alabama	30.35	770.9	30.40	772.1	36	2.2	90	N	4	1.8	.....	5cs	0	Calm	.....	0	0	Fair	
Montgomery, Alabama	30.17	766.3	30.42	772.7	36	2.2	85	N	2	0.9	.....	0	Sm'e	.....	Calm	0	0	Clear	
Morgantown, West Virginia	29.30	744.2	30.42	772.7	31	— 0.6	79	Calm	0	0	.....	0	Haze	.....	.....	0	0	Clear	
Mt. Washington, N. H.	23.55	598.2	29.91	759.7	18	— 7.8	84	NW	72	32.2	.....	0	Fog	.....	NW	0	0	Foggy	
Nashville, Tennessee	29.85	758.2	30.43	772.9	28	— 2.2	100	NE	1	0.4	.....	.....	Fog	.....	Calm	0	0	Foggy	
New Haven, Connecticut	30.01	762.2	30.13	765.3	36	2.2	70	N	5	2.2	.....	Haze	Haze	.....	.....	0	0	Clear	
New London, Connecticut	30.08	764.0	30.13	765.3	37	2.8	71	Calm	0	0	.....	0	Haze	.....	Calm	0	0	Clear	
New Orleans, Louisiana	30.30	769.6	30.37	771.4	46	7.8	77	NE	5	2.2	.....	5cs	0	W	.....	0	0	Fair	
Newport, Rhode Island	30.00	762.0	30.18	766.6	37	2.8	72	W	6	2.7	.....	0	0	.....	.....	Inap.	Inap.	Clear	
New York, New York	30.06	763.5	30.11	764.8	35	1.7	70	NW	11	4.9	.....	0	Fog	.....	.....	0	0	Clear	
Norfolk, Virginia	30.24	768.1	30.30	769.6	39	3.9	71	W	6	2.7	.....	0	0	.....	.....	Inap.	Inap.	Clear	
North Platte, Nebraska	26.95	684.5	29.50	751.6	29	— 1.7	88	N	9	4.0	.....	0	0	.....	.....	0	0	Clear	
Olympia, Washington Ter.	29.87	758.7	29.91	759.7	42	5.6	91	W	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Omaha, Nebraska	28.87	733.3	29.98	761.5	36	2.2	80	S	3	1.3	.....	0	5s	.....	S	0.13	3.3	Fair	
Oswego, New York	29.86	758.4	30.19	766.8	43	6.1	75	S	5	2.2	.....	2c	2s	Calm	Calm	0	0	Fair	
Pembina, Dakota	28.98	736.1	29.84	757.9	26	— 3.3	88	W	10	4.5	.....	.....	10s	.....	NW	0	0	Cloudy	
Philadelphia, Pennsylvania	30.18	766.6	30.24	768.1	38	3.3	71	SE	8	3.6	.....	0	5s	.....	Calm	0	0	Clear	
Phœnix, Arizona	.....	.....	.....	.....	55	12.8	33	W	12	5.4	.....	0	Fog	.....	Calm	0	0	Clear	
Pike's Peak, Colorado	17.81	452.4	30.02	762.5	15	— 9.4	65	E	.....	.....	.....	0	8ks	.....	S	0	0	Cloudy	
Pioche, Nevada	23.80	604.5	29.57	751.1	42	5.6	27	SW	28	12.5	.....	5k	5s	SW	SW	0	0	Cloudy	
Pittsburg, Pennsylvania	29.51	749.5	30.37	771.4	31	— 0.6	79	S	4	1.8	.....	.....	10s	.....	Calm	0	0	Cloudy	
Port Huron, Michigan	29.54	750.3	30.35	768.3	30	— 1.1	89	SW	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Portland, Maine	29.99	761.7	30.04	763.0	33	0.6	79	SW	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Portland, Oregon	29.93	760.2	30.02	762.5	43	6.1	91	NW	2	0.9	.....	0	Fog	.....	.....	0	0	Clear	
Prescott, Arizona	24.56	623.8	29.92	760.0	52	11.1	23	S	2	0.9	.....	0	0	.....	.....	0.03	0.8	Clear	
Punta Rassa, Florida	30.22	767.6	30.24	768.1	56	13.3	68	SE	.....	.....	.....	.....	.....	.....	.....	0	0	Clear	
Red Bluff, California	29.51	749.5	29.87	758.7	44	6.7	92	N	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Rochester, New York	29.54	750.3	30.18	766.6	37	2.8	80	N	6	2.7	.....	0	0	.....	.....	0.05	1.3	Clear	
Roseburg, Oregon	29.46	748.3	30.05	763.3	38	3.3	90	W	6	2.7	.....	10ck	0	W	.....	0	0	Cloudy	
								Calm	0	0	.....	10s	Fog	Calm	Calm	0.08	2.0	Cloudy	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Sacramento, California	29.78	756.4	29.86	758.4	47.5	8.6	96	NW	3	1.3	.....	0	1ks	.....	N	0.16	4.1	Clear.....	
St. Louis, Missouri	29.72	754.9	30.33	770.4	35	1.7	70	S	6	2.7	.....	0	Sm'e	.....	.....	0	0	Clear.....	
St. Marks, Florida	30.35	770.9	30.37	771.4	36	2.2	95	N	2	0.9	.....	0	0	.....	.....	0	0	Clear.....	
St. Paul, Minnesota	29.10	739.1	29.96	761.0	33	0.6	79	SE	4	1.8	.....	0	0	.....	.....	0	0	Clear.....	
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salt Lake City, Utah	25.41	645.4	29.74	755.4	48	8.9	43	S	4	1.8	.....	5cs	2s	Calm	Calm	0	0	Fair.....	
San Antonio, Texas	29.52	749.8	30.12	765.0	44	6.7	100	E	1	0.4	.....	.....	Fog	.....	.....	0	0	Foggy	
San Diego, California	29.80	756.9	29.87	758.7	58	14.4	81	W	14	6.3	.....	.....	10s	.....	W	0.03	0.8	Cloudy	
Sandusky, Ohio	29.61	752.1	30.32	770.1	33	0.6	79	SW	10	4.5	.....	0	Sm'e	.....	Calm	0	0	Clear.....	
Sandy Hook, New Jersey	30.16	766.1	30.16	766.6	38	3.3	81	W	12	5.4	.....	0	Haze	.....	.....	0	0	Clear.	
San Francisco, California	29.83	757.7	29.90	759.4	52	11.1	66	NW	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Santa Fé, New Mexico	23.26	590.8	29.80	756.9	33.5	0.8	46	E	4	1.8	.....	0	Haze	.....	.....	0	0	Clear.	
Savannah, Georgia	30.29	769.4	30.39	771.9	41	5.0	74	N	7	3.1	.....	0	0	.....	.....	0	0	Clear	
Shreveport, Louisiana	30.16	766.1	30.40	772.1	38	3.3	90	S	2	0.9	.....	5c	0	Calm	.....	0	0	Fair.....	
Smithville, North Carolina	30.31	769.9	30.35	770.9	39	3.9	82	N	6	2.7	.....	0	0	.....	.....	0	0	Clear.....	
Springfield, Massachusetts	29.93	760.2	30.06	763.5	31	—0.6	79	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.	
Stanwix, Arizona	.....	.....	.....	.....	46	7.8	33	SW	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Stockton, Texas	26.99	685.5	29.99	761.7	38	3.3	63	S	8	3.6	.....	0	0	.....	.....	0	0	Clear.....	
Thatcher's Island, Mass	30.01	762.2	30.07	763.8	34	1.1	69	N	20	8.9	.....	1k	0	N	.....	0	0	Clear.	
Toledo, Ohio	29.58	751.3	30.29	769.4	34	1.1	69	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.....	
Tucson, Arizona	27.40	696.0	29.96	761.0	49	9.4	42	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear.....	
Tybee Island, Georgia	30.32	770.1	30.36	771.1	47	8.3	77	N	16	7.2	.....	0	0	.....	.....	0	0	Clear	
Umatilla, Oregon	29.80	751.8	.....	.....	37	2.8	80	SE	4	1.8	.....	0	0	.....	.....	0	0	Clear.	
Vicksburg, Mississippi	30.14	765.5	30.42	772.7	36	2.2	71	E	6	2.7	.....	2c	Fog	SW	.....	0	0	Fair.....	
Virginia City, Montana	24.04	610.6	29.52	749.8	38	3.3	38	SE	6	2.7	.....	0	5s	.....	Calm	0	0	Fair.....	
Visalia, California	29.48	748.8	29.85	758.2	51	10.6	93	NW	5	2.2	.....	.....	10n	.....	Calm	0.36	9.1	Light rain...	
Washington, D. C	30.19	766.8	30.30	769.6	34.5	1.4	70	NW	4	1.8	.....	0	Sm'e	.....	Calm	0	0	Clear.	
Wickenburg, Arizona	.....	.....	.....	.....	40	4.4	57	N	.....	.....	.....	8c	0	Calm	.....	0	0	Fair.....	
Wilmington, N. Carolina	30.25	768.3	30.33	770.4	39	3.9	71	N	5	2.2	.....	0	0	.....	.....	0	0	Clear.....	
Winnemucca, Nevada	25.41	645.4	29.77	756.1	39	3.9	81	S	12	5.4	.....	.....	10s	.....	S	0.02	0.5	Cloudy.....	
Wood's Holl, Mass	30.05	763.3	30.10	764.5	35	1.7	61	N	16	7.2	.....	2c	0	Calm	.....	0	0	Fair	
Yankton, Dakota	28.58	725.9	29.90	759.4	35	1.7	80	S	5	2.2	.....	0	0	.....	.....	0	0	Clear.....	
Yuma, Arizona	29.69	754.1	29.86	758.4	47	8.3	24	NW	6	2.7	.....	5k	0	NW	.....	0	0	Fair.....	
SUB-SERIES.																			
York Factory, B. A	30.09	764.3	29.15	765.8	22.0	—5.6	93	SE	13	5.8	.....	.....	9s	.....	.....	0.39	9.9	Threatening	J. Fortescue, W. Wood.
Havana, Cuba, W. I	30.08	764.0	30.10	764.5	72	22.2	71	N	6	2.7	.....	8k	4ks	Calm	N	0	0	Cloudy	Chas. Hasselbrink.
Kingston, Jamaica, W. I	30.11	764.8	30.12	765.0	78	25.6	86	Calm	0	0	.....	8c	8n	.....	NE	0.13	3.3	.....	James Gall.
Navassa, W. I	29.80	756.9	29.88	758.9	80	26.7	.....	N	12	5.4	.....	.....	.....	.....	.....	0.53	13.5	Cloudy.....	F. M Everett.
St. Thomas, W. I	.....	.....	.....	.....	80	26.7	91	E	2	0.9	.....	2c	5ks	NE	.....	0.07	1.8	Clearing.....	G. O. Gellich.
Paramaribo, D. Guiana, S. A	.....	.....	29.96	761.0	84	28.9	75	E	.....	.....	2	5k	7ks	E	.....	0.130	3.30	Fair.....	C. J. Hering.
Batavia, Dutch Guiana, S. A	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Dr. H. Groot.
Medellin, Colombia, S. A	25.20	640.1	.....	.....	67.0	19.4	87	E	.....	.....	1	.....	10ks;s	.....	.....	0.01	0.3	Cloudy.....	Thomas Herran.
Honolulu, Oahu, H. I	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Daniel Smith.
Makawao, Maui, H. I	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters: Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.5 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.: Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.: Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Ploche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.: Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.67 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.16 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Ploche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.: Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not certain. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

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

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

STATIONS AND VESSELS.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard Mare Island, Cal.	29.84	757.9	46	7.8	45	7.2	92	NW	8	3.6	.....	.....	0	.....	.....	0.17	4.3	.....	.....	Clear	
Navy Yard, Pensacola, Fla.	30.42	772.7	.....	.....	45	7.2	76	NNE	4	1.8	.....	.....	3	.....	.....	0	0	.....	.....	D. clouds.....	
Navy Yard, Portsmouth, N.H	30.25	768.3	56	13.3	29	— 1.7	78	W	2	0.9	.....	.....	.....	.....	.....	0	0	.....	.....	Clear	
Naval Hospital, Yokohama, Japan.....	30.16	766.1	55	12.8	48	8.9	78	Calm	.....	.....	0	.....	1c	.....	SW	0	0	.....	.....	Fair	
Adams. S 51° 52′ W. 67° 00′.....	29.82	757.4	45	7.2	45	7.2	84	W	.....	.....	2	.....	9	.....	W	0	0	Long	W	D. clouds.....	
Alert, Yokohama, Japan.....	30.34†	770.6†	55	12 8	55	12.8	100	W	.....	.....	1	.....	1	.....	W	.....	.....	Smooth	.....	Hazy..	
Alliance, Constantinople, Turkey.	30.24	768.1	64	17.8	61	16.1	71	SE	.....	.....	0–1	.....	1	.....	SE	.....	.....	.....	.....	Pleasant.....	
Ashuelot. Tientsin, China.....	30.14	765.5	50	10.0	39	3.9	46	WNW	.....	.....	1	.....	0	.....	.....	.....	.....	Smooth	.....	Blue sky.....	
Canonicus, New Orleans, La.....	30.31	769.9	41	5.0	46	7.8	84	E	.....	.....	2	.....	3	.....	.....	.....	.....	.....	.....	Pleasant.....	
Colorado, New York, N. Y.....	30.29	769.4	77	25.0	41	5.0	74	NW	9	4.0	.....	.....	5	.....	NW	0	0	.....	.....	Foggy.....	
Despatch, Constantinople, Turkey.	30.24	768.1	64	17.8	57	13.9	63	S&E	.....	.....	1	.....	2	.....	Calm	.....	.....	.....	.....	Clear.....	
Essex. Cape Palmas, Guinea....	29.90	759.4	82	27.8	82	27.8	??	W	.....	.....	1	.....	3	.....	E	.....	.....	Long	SW	D. clouds.....	
Franklin, Norfolk, Va.....	30.38	771.6	70	21.1	43	6.1	70	NW	8	3.6	.....	.....	1	.....	NW	0	0	.....	.....	Clear.....	
Gettysburg, Malta	29.90‡	759.4‡	.....	.....	74	23.3	??	S&E	.....	.....	0–1	.....	2	.....	Calm	0	0	.....	.....	D. clouds.....	
Guard, N. 37° 19′, W. 47° 33′.....	30.23	767.8	73	22.8	74	23.3	81	SSW	.....	.....	4	.....	9	.....	SW	.....	.....	Moderate.	SW	Squally	
Marion, Smyrna, Turkey.....	30.13	765.3	63	17.2	64	17.8	48	W	.....	.....	1	.....	8	.....	W	0	0	Smooth	NW	D. clouds.....	
Michigan, Erie, Pa.....	29.72	754.9	54	12.2	37	2.8	71	WSW	.....	.....	1	.....	0	.....	.....	.....	.....	.....	.....	Fair.....	
Monocacy, Yokohama, Japan.....	30.17	766.3	56	13.3	52	11.1	86	SW	.....	.....	0–1	.....	1	.....	.....	.....	.....	.....	.....	D. clouds.....	
Monongahela, N. 38° 00′, E. 7° 14′.....	29.94	760.5	68	20.0	69	20.6	75	S	.....	.....	2–3	.....	ck	.....	.....	.....	.....	Smooth	.....	D. clouds.....	
New Hampshire, Port Royal, S.C.....	30.46	773.7	.....	.....	43	6.1	75	N	11	4.9	.....	.....	10	.....	Calm	0	0	.....	.....	Blue sky.....	
Omaha, Callao, Peru.....	30.04	763.0	72	22.2	70	21.1	85	SE	4	1.8	.....	.....	10	.....	SE	0	0	Smooth	.....	Dull	
Onward, Callao, Peru.....	30.02	762.5	72	22.2	69	20.6	80	SE	.....	.....	3	.....	10	.....	.....	.....	.....	Long	W	D. clouds.....	
Ossipee. Norfolk, Va.....	30.37	771.4	73	22.8	51	10.6	65	N	.....	.....	4	.....	0	.....	.....	.....	.....	.....	.....	Blue sky.....	
Palos, Shanghai, China.....	30.19	766.8	64	17.8	61	16.1	88	NNW	.....	.....	2–3	.....	9	.....	N&W	.....	.....	.....	.....	Cloudy.....	
Pensacola, San Francisco, Cal.....	29.98	761.5	.....	.....	55	12.8	87	N&W	.....	.....	0–1	.....	0	.....	.....	.....	.....	.....	.....	Clear...	
Plymouth, Norfolk, Va.....	30.28	769.1	44	6.7	44	6.7	68	N	.....	.....	2	.....	0	.....	.....	.....	.....	.....	.....	Clear	
Ranger, Shanghai, China.....	30.30	769.6	.....	.....	65	18.3	94	N	.....	.....	3	.....	10	.....	Calm	.....	.....	.....	.....	Cloudy.....	
Rio Bravo, Brownsville, Texas.....	30.15	765.8	.....	.....	54	12.2	93	ESE	.....	.....	1	.....	6	.....	SSE	.....	.....	.....	.....	Hazy.....	
Santee, Annapolis, Md.....	30.33	770.4	59	15.0	38	3.3	63	NW	.....	.....	2	.....	2	.....	.....	0	0	.....	.....	Clear	
Saratoga, Hampton Roads, Va.....	30.75†	781.0†	.....	.....	51	10.6	??	NNW	.....	.....	3	.....	2	.....	N	0	0	.....	.....	Fair.....	
St. Louis, League Island, Pa	30.10	764.5	39	3.9	38	3.3	81	WNW	6	2.7	.....	.....	1	.....	Calm	0	0	.....	.....	Clear.....	
Swatara, Hampton Roads, Va.....	30.34	770.6	.....	.....	47	8.3	70	N	.....	.....	2	.....	0	.....	.....	.....	.....	.....	.....	Blue sky.....	
Tennessee, Yokohama, Japan.....	30.26	768.6	62	16.7	51	10.6	72	NNW	4	1.8	.....	.....	0	.....	.....	0	0	None	.....	Hazy.....	
Trenton, Villefranche, France.....	29.84	757.9	64	17.8	62	16.7	83	SW	2	0.9	.....	.....	10	.....	SW	0.75	19.1	.....	.....	Raining.....	
Vandalia, Villefranche, France.,...	29.73	755.1	60	15.6	60	15.6	94	Calm	0	0	.....	.....	10	.....	wsw	.....	.....	.....	SSE	Raining.....	
Wabash, Boston, Mass.....	30.09	764.3	42	5.6	32	0.0	69	NW	5	2.2	.....	.....	0	.....	.....	0	0	.....	.....	Blue sky.....	
Wyoming, Washington, D. C.....	30.47†	773 9†	.....	.....	39	3.9	.....	WSW	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	Hazy..	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. ‡ Barometer corrected for instrumental error and reduced to sea-level.

UNITED STATES MARINE SERIES.

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

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Character.	Direction from—		
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama, N. 12° 05′ 24″, W. 87° 38″			29.72	754.9	81	27.2	62	N			5		4		E	Moderate.	NE	D. clouds	Capt. Howard.
S. S. City of Peking, N. 39° 58′, E. 178° 13′			29.71*	754.6*	60	15.6	82	WSW			8		8		W	Rough	WSW	Raining	Lt. Z. L. Tanner, U.S.N.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio, N. 30° 12′, W. 166° 52′			30.27	768.8	71	21.7		WSW			5					Long	W	Blue sky	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

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

WHITE STAR LINE MARINE SERIES.

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

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

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

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

S. S. Belgic, N. 34° 47′, E. 142° 26′			30.24†	768.1†				WNW			6		Heavy		WNW	Short	WNW	Overcast	Capt. John Metcalf.
S. S. Gaelic																			Capt. W. H. Kidley
S. S. Oceanic, N. 32° 24′, E. 134° 45′			30.04	763.0	65	18.3	73	Var.			3–4		3		Var.	Rough	SW; NW	Raining	Capt. H. Parsell.

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

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

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

S. S. Baltimore																			Capt. H. Andressen
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig																			Capt. K. Undütsch.
S. S. Nürnberg, N. 48° 56′, W. 9° 47′			28.77	730.7	63.0	17.2	80	WNW			7		kn		NW	High	WNW	Raining	Capt. A. Jaeger.
S. S. Ohio, N. 47° 24′, W. 31° 31′			29.94	760.5	50.0	10.0	64	NW			6		k		W	Rough	WNW	Clearing	Capt. G. Meyer.

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

UNITED STATES MARINE SERIES.—CONTINUED.

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

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Lo'wr	Upper.	Lower.	Character	Direction From—		
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second	0—10.	0—10.	0—10.	From—	From—				
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, N. 42° 09', W. 61° 41'			29.76*	755.9*	54	12.2	87	NE			8		10			Heavy	NNE	Cloudy	Captain Sargent.
S. S. Ohio. Liverpool			28.55	725.2	48	8.9	92	SSE			3		10		S			Gloomy	Captain Morrison.
S. S. Pennsylvania, N. 45° 04', W. 55° 48'			29.36†	745.7†	44	6.7	100	ENE			6		10		ENE	Mod'ate	ENE	Raining	Captain Harris.

NOTE.—The originals give the barometer as read off; the wind-force by the scale 0 to 12. *Aneroid; correction for elevation applied, instrumental error not known.
†Corrected for temperature and elevation, instrumental error not known.

RED STAR LINE MARINE SERIES.

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

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

ALLAN LINE MARINE SERIES.

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

S. S. Hibernian																			Capt. W. Richardson.
S. S. Scandinavian																			

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, Portsmouth, N. H.			30.09	764 3	37	2.8	90	WNW	3	1.3			0					Clear	Capt. James Jorgensen.

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

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

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

Albert J. Myer

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

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON NOVEMBER 13, 1877.

7:35 A. M. WASHINGTON mean time.

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

ALGERIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours	.....	.....	30.02	762.5	64.4	18.0	68	W	.....	.....	3	.....	7	.....	.....	0.189	4.8	Very cloudy	Michel.
Algiers	.....	.....	29.82	757.4	63.7	17.6	72	NW	.....	.....	1	.....	6	.....	.....	0.417	10.6	Cloudy	Peter.
La Calle	.....	.....	29.79	756.6	68.4	20.2	74	NNW	.....	.....	1	.....	8	.....	.....	0.315	8.0	Very cloudy	Fleury.
Tunis	.....	.....	29.76	755.9	76.1	24.5	37	W	.....	.....	3	.....	5	.....	.....	0	0	Cloudy	Jacques.
Sfax	.....	.....	29.87	758.7	66.2	19.0	.....	W	.....	.....	1	.....	7	.....	.....	0	0	Very cloudy	Husson.
Saida	.....	.....	30.04	763.0	53.1	11.7	93	WNW	.....	.....	3	.....	7	.....	.....	0.362	9.2	Very cloudy	Millot.
Tebessa	.....	.....	29.80	756.3	.....	.....	.....	SSW	.....	.....	5	.....	9	.....	.....	.....	.....	Covered	Bourgeois.
Geriville	.....	.....	29.97	761.2	50.0	10.0	74	NNW	.....	.....	4	.....	4	.....	.....	0.079	2.0	Cloudy	Lemaillot.
Laghouat	.....	.....	29.96	760.9	53.6	12.0	76	W	.....	.....	2	.....	8	.....	.....	0	0	Cloudy	Guyot.
Biskra	.....	.....	29.84	757.9	65.8	18.8	63	N	.....	.....	2	.....	10	.....	.....	0.059	1.5	Covered	Kuntz.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

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

AUSTRIAN SERIES.

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

Agram	29.24	742.7	29.78	756.3	65.1	18.4	60	SW	.....	.....	3	.....	10	.....	.....	0	0	.....	Prof. Ivan Stozir
Cracow, I. R. Observatory	29.10	739.2	29.86	758.5	56.8	13.8	67	NE	.....	.....	2	.....	9	.....	.....	0	0	.....	Dr. Wierzbiski.
Eperies	29.11	739.4	30.00	761.9	50.5	10.3	71	S	.....	.....	1	.....	9s	.....	Calm	0	0	.....	Julius Mikolik.
Gratz	28.54	724.8	29.76	756.0	58.1	14.5	62	S	.....	.....	3	.....	7	.....	.....	0	0	.....	Andreas Rospini.
Hermannstadt	28.63	727.2	30.05	763.3	53.2	11.8	45	SSE	.....	.....	4	.....	4	.....	.....	0	0	.....	Prof. Reissenberger.
Kremsmünster	28.25	717.6	29.59	751.5	48.2	9.0	81	SW	.....	.....	1	.....	8	.....	.....	0	0	.....	Prof. C. Wagner.
Lemberg	29.08	738.6	30.09	764.3	44.2	6.8	82	SE	.....	.....	3	.....	5	.....	.....	0	0	.....	Dr. T. Stanecki.
Poln	29.07	738.5	29.78	756.3	61.0	16.1	88	SE	.....	.....	4	.....	10s	.....	.....	0.004	0.11	.....	I.R.HydrographicOffice.
Szathmar	29.61	752.2	30.08	764.0	56.1	13.4	82	SE	.....	.....	3	.....	9	.....	.....	0	0	.....	Johann Tamas, S. J.
Szegedin	29.66	753.3	29.94	760.4	55.4	13.0	77	SE	.....	.....	4	.....	10	.....	.....	0	0	.....	Karl Stancel.
Trieste	29.68	753.8	29.78	756.4	61.7	16.5	87	SE	.....	.....	1	.....	10	.....	.....	0.252	6.4	Cloudy	P. Busin.
Vienna	29.04	737.6	29.73	755.2	55.0	12.8	68	SE	.....	.....	2	.....	9	.....	.....	0	0	.....	I. R. Central Met. Obs'y.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time, and at Trieste at 7 a. m. of the following day. The elevation of Gratz is 348.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

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

Arlon	28.13	714.5	29.64	752.9	45.7	7.6	79	SW	.....	.....	2	.....	10	.....	.....	0.012	0.3	.....	Prof. M. Passau.
Brussels	29.34	745.3	29.54	750.4	50.4	10.2	76	S	.....	.....	5	.....	1	.....	SW	0.008	0.20	.....	Royal Observatory.
Furnes	29.42	747.2	29.44	747.8	49.6	9.8	77	SW	.....	.....	4	.....	10	.....	.....	0	0	.....	M. E. de Cae.
Maeseyck	29.44	747.8	29.57	751.1	49.5	9.7	83	S	.....	.....	2	.....	10	.....	.....	0	0	.....	M. Pierrot.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

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

BRITISH SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	29.18	741.2	29.28	743.7	47.2	8.4	.....	S	8	3.6	.....	.....	2	.....	.....	0	0	Hazy	W. Boswell.
Ardrossan	29.25	742.9	29.27	743.4	51	10.6	.....	SW	.....	.....	3	.....	5	.....	.....	.....	.....	D. clouds	William McNeil.
Armagh, Observatory	.....	.....	29.37	746.0	47.3	8.5	.....	SSW	9	4.0	.....	.....	7	.....	.....	.....	.....	D. clouds	S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)	.....	.....	29.37	746.0	51.9	11.1	.....	WSW	10	4.5	.....	.....	4	.....	.....	.....	.....	D. clouds	John Hartnup.
Birr Castle, (Parsonstown)	.....	.....	29.44	747.8	44.2	6.8	.....	SSW	.....	.....	1	.....	9	.....	.....	.....	.....	D. clouds	J. Dreyer.
Bradford, Yorkshire	28.98	736.1	29.38	746.2	47.1	8.4	.....	N	.....	.....	1	.....	10	.....	.....	0	0	Overcast	J. McLandsborough.
Bridgetown, (Barbados)	29.88	758.9	29.91	759.7	83.0	28.3	.....	NE	.....	.....	1	.....	3	.....	.....	.....	.....	D. clouds	Pvt. G. W. Roberts, A.
Cambridge, Observatory	.....	.....	29.41	747.0	50.0	10.0	.....	SW	.....	.....	1	.....	7	.....	.....	.....	.....	D. clouds	H. Todd. [H. C.
Cardington	.....	.....	29.43	747.5	47.4	8.6	.....	NW	.....	.....	1	.....	6	.....	.....	.....	.....	D. clouds	John McLaren.
Chatham, School M. E	29.27	743.4	29.40	746.7	53.2	11.8	.....	S	.....	.....	1	.....	5	.....	.....	Blank	Blank	Blue sky	Lt.-Col. C.M.Martin, R.E.
Dartmoor	28.11	714.0	29.59	751.6	44.0	6.7	.....	S	.....	.....	3	.....	6	.....	.....	.....	.....	Showery	Alexander Watt.
Davos Platz (Switzerland)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Francis Redford, M. A.
Donaghadee	29.31	744.5	29.34	745.2	47	8.3	.....	SW	.....	.....	3	.....	3	.....	.....	.....	.....	D. clouds	J. Mac Gowan.
Dover	29.42	747.3	29.44	747.8	51	10.6	.....	WSW	.....	.....	4	.....	6	.....	.....	.....	.....	½ clouded	J. Costello.
Eccles, (near Manchester)	.....	.....	29.38	746.2	49.1	9.5	.....	S	0.4	0.2	.....	.....	10	.....	.....	.....	.....	Misty	Thomas Mackereth.
Falmouth, Observatory	29.28	743.7	29.51	749.5	50.7	10.4	.....	W	.....	.....	3	.....	4	.....	.....	.....	.....	D. clouds	The Staff.
Fort Napier, (Natal)	27.52	699.0	29.70	754.4	92.9	33.8	.....	NW	.....	.....	3	.....	0	.....	.....	.....	.....	Blue sky	Pvt. G. Salmon, A.H. C.
Free Town, (Sierra Leone)	.....	.....	29.88	758.9	88	31.1	.....	Calm	.....	.....	0	.....	3	.....	.....	.....	.....	D. clouds	.....
Galway, Queen's College	.....	.....	.....	.....	45	7.2	.....	SW	.....	.....	2	.....	2	.....	.....	.....	.....	Blue sky	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	29.93	760.2	29.98	761.5	62.9	17.2	.....	N	.....	.....	4	.....	4	.....	.....	.....	.....	D. clouds	Corpl. C. Aitken, A.H.C.
Glasgow, Observatory	29.08	738.6	29.29	744.0	49.0	9.4	.....	SSW	.....	.....	3	.....	3	.....	.....	.....	.....	Blue sky	D. G. Maclean.
Great Yarmouth	29.39	746.5	29.40	746.7	49	9.4	.....	WSW	.....	.....	3	.....	6	.....	.....	.....	.....	Hazy	G. T. Watson.
Greenwich, Royal Obs'y	29.26	743.2	29.44	747.8	45.8	7.7	.....	WSW	.....	.....	1	.....	10	.....	.....	.....	.....	Overcast	The Staff, for G. B. Airy.
Guernsey	29.27	743.4	29.50	749.3	52	11.1	.....	WSW	.....	.....	2	.....	5	.....	.....	.....	.....	Showery	Dr. S. E. Hoskins, F.R.S.
Helston	.....	.....	29.51	749.5	57	13.9	.....	W	.....	.....	4	.....	3	.....	.....	0.20	5.1	D. clouds	M. P. Moyle.
Holyhead	29.36	745.7	29.41	747.0	51	10.6	.....	W	.....	.....	2	.....	3	.....	.....	.....	.....	D. clouds	John Tilston.
Jersey	29.23	742.4	29.52	749.8	53.5	11.9	.....	W	.....	.....	5	.....	7	.....	.....	.....	.....	Raining	J. Fisher.
Kew, Observatory	.....	.....	29.44	747.8	46.2	7.9	.....	SW	8	3.6	.....	.....	9	.....	.....	.....	.....	Hazy	The Staff.
Kingstown	29.37	746.0	29.39	746.5	50	10.0	.....	WNW	.....	.....	5	.....	6	.....	.....	.....	.....	D. clouds	George Mitchell.
Leicester, Museum	.....	.....	29.40	746.7	49.0	9.4	.....	SE	.....	.....	1	.....	9	.....	.....	.....	.....	D. clouds	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.84	757.9	29.92	760.0	71.6	22.0	.....	SE	.....	.....	3	.....	6	.....	.....	.....	.....	D. clouds	S'gt. C. Arbelter. A.H.C
Nairn	29.10	739.1	29.19	741.4	49	9.4	.....	SW	.....	.....	1	.....	5	.....	.....	.....	.....	½ clouded	W. D. Penny.
Nassau, (Bahamas)	.....	.....	30.13	765.3	68.4	20.2	.....	NE	.....	.....	4	.....	10	.....	.....	Blank	Blank	D. clouds	C. S. Duncombe.
Nottingham, Observatory	29.22	742.2	29.41	747.0	46.7	8.2	.....	SSW	.....	.....	1	.....	8c;s	.....	SSW	0.006	0.15	Foggy	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	28.88	733.5	29.40	746.7	48.6	9.2	.....	Calm	.....	.....	0	.....	9	.....	.....	.....	.....	Foggy	Rev. Stephen Whitty
Oxford, Radcliffe Obs'y	.....	.....	29.43	747.5	48	8.9	.....	WSW	.....	.....	1	.....	1	.....	.....	.....	.....	Blue sky	F. Lucas
Plymouth	29.40	746.7	29.48	748.8	49.6	9.8	.....	W	.....	.....	2	.....	10	.....	.....	.....	.....	Showery	John Merrifield.
Roche's Point	29.42	747.3	29.47	748.5	48	8.9	.....	NW	.....	.....	3	.....	2	.....	.....	.....	.....	Fine	W. Kennedy.
Saint Ann's Head	29.26	743.2	29.42	747.3	52	11.1	.....	WNW	.....	.....	2	.....	7	.....	.....	.....	.....	Showery	John C. Walker.
Sandwick Manse, (Orkneys)	.....	.....	29.11	739.4	47.5	8.6	.....	SSW	23	10.3	.....	.....	2	.....	.....	.....	.....	D. clouds	Rev. C. Clouston, LL. D
Scutari, Cemetery, (Turkey)	.....	.....	30.18	766.6	59.2	15.1	.....	NE	.....	.....	1	.....	1	.....	.....	.....	.....	D. clouds	Sergt. W. H. Lyne.
Sheffield	29.20	741.7	29.37	746.0	49.7	9.8	.....	WSW	.....	.....	1	.....	7	.....	.....	0	0	D. clouds	W. F. Cooper.
Silloth Rectory	29.31	744.5	29.34	745.2	51.9	11.1	81	SW	.....	.....	2	.....	3	.....	.....	0	0	D. clouds	Rev. F. Redford, M. A.
Stonyhurst, Observatory	.....	.....	.....	.....	47.0	8.3	.....	SW	.....	.....	1	.....	.....	.....	.....	.....	.....	Misty	Rev. S. J. Perry.
Stornoway, Lewis C., (Hebr.)	.....	.....	29.06	738.1	45	7.2	.....	WSW	.....	.....	4	.....	8	.....	.....	.....	.....	D. clouds	John Smith.
Stratfield Turgiss	29.20	741.7	29.42	747.3	46.6	8.1	.....	SW	.....	.....	1	.....	0	.....	.....	.....	.....	Blue sky	Rev. C. H. Griffith, F.M.S.
Thurso	.....	.....	29.11	739.4	50	10.0	.....	SSW	.....	.....	3	.....	4	.....	.....	.....	.....	D. clouds	John Trotter.
Truro, Royal Institution	.....	.....	29.58	751.3	54	12.2	.....	W	.....	.....	7	.....	4	.....	.....	.....	.....	D. clouds	W. Newcombe.
Valencia, Observatory	.....	.....	29.50	749.3	49.4	9.7	.....	W	26	11.6	.....	.....	4	.....	.....	.....	.....	Squally	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)	.....	.....	.....	.....	48	8.9	.....	W	.....	.....	3	.....	5	.....	.....	0	0	.....	Henry Mercer.
Cape Good Hope, Obs'y	30.06	763.5	30.10	764.5	73.0	22.8	80	S	7	3.1	.....	1	1	.....	.....	.....	.....	.....	The Staff, for E. J. Stone.
Hobart Town, (Tasmania)	.....	.....	29.62	752.3	60.0	15.6	78	N	.....	.....	2	.....	8k	.....	.....	0.01	0.3	Cloudy	Francis Abbott, F.R.A.S.
Leith, Restalrig Park	.....	.....	29.32	744.7	48.0	8.9	.....	SW	.....	.....	2	5cs	.....	.....	.....	0	0	Hazy	Andrew Gibb.
Mauritius, Observatory	29.83	757.7	30.02	762.4	78.0	25.6	70	E	9.0	4.0	.....	3	8	.....	ESE	1.34	34.0	Overcast	C. Meldrum.
Melbourne, Observatory	29.89	759.2	29.98	761.5	55.8	13.2	89	ENE	3	1.3	.....	.....	2	.....	.....	0	0	Fine	R. L. J. Ellery.
Monach L't-house, (Hebrides)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Youngclause.
North Unst, (Shetland Is.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Robert Burnet.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series: 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m.

Marine Series. Vessels.	Sea or swell. Height scale 0—9	Sea or swell. Direction from—		
S. S. Algeria	.....	.....	.....	.....
S. S. Batavia, N. 50° 10', W. 24° 50'	.....	.....	.....	Capt. W. Watson.
Ship Camperdown	6	WNW	D. clouds	Capt. J. E. Mouland.
Brig Catherine	.....	.....	.....	Capt. A. T. Miller.
Barque Celeste	.....	.....	.....	Capt. Adam Smith.
S. S. Hibernia	.....	.....	.....	Capt. D. F. McKechnie
Barque Maroon	.....	.....	.....	Capt. W. R. Cato.
Ship Mikado	.....	.....	.....	Capt. A. T. Brown.
S. S. Seine	.....	.....	.....	Capt. C. C. Prehn.
Barque Sorata	.....	.....	.....	Capt. H. Manning.
Schooner Traveller	.....	.....	.....	Capt. Jas. J. Price.
.....	.....	.....	.....	Capt. Alex. Simpson.
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
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.....	.....	.....	.....	.....

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

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

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

STATIONS.	BAROMETER. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	Low'r 0—10.	Direction. Upper. From—	Lower. From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	Millimeters.	WEATHER.	OBSERVER
San José	26.19	665.2			65.8	18.8	85	NE			6	1c	2csd		E	0	0		Federico Maison.

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

DANISH SERIES.

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

Copenhagen	29.60	751.7	29.64	752.9	48.6	9.2	95	SSE			2		10						
Fanöe	29.55	750.6	29.57	751.1	48.9	9.4	89	SSW			4		5						
Godthaab, (Greenland)	29.17	740.8	29.21	741.9	14.2	—9.9	67	NE			6		1						
Stykkisholm, (Iceland)	28.64	727.4	28.68	728.5	30.7	—0.7	92	NE			7		8						
Thorshavn, (Faröe)	28.70	729.0	28.74	729.9	48.0	8.9	77	SSW			6		10						
Vestervig	29.34	745.1	29.50	749.4	48.6	9.2	96	S			4		4						

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

FRENCH SERIES.

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

Alençon, Normal School	29.04	737.7	29.60	751.7	51.8	11	82	W			1		10		NE	0	0	Covered	Collignon, Director.
Amiens, Normal School	29.41	747.0	29.52	749 8	51.1	10.6	83	SW			2		5		W	0.945	24.0	Cloudy	Bonvarne, Director.
Avignon, Normal School	29.60	751.9	29.68	753.9	56.3	13.5	60	N			2		0			0.020	0.5	Very clear.	Mr. Giraud, Director.
Bar-sur-Seine	29.60	738.9	29.66	753.3	50.0	10.0	69	SW			1		8kn		SW	0.146	3.7	Very cloudy	C. Saillard.
Beaumette Obs'y (Angers)	29.45	748.1	29.61	752.2	54.1	12.3	69	W	5.8	2.6					SW	0.059	1.5		Albert Cheux.
Beauvais	29.27	743.5	29.55	750.6	50.7	10.4	81	S			2		10		SW	0.039	1.0	Covered	Normal School.
Besançon	28.81	731.7	29.71	754.5	50.7	10.4	70	S			2		0			0.480	12.2	Clear	Normal School.
Bourg-en-Bresse	28.83	732.3	29.74	755.4	49.5	9.7	66	SW			2		0			0.736	18.7	Clear.	Normal School.
Bourges, Normal School	29.11	739.5	29.66	753.4	51.8	11	77	WSW			4		5		SE	0.16	4.	Cloudy	A. Wagner, Director.
Brest, Naval Observatory	29.34	745.1	29.55	750.6	51.6	10.9	77	WNW			3		10		WNW	0.226	5.75	Raining	The Staff.
Carcassonne, Normal School	29.37	746.1	29.79	756.6	54.1	12.3	76	W			2		2		W	0	0	Slightly cl'dy	Vateau, Director.
Caen	29.47	748.6	29.55	750.5	52.9	11.6	77	E			2		2		E	0	0	Slightly cl'dy	Normal School.
Chartres, Normal School	28.97	735.9	29.53	750.0	54.6	12.5	72	S			2		8		E	0.177	4.5		Lequin, Director.
Châlons-sur-Marne, N. Sch'l	29.29	743.9	29.61	752.0	49.6	9.8	92	S			3		8ck		S	0.197	5.0	Very cloudy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.82	719.2	29.66	753.3	54.1	12.3	52	SW			3		2		SW	0.012	0.3	Slightly cl'dy	Alluard, Director.
Commercy, Normal School	28.77	730.8	29.67	753.7	48.9	9.4	73	SW			4		2		SW	0	0	Slightly cl'dy	Dr. Goulet, Director.
Commune de Gréasque*	28.54	724.9	29.68	753.9	52.7	11.5	59	NW			4		2		NW	0.067	1.7	¾ covered	V. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	29.41	747.0	29.62	752.4	54.7	12.6	86	SE			1		10			0.457	11.6	Covered	Mouillot, Director.
Le Mans, Normal School	29.27	743.5	29.58	751.2	51.4	10.8	82	SW			4		2		SW	0.146	3.7	Slightly cl'dy	Poirrier, Director.
Lons-Le-Saulnier, N. School	28.75	730.3	29.66	753.3	49.5	9.7	71	W			1		2		E	0	0	Slightly cl'dy	Pin, Director.
Lorient, Naval Observatory	29.50	749.3	29.60	751.8	55.4	13.0	53	SW			3		2		W	0.059	1.5	Recovered	T. Carré, Director.
Mâcon, Normal School	28.97	735.9	29.62	752.4	49.1	9.5	84	Calm			0		0			0.378	9.6	Clear	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	28.64	727.4	30.08	763.9	48.4	9.1	76	SW					5		NE	0	0	Cloudy	Normal School.
Nismes, Normal School	29.02	752.3	29.82	757.4	60.4	15.8	53	NW			1		0			0	0	Clear	Boyer, Director.
Orleans, Normal School	29.17	740.9	29.55	750 5	50.0	10	82	SW			2		8		SW	0.08	2.	Very cloudy	Bernard, Director.
Paris, Observatory	29.33	745.0	29.57	751.0	49.3	9.6	83	SSW			2		10n		SW	0.030	0.75	Rainy	National Observatory.
Privas	28.61	726.7	29.67	753.5	53.6	12	75	SW			2		1		SW	0.28	7.	Clear	Normal School
Rochefort, Naval Obs'y	29.60	751.9	29.63	752.7	52.2	11.2	86	SW			3		1		SW	0.16	4.	Clear	Lt. Decante, Director.
Rouen, Normal School	29.43	747.6	29.52	749.8	50.7	10.4	80	S			2		10		S	0.087	2.2	Covered	F. Lucard, Director.
Tarbes, Normal School																			T. Hugues, Director.
Villefranche	29.01	736.8	29.72	754.8	55.2	12.9	83	SE			1		5		N	0.28	7.	Cloudy	Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.78	756.4	29.81	757.1	77.7	25.4										0.24	6.		L'Abbé Marchesi.
Marseilles, Observatory			29.05	753.0	57.2	14.0	49	NW			3–4		1			0	0		The Staff.
Mont-Louis	24.52	622.8	29.84	757.8	37.8	3.2	48	ESE	13.0	5.83			5		SSW	0.075	1.9		Mr. Falguère.
Nice			29.57	751.0	58.6	14.8	82	SW					10		SE	0.256	6.5	Raining	Dr. A. Niepce.
Paris, Montsouris Obs'y	29.28	743.8	29.56	750.8	48.6	9.2	84	SSW			3–4		10		SW	0.035	0.9	Sprinkling	Marié Davy, Director.
Perpignan			29.70	754.4	58.6	14.8	35	W	3.7	1.67			0			0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.	29.75	527.0			15.4	—9.2		SW			3		10					Snowy	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.14	562.3			21.7	—5.7		SW			2		10			0.787	20.0	Snowy	Gen'l de Nansouty.
Saint Maur, (near Paris)	29.41	747.0	29.53	751.2	49.1	9.5	83	SSW			2		10		SSW;SW	0.067	1.7		E. Renou.
Toulouse, Observatory	29.06	738.2	29.78	756.3	51.1	10.6	60	NW			2		8			0	0		The Staff.
Tours	29.42	747.3	29.62	752.3	53.6	12.0	74	SW			1		6		W	0.091	2.4		C. Marquet.
Versailles, (near Paris)			29.58	751.4	48.9	9.4	92	SW			1		10			0.153	3.94	Drizzling	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.35	770.8	30.37	771.4	46.9	8.3	91	NE	1.6	0.7			0			0.169	4.3	Clear	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; for Montsouris, the barometer reduced to freezing but not to sea-level. At Mirecourt the cloud direction is apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

GERMAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10	Clouds. Amount. Up'er 0-10	Clouds. Amount. Low'r 0-10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Berlin	29.52	749.8	29.69	754.1	52.9	11.6	77	S			1		8			0	0		Prof. Arndt.
Breslau	29.21	741.9	29.73	755.2	57.2	14.4	69	SSE			2		10			0	0		Royal University Obs'y.
Carlsruhe	29.26	743.3	29.69	754.2	47.8	8.8	94	SW			1		10			0	0		Albert Senz.
Cassel	29.09	738.8	29.69	754.0	49.6	9.8	78	S			1		7	SSW		0.020	0.52		Dr. H. Möhl.
Crefeld	29.43	747.6	29.60	751.7	51.4	10.8	77	SE			2		9			0.24	6.		Director Lose.
Emden	29.51	749.6	29.55	750.5	50.5	10.3	79	S			3		5			0.157	4.0		Prof. Prestel.
Frankfort on the Main	29.39	746.4	29.75	755.7	48.4	9.1		SSW			1		10			0.08	2.		Physical Society.
Friedrichshafen	28.30	718.7	29.74	755.5	44.6	7.0	88	SSW			2		10	WSW		0.413	10.5	Light rain	M. Wilhelm.
Hamburg	29.59	751.5	29.66	753.3	52.2	11.2	86	SE			1		10			0.079	2.0	Light fog	Captain F. Hegemann.
Kiel	29.64	752.8	29.65	753.2	50.9	10.5	86	SW			3		10			0.080	2.03		Prof. G. Karsten.
Königsberg, (Prussia)	29.87	758.7	29.95	760.7	44.8	7.1	77	SE										Cloudy	Prof. E. Luther.
Köslin			29.69	754.1	48.7	9.3		SE			4		4			0	0		H. Müller.
Leipsic, Observatory	29.28	743.7	29.70	754.3	52.2	11.2	78	SW			2		9	SSW		0	0		Prof. Bruhns.
Memel, Naval School	29.95	760.6	29.99	761.8	44.8	7.1	71	SE			5		7c;cs					Squally	Reinbrecht von Skalweit.
Neufahrwasser	29.84	758.0	29.86	758.4	46.6	8.1	75	SSE			4		10			0	0		A. Lothes.
Posen	29.49	749.0	29.78	756.4	53.2	11.8	73	SE			6-7		10					Cloudy	Dr. Magener.
Strassburg Obs., (in Alsace	29.16	740.7	29.71	754.7	48.2	9.0	73	Calm			0		9	SW		0.160	3.80		Dr. Schur.
Stuttgart	28.78	731.0	29.73	755.1	45.1	7.3	82	W			1		10	W		0.122	3.1	Raining	Prof. Schoder.
Treves, (Trier)	29.03	737.4	29.55	750.5	52.5	11.4	63	S			5		10			0.002	0.04	Foggy	Prof. Flesch.
Weissenburg, (Bavaria)	28.37	720.6	29.90	759.5	45.5	7.5	82	N	1	0.5			10	NW		0	0	Covered	Dr. Von Bebber.
Wustrow, Naval School	29.66	753.4	29.70	754.4	48.0	8.9	92	WSW			2		10					Foggy	E. F. Schütz.
German Naval Series.																			

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

GREEK SERIES.

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

Athens	29.78	756.5	30.17	766.4	61.5	16.4		NW										½ clear	Dr. J. F. J. Schmidt.

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

INDIAN SERIES.

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

Kurrachee	30.00	761.9	30.04	763.1	86.0	30.0	24	NW	12.0?	5.4?			2			0	0	D. clouds	
Deesa	29.58	751.2	30.05	763.3	85.3	29.6	34	Calm					0			0	0	Blue sky	
Bombay	29.92	759.8	29.95	760.8	83.9	28.8	68	NW	12.0	5.4			0			0	0	Misty	
Poona	27.96	710.1	29.96	761.0	80.0	26.7	47	E					0			0	0	Blue sky	
Lahore	29.32	744.7	30.07	763.8	77.9	25.5	50	NW	3.5	1.6			0			0	0	Blue sky	
Belgaum	27.43	696.8	29.98	761.5	76.0	24.4	60	NE	3.0	1.3			1			0	0	D. clouds	
Bangalore																			
Roorkee	29.12	739.7	30.04	763.0	74.2	23.4	43	SE	1.2	0.5			2			0	0		
Agra	29.45	748.0	30.02	762.5	81.2	27.3	44	NE								0	0		
Trichinopoly																			
Nagpur	28.98	736.2	30.04	763.1	75.9	24.4	45	E	2.4	1.1			0			0	0	Blue sky	
Madras																			
Lucknow	29.66	753.3	30.04	763.0	75.3	24.1	62	W	0.9	0.4			0			0	0	Blue sky	
Allahabad	29.72	754.8	30.03	762.8	74.6	23.7	60	Calm	0.5	0.2			0			0	0	Blue sky	
Patna	29.86	758.3	30.04	763.0	79.9	26.6	51	Calm	0.8	0.4			0			0	0	Blue sky	
Hazaribagh	28.01	711.4	30.05	763.3	73.3	22.9	44	NW	2.4	1.1			0			0	0	Blue sky	
Cuttack	29.96	761.0	30.04	763.1	75.0	23.9	71	Calm	0.9	0.4			4			0	0	D. clouds	
Calcutta (Alipore)	30.02	762.5	30.04	763.0	72.7	22.6	81	N	3.0	1.3			0			0	0	Blue sky	
Goalpara	29.63	752.6	30.03	762.6	75.0	23.9	71	Calm	2.5	1.1			0			0	0	Blue sky	
Chittagong	29.95	760.8	30.05	763.2	77.9	25.5	68	NW	2.2	1.0			4			0	0	Blue sky	
Sibsagar	29.72	754.9	30.07	763.7	68.1	20.1	78	ENE	1.8	0.8			2			0	0	Blue sky	
Rangoon																			
Jubbulpore	28.68	728.5	30.06	763.5	78.0	25.6	51	NE	2.0	0.9			0			0	0	Blue sky	

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

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

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

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

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

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

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

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

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 1—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	21.83	554.4	29.71	754.6	29.5	— 1.4	100	ESE	.....	.....	2	.....	10	.....	.....	8.988*	100.0*	.....	Ab. Dom. Morgini.
Stelvio	21.84	554.8	29.75	755.6	30.4	— 0.9	.....	SSE	.....	.....	4	.....	10	.....	.....	1.032	26.2	.....	Signora Ernesta Manfredi.
Udine	29.33	744.9	29.74	755.4	57.9	14.4	84	E	4.9	2.2	.....	.....	10	.....	.....	0.193	4.9	.....	Prof. Giovanni Clodig.
Padua	29.54	750.2	29.65	753.0	59.7	15.4	74	SE	15.4	6.9	.....	.....	10	SW	.....	0.848	21.4	.....	Prof. Dott. Lorenzoni.
Vicenza	29.47	748.5	29.67	753.5	56.5	13.6	93	N	5.6	2.5	.....	.....	10	S	.....	0.816	20.7	.....	Conte Alm. Da Schio.
Verona	29.42	747.3	29.65	753.0	61.2	16.2	83	ENE	5.6	2.5	.....	.....	10	.....	.....	0.946	24.0	.....	Dott. B. Bertoncelli.
Bergamo	28.34	719.8	29.67	753.7	49.3	9.6	84	NE	.....	.....	6	.....	10	.....	.....	2.657	67.5	.....	Prof. Trionfini Carlo.
Domodossola	28.06	728.0	29.71	754.7	44.4	6.9	96	Calm	.....	.....	0	.....	10	.....	.....	1.535	39.0	.....	Prof. Giuseppe Calza.
Milan	29.13	740.0	29.65	753.2	53.6	12.0	.....	E	.....	.....	2	.....	10	ESE	.....	0.839	21.3	.....	Ab. Gio. Capelli.
Pavia	29.28	743.8	29.64	752.8	51.3	10.7	97	W	.....	.....	2	.....	10	.....	.....	1.398	35.5	.....	Prof. Gio. Cantoni.
Moncalieri	28.71	729.3	29.63	752.7	49.6	9.8	72	NNW	0	0	.....	.....	10	.....	.....	0.130	3.3	.....	Prof. P. F. Denza.
Mondovi	27.71	703.8	29.65	753.1	47.5	8.6	86	ENE	.....	.....	2	.....	9	.....	.....	0.850	21.6	.....	Prof. D. C. Bruno.
Porto Maurizio	29.39	746.6	29.61	752.2	58.3	14.6	80	W	.....	.....	2	.....	10	S	.....	1.118	28.4	.....	Prof. L. Vassallo.
Genoa	29.45	748.0	29.62	752 3	57.2	14.0	82	SE	8.7	3.9	.....	.....	10	SE	.....	2.386	60.6	.....	Prof. G. M. Garibaldi.
Piacenza	29.37	746.0	29.63	752.6	54.3	12.4	94	E	9.8	4.4	.....	.....	10	.....	.....	0.984	25.0	.....	Dott. G Manzi.
Parma	29.33	744.9	29.64	752.9	54.5	12.5	95	ESE	.....	.....	2	.....	10	.....	.....	0.319	8.1	.....	Prof. P. Pigorini.
Florence	29.46	748.3	29.72	754.9	59.0	15.0	85	NW	.....	.....	2	.....	10	.....	.....	0.256	6.5	.....	Cav. F Meucci.
Leghorn	29.50	750.7	29.64	752.9	58.8	14.9	85	W	11.2	5.0	.....	.....	10	SE	.....	0.686	17.4	.....	Prof. P. Monte.
Siena	28.48	723.5	29.70	754.3	59.0	15.0	89	SSE	6.9	3.1	.....	.....	10	S	.....	0.315	8.0	.....	Prof. L. Toscani.
Urbino	28.21	716.4	29.77?	756.2?	59.0	15.0	72	S	.....	.....	2	.....	10	.....	.....	0	0	.....	Prof. P. Serpieri.
Pesaro	29.75	755.7	29.72	755.0	60.1	15.6	72	S	13.0	5.8	.....	.....	10	S	.....	0	0	.....	Prof. Luigi Guidi.
Ancona	29.63	752.6	29.74	755.3	61.5	16.4	59	SE	.....	.....	4	.....	10	.....	.....	0	0	.....	Prof. F. DeBosis.
Grosseto	29.61	752.0	29.72	754.8	63.3	17.4	86	SSE	.....	.....	6	.....	9	S	.....	0.028	0.7	.....	Avv. P. Ponticelli.
Rome	29.61	752.0	29.78	756.5	66.9	19.4	64	S	23.0	10.3	.....	.....	10	.....	.....	0.008	0.2	.....	Prof. P. A Secchi.
Naples, O. U	29.64	752.8	29.84	757.9	68.0	20.0	67	SE	.....	.....	4	.....	9	SSW	.....	0	0	.....	Prof. L. Palmieri.
Lecce	.....	.....	.....	.....	63.7	17.6	79	SSE	21.7	9.7	.....	.....	6	.....	.....	0.024	0.6	.....	Prof. C. De Giorgi.
Cosenza	.....	.....	.....	.....	66.2	19.0	73	NE	3.1	1.4	.....	.....	4	.....	.....	0	0	.....	Prof. F. D. Conti.
Cagliari	.....	.....	.....	.....	67.3	19.6	63	NW	.....	.....	2	.....	10	W	.....	0	0	.....	Prof. A. Pacinotti.
Riposto, (Sicily)	29.81	757.2	29.86	758.4	68.5	20.3	86	SE	.....	.....	6	.....	8	ENE	.....	0	0	.....	Prof. F. Caffero.
Palermo	29.52	749.7	29.77	756 1	75.7	24.3	35	SW	15.0	6.7	.....	.....	9	.....	.....	0	0	.....	Prof. G. Cacciatore.
Caltanissetta	27.94	709.7	29.89	759.1	61.5	16.4	87	SE	.....	.....	4	.....	10	NE	.....	0.272	6.9	.....	Prof. A. Pagani.
Syracuse	29.84	758.0	29.92	759.9	68.4	20.2	89	SW	.....	.....	2	.....	10	SE	.....	0.654	16.6	.....	Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.34	745.2	29.89	759.3	63.1	17.3	80	SW	9.4	4.2	.....	.....	10	.....	.....	0.354	9.0	.....	Prof. F. Brioschi.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,548.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,339.3 ft.; Bergamo 379.6 m., or 1,245.3 ft.; Mondovi, 358 m., or 1,824.2 ft.; Siena, 348.5 m., or 1,143.3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft. *Unmelted snow.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Tokei (Yeddo)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	The Observatory.
Tokei (Yeddo) University	29.86	753.4	29.76	755.9	53	11.7	80	N	6	2.7	.....	.....	10s	.....	.....	0	0	Cloudy	Prof. P. V. Veeder.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the coöperation of Señor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Aguascalientes	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	I. N. Marin, M. D.
Córdoba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	C. Peña, M. D.
Cuernavaca	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	L. Castillo, A. E.
Guadalajara	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. L. Perez.
Guanajuato	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. V. Fernandez.
Leon	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. M. Leal.
Mexico	23.12	587.3	30.27	768.9	43.5	6.4	69	Calm	0	0	.....	1c	0	.....	.....	0	0	Fair	Central Observatory.
Orizaba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	N. N.
Orizaba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	I. Orozco, M. D.
Pabellon, (Aguascalts)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. V. de Leon, M. E.
Puebla	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. B. Gonzalez.
Toluca	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. C. Velazquez.
Tlacotalpam	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. F. R. Bayly.
San Luis Potosi	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	G. Barroeta, M. D.
Vera-Cruz	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. J. Rossell.
Zacatecas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. A. Bonilla, M. E.
Puebla, (Catholic Institute)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	P. Spina. [M. M. D. D.
Morelia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Tena, F. L. Páramo,

NOTE.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,290 m., or 7,512.9 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabell m, 1,921.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,626 m., or 8,611.8 ft.; San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	29.52	749.8	29.52	749.8	50.9	10.5	.....	S	.....	.....	4	.....	.....	.....	.....	0.028	0.7	.....	
Groningen	29.51	749.6	29.57	751.0	49.1	9.5	.....	S	.....	.....	2	.....	.....	.....	.....	0.169	4.3	.....	
Helder	29.50	749.2	29.50	749.2	47.5	8.6	.....	S	.....	.....	4	.....	.....	.....	.....	0	0	.....	
Hellevoetsluis	.....	.....	29.50	749.4	51.3	10.7	78	SSE	.....	.....	4	.....	.....	.....	.....	.....	.....	.....	
Utrecht	29.51	749.6	29.56	750.8	50.5	10.3	84	S	.....	.....	4	.....	5	.....	.....	0	0	Cloudy	H. v d Brink.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instru-m'tal error and temperature. Inches.	Barometer. Corrected for instru-m'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	29.30	744.3	29.36	745.7	47.5	8.6	81	S	21.0	9.4	.....	.....	1	.....	.....	0.362	9.2	.....	
Brönö	29.53	750.1	29.57	751.1	50.0	10.0	50	SSE	31	14	.....	.....	9	.....	.....	0	0	.....	
Christiania	29.46	748.3	29.61	752.0	47.1	8.4	91	SSE	4	2	.....	.....	10	.....	.....	0.843	21.4	Raining	
Tromsö	29.75	755.7	29.80	756 8	39.2	4.0	84	Calm	0	0	.....	.....	5	.....	.....	0	0	.....	
.....																			

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	30.11	764.7	30.30	769.6	62.2	16.8	83	W	12.5	5.6	.....	.....	5	.....	.....	0	0	.....	Dr. J. A. Sampaio.
Campo Major	28.97	735.7	30.00	762.0	55.4	13.0	66	WNW	9.4	4.2	.....	.....	9	WNW	.....	0	0	.....	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.12	765.1	30.21	767.3	68.2	20.1	72	ESE	3.8	1.7	.....	.....	9	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.68	753.9	30.04	763.1	56.5	13.6	68	N	19.9	8.9	.....	.....	8	NW	.....	0.134	3.4	Raining	The Staff.
Ponta Delgada, (Azores)	30.26	768.7	30.34	770.5	64.8	18.2	66	W	3.8	1.7	.....	.....	10	.....	.....	0	0	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m

Naval Series. Vessels.	Sea or swell. Height scale 0–9	Sea or swell. Direction from—	
S. S. India.			A. D. Pedroso, Com'd't. Lt. S. A. P. de Mirando.
.....	.....	.....	.....
.....	.....	.....	.....

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.53	750.1	29.96	760.9	47.5	8.6	71	SE	20	9	.....	.....	10	.....	.....	.....	.....	.....	Astronomical Obs.
Wilna	29.81	757.2	30.24	768.2	43.2	6.2	81	SSE	13	6	.....	.....	10	.....	.....	.....	.....	.....	Astronomical Obs.
Dorpat	30.04	763.1	30.30	769.5	38.5	3.6	87	SSE	9	4	.....	.....	10	.....	.....	.....	.....	.....	Prof. Dr. Weihrauch.
St. Petersburg	30.40	772.2	30.42	772.6	36.3	2.4	85	SE	18	8	.....	.....	10	.....	.....	.....	.....	.....	Central Physical Obs.
Kuopio	29.95	760.7	30.28	769.2	36.3	2.4	93	SSE	34	15	.....	.....	10	.....	.....	Blank	Blank	.....	Ch. Forsten.
Kieff	29.76	755.9	30.42	772.7	40.5	4.7	96	SE	9	4	.....	.....	10	.....	.....	.....	.....	.....	Physical Cabinet.
Nikolaiev	30.32	770.1	30.39	771.9	43.2	6.2	78	E	13	6	.....	.....	10	.....	.....	.....	.....	.....	Kurdukof.
Kertch	30.25	768.4	30.27	768.9	44.6	7.0	87	NE	16	7	.....	.....	10	.....	.....	.....	.....	.....	Lagorio.
Moscow	30.20	767.1	30.75	782.0	29.5	— 1.2	84	S	9	4	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Lugan	30.28	769.2	30.50	774.6	37.9	3.3	68	ENE	13	6	.....	.....	3	.....	.....	Blank	Blank	.....	Meteorological Obs.
Archangel	30.49	774.4	30.51	774.9	33.1	0.6	85	SSW	18	8	.....	.....	10	.....	.....	.....	.....	.....	Ogorodnikof.
Tiflis	28.73	729.8	30.17	766.2	52.3	11.3	59	Calm	0	0	.....	.....	10	.....	.....	.....	.....	Light rain	Physical Observatory.
Astrakhan	30.64	778.2	30.56	776.1	38.5	3.6	54	ENE	13	6	.....	.....	1	.....	.....	.....	.....	.....	Sebastianof.
Kasan	30.57	776.4	30.86	783.8	26.8	— 2.9	70	Calm	0	0	.....	.....	10	.....	.....	.....	.....	.....	Physical Cabinet.
Orenburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Tschernischef.
Ekaterinburg	29.66	753.4	30.70	779.8	13.8	—10.1	93	WNW	9	4	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Nukuss	29.89	759.3	30.13	765.3	47.1	8.4	52	N	13	6	.....	.....	3	.....	.....	.....	.....	.....	
Kasaly	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Bobrof.
Tashkend	28.47	723.0	30.21	767.2	47.5	8.6	98	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Michelson.
Barnaul	29.81	757.1	30.38	771.6	13.1	—10.5	86	SW	0	0	.....	.....	9	.....	.....	.....	.....	.....	Meteorological Obs.
Yeniseisk	29.84	758.0	30.19	766.7	20.1	— 6.6	86	SW	4	2	.....	.....	10	.....	.....	.....	.....	Snowing	Marks.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Usolzef.
Oorga	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Mossin.
Peking, (China)	30.25	768.3	30.39	771.9	33.4	0.8	58	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Physical Observatory.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nikolaievsk, on the Amoor	.....	.....	.....	.....	5.0	—15.0	82	Calm	0	0	.....	.....	88	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Ekaterinburg, 306.4? m., or 1,005.2? ft.; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft.

SPANISH SERIES.

Furnished by the cooperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Rave, Director.
Bilbao, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Manuel de Naveran
Burgos, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Domingo Martin y Perez.
Madrid, Royal Observatory	27.62	701.4	29.85	758.3	50.9	10.5	56	NW	14.1	6.30	.....	0	7	.....	.....	0.043	1.1	Cloudy	The Staff.
Murcia, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Olayo Diaz, Director.
Santiago, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	30.04	763.0	30.11	764.7	69.1	20.6	87	Calm	0	0	.....	0	4k	.....	E	0.185	4.7	Fair	Benito Vines, S. J.
San Fernando, Naval Obs'y.	29.93	760.1	30.02	762.6	62.2	16.8	61	WNW	23.2	10.4	.....	4	5	NW	NW	0	0	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W.I.	.....	.....	29.86	758.4	81.3	27.4	88	SE	1.6	0.71	.....	2s	2k	Calm	E	0.020	0.50	Clear	Leonardo de Tejeda, Chief of Engineers.

NOTE.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the cooperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	30.15	765.8	30.19	766.8	36.9	2.4	.....	S	.....	.....	2	.....	4	.....	.....	0.315	8.0	.....	
Umea	29.81	757.2	29.86	758.5	38.5	3.6	100	S	.....	.....	2	.....	10	.....	.....	0.150	3.8	Raining	
Hernosand	29.94	760.4	29.99	761.7	41.4	5.2	97	SE	.....	.....	6	.....	10	.....	.....	0.350	8.9	Raining	
Stockholm	29.68	753.8	29.85	758.3	43.9	6.6	91	S	.....	.....	6	.....	10	.....	.....	0	0	.....	
Wisby	29.79	756.7	29.85	758.2	44.2	6.8	88	S	.....	.....	6	.....	10	.....	.....	.....	.....	Raining	
Sub-Series.																			
Upsala	29.76	756.0	29.84	757.9	43.3	6.3	96	SSE	15.0	6.7	.....	.....	10	.....	SE	0.114	2.90	.....	Dr. Hildebrandsson.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the cooperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.30	718.8	29.75	755.7	45.7	7.6	67	E	.....	.....	1	.....	9	.....	.....	0.874	22.2	Covered	The Observatory.
Zurich	28.09	713.4	29.76	756.0	42.1	5.6	90	W	.....	.....	1	.....	10	.....	.....	0.224	5.7	Raining	The Observatory.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—For Geneva the corresponding departures from the normal values are: Barometer, —7.5 mm; Thermometer, +0.4 cent.; Relative Humidity, —10 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	30.21	767.4	57.9	14.4	71	NE	8	3.5	.....	.....	2	.....	ENE	0	0	.....	The Observatory.
Fao, (Persian Gulf)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Salonica	.....	.....	30.17	766.2	54.7	12.6	.....	N	.....	.....	1	.....	0	.....	.....	.....	.....	.....	B. Stefanides.
Valona	.....	.....	30.09	764.3	65.1	18.4	.....	S	.....	.....	2	.....	10	.....	.....	0	0	Covered	A. Bertrand.
Varna	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Imperial Observatory.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.97	761.2	30.09	764.2	71.8	22.1	66	NW	.....	.....	1	.....	7ks	.....	SW;NE	0.03	0.8	D. clouds	Prof. C. V. A. Van Dyck.

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	29.97	761.2	30.04	763.0	26.3	— 3.2	88	N	9.0	4.0	.....	3	.....	.....	.....	0	0	.....	Hon. J. Ferguson.
Brockville, Ontario	.....	.....	30.36	771.1	26	— 3.3	.....	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	W. R. Rigg.
*Chatham, N. B	.....	.....	29.96	761.0	29	— 1.7	77	N	22	9.8	.....	2k	8ks	N	N	0	0	Cloudy	G. A. Blair.
Charlottetown, P. E. Island	.....	.....	29.85	758.2	33	0.6	96	NW	13	5.8	.....	.....	10n	.....	Calm	0.250	6.35	Light snow	H. J. Cundall, C. E.
Cornwall, Ontario	30.09	764.3	30.29	769.4	23.7	— 4.6	97	NW	.....	.....	1	0	0	.....	.....	0	0	Bright	James Smith, M. A.
Dalhousie, N. B	30.08	764.0	30.11	764.8	24.3	— 4.3	83	W	.....	.....	2	.....	.....	.....	.....	0	0	Threatening	H. A. Johnson.
Esquimault, B. C	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.11	2.8	.....	W. H. Bevis.
*Father Point, Quebec	.....	.....	30.19	766.8	22	— 5.6	77	NW	30	13.4	.....	0	2s	.....	N	0.04	1.0	Clear	J. McWilliams.
Fredericton, N. B	30.00	762.0	30.06	763.5	30.5	— 0.8	64	NW	12.0	5.4	.....	0	s	.....	.....	0	0	Fair	Prof. Harrison.
*Fort Garry, Manitoba	.....	.....	29.71	754.6	30	— 1.1	94	S	4	1.8	.....	Haze	Haze	S	S	0	0	Hazy	James Stewart.
Goderich, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	H. J. Strang, M. A
Granton, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	James Grant.
*Halifax, N. S	29.10	739.1	30.25	768.3	30.4	— 0.4	96	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	F. Allison, M. A.
Hamilton, Ontario	29.72	754.9	29.80	756.4	33	0.6	90	NW	12	5.4	.....	.....	10n	.....	.....	0	0	Cloudy	Geo. Dickson, M. A
Heart's Content, N. F	29.89	759.2	30.28	769.1	33.2	0.7	88	NE	.....	.....	1	6c	.....	NW	.....	0.19	4.8	Cloudy	E. Weedon.
*Kingston, Ontario	29.40	746.7	29.43	747.5	33	0.6	89	NW	.....	.....	2	.....	10	.....	.....	0.22	5.6	Overcast	S. Woods, M. A.
Little Glace Bay, N. S	30.00	762.0	30.36	771.1	25	— 3.0	85	N	2	0.9	.....	0	0	.....	.....	0	0	Clear	C. H. Rigby.
*Montreal, Quebec	29.68	753.9	29.72	754.9	34.0	1.1	79	N	14	6.3	.....	.....	10n	.....	.....	0	0	Overcast	C. H. McLeod, C. E.
*Parry Sound, Ontario	30.07	763.8	30.28	769.1	29	— 1.7	72	N	9	4.0	.....	0	2s	.....	.....	Inap.	Inap.	Clear	Rev. R. Mosley.
Peterboro, Ontario	29.66	750.8	30.30	769.6	25	— 3.9	87	E	10	4.5	.....	2ck	5ks	E	E	0	0	Fair	J. F. Jeffers, B. A.
Port Dover, Ontario	29.54	750.3	30.34	770.6	24.8	— 4.0	92	Calm	.....	.....	0	2ck	0	.....	.....	0	0	Bright	H. Morgan.
Port Hastings, N. S	29.54	750.3	30.26	768.6	33	0.6	89	N	6	2.7	.....	10ck	0	NW	.....	0	0	Fair	Peter Grant.
Port Stanley, Ontario	29.72	754.9	29.77	756.1	35.9	2.2	.....	NW	4	1.8	.....	.....	.....	.....	.....	0.10	2.5	Snowing	M. Payne.
*Quebec, Quebec	29.56	750.8	30.25	768.3	27	— 2.8	91	N	1	0.4	.....	5ck	0	NW	.....	0	0	Fair	Capt. Ashe, R. N.
*Rockliffe, Ontario	29.89	759.2	30.23	767.8	27	— 2.8	88	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	W. H. McIntyre.
St. John, N. B	29.87	758.7	30.37	771.4	16	— 8.9	100	SW	3	1.3	.....	.....	Fog	.....	.....	0	0	Foggy	G. Murdock, C. E.
*Saugeen, Ontario	29.85	758.2	30.02	762.5	30	— 1.1	89	NW	13	5.8	.....	3k	0	.....	.....	0	0	Fine	K. Stewart.
Stayner, Ontario	29.47	748.5	30.20	767.1	33	0.6	89	SE	2	0.9	.....	2cs	0	.....	.....	0	0	Clear	R. J. Cole.
Stratford, Ontario	.....	.....	30.26	768.6	32	0.0	86	SE	1	0.4	.....	8cs	0	NW	.....	0	0	Fair	C. J. MacGregor, M. A.
*Sydney, C. B	29.91	734.3	30.26	768 6	30.8	— 0.7	98	SE	5.0	2.2	.....	1cs	2s	.....	.....	0	0	Fine	T. C. Hill.
*Toronto, Ontario	29.70	754.4	29.78	756.1	33	0.6	90	NW	7	3.1	.....	.....	10ks	.....	N	0.13	3.3	Cloudy	Magnetic Observatory.
Windsor, N. S	29.91	759.7	30.31	769.9	35	1.7	85	E	4	1.8	.....	.....	10n	.....	E	0	0	Cloudy	Prof. John E. Oram.
Woodstock, Ontario	29.81	757.2	29.91	759.7	33.0	0.6	89	NW	12	5.4	.....	2c	7ck	.....	.....	Inap.	Inap.	Fair	J. Montgomery.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	33.0	0.6	89	NE	.....	.....	.....	.....	10n	.....	.....	0.50	12.7	Snowing	John Delany.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns, N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

1877.—November 13.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rainfall or melted snow in the past 24 hours. Inches.	Rainfall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	30.05	763.3	30.29	769.4	29	— 1.7	78	NW	4	1.8		0	0			Inap	Inap.	Clear	
Alpena, Michigan	29.48	748.8	30.16	766.1	35	1.7	90	S	7	3.1		5ck	2s	NW	Calm	0	0	Fair	
Atlantic City, New Jersey	30.26	768.6	30.28	769.1	37	2.8	80	NW	4	1.8		0	0			0	0	Clear	
Augusta, Georgia	30.21	767.3	30.40	772.1	34	1.1	100	Calm	0	0			Fog		Calm	0	0	Foggy	
Baltimore, Maryland	30.26	768.6	30.31	769.9	41	5.0	57	Calm	0	0		Haze	Fog	Calm	Calm	0	0	Foggy	
Barnegat, New Jersey	30.25	768.3	30.27	768.8	42	5.6	65	NW	12	5.4		0	Haze		Calm	0	0	Clear	
Bismarck, Dakota	27.96	710.2	29.63	752.6	38	3.3	63	NW	8	3.6		0	5s		Calm	0	0	Fair	
Boise City, Idaho	27 34	694.4	30.07	763.8	31	— 0.6	89	SE	2	0.9		0	0			0.11	2.8	Clear	
Boston, Massachusetts	30.04	763.0	30.21	767.3	32.5	0.3	46	NW	15	6.7		0	Haze			0	0	Clear	
Brackettville, Texas	28.78	731.0	29.79	756.7	60	15.6	59	E	4	1.8		0	0			0	0	Clear	
Breckenridge, Minnesota	28.68	728.5	29.70	754.4	29	— 1.7	95	SE	5	2.2			10s		Calm	0	0	Cloudy	
Brownsville, Texas	29.94	760.5	30.01	762.2	67	19.4	90	S	4	1.8			10s		S	0.10	2.5	Cloudy	
Buffalo, New York	29.52	749.8	30.25	768.3	35.0	1.7	90	NE	1	0.4		2c	Sm'e	Calm	Calm	0	0	Fair	
Burlington, Vermont	30.00	762.0	30.28	769.1	30	— 1.1	89	N	6	2.7		0	5s		NW	0	0	Fair	
Cairo, Illinois	29.87	758.7	30.28	769.1	40	4.4	73	Calm	0	0		0	Haze		Calm	0	0	Clear	
Camp Grant, Arizona	28.18	639.6	29.98	761.5	42	5.6	49	NW			2	0	Fog		Calm	0	0	Foggy	
Camp Verde, Arizona	26.81	681.0	30.30	769.6	37	2.8	81	W				0	0			0.05	1.3	Clear	
Campo, California																			
Cape Hatteras, N. Carolina	30.23	767.8	30.24	768.1	48	8.9	77	NW	3	1.3		0	0			0	0	Clear	
Cape Henry, Virginia	30.27	768.8	30.30	769.6	48	8.9	56	NW	10	4.5		0	0			0	0	Clear	
Cape Lookout, N. Carolina	30.30	769.6	30.32	770.1	49	9.4	64	NW	11	4.9		0	0			0	0	Clear	
Cape May, New Jersey	30.26	768.6	30.28	769.1	45	7.2	60	N	10	4.5		0	0			0	0	Clear	
Charleston, South Carolina	30.30	769.6	30.37	771.4	47	8.3	69	N	4	1.8		0	Sm'e		Calm	0	0	Clear	
Cheyenne, Wyoming	23.78	604.0	29.72	754.9	34	1.1	69	N	24	10.7		8ck	2s	E	Calm	0	0	Cloudy	
Chicago, Illinois	29.38	746.2	30.10	764.5	38	3.3	63	SW	9	4.0		0	Fog		Calm	0	0	Clear	
Cincinnati, Ohio	29.60	751.8	30.28	769.1	33	0.6	89	S	2	0.9			Fog		S	0	0	Foggy	
Cleveland, Ohio	29.53	750.0	30.30	769.6	32	0.0	69	SW	7	3.1		0	0			0	0	Clear	
Concho, Texas	28.00	711.2	29.65	753.1	55	12.8	93	SW	16	7.2		0	0			0	0	Clear	
Corsicana, Texas	29.40	746.7	30.05	763.3	40	4.4	64	SE	8	3.6		Haze	2s	Calm	Calm	0	0	Fair	
Davenport, Iowa	29.53	750.0	30.00	762.0	53	11.7	86	Calm	0	0		4c	0	Calm		0	0	Fair	
Denison, Texas	29.20	741.7	30.00	762.0	55	12.8	68	SE	12	5.4			10s		S	0	0	Cloudy	
Denver, Colorado	24.48	621.8	29.70	754.4	33	0.6	61	S	2	0.9		0	5s		Calm	0	0	Fair	
Detroit, Michigan	29.50	749.3	30.20	767.1	35	1.7	70	SW	4	1.8		1cs	0	Calm		0	0	Clear	
Dodge City, Kansas	27.05	687.1	29.30	744.2	44	6.7	92	SE	16	7.2			10s		SE	0	0	Cloudy	
Dubuque, Iowa	29.29	744.0	30.01	762.2	37	2.8	80	S	2	0.9			2s		Calm	0	0	Fair	
Duluth, Minnesota	29.12	739.6	29.80	756.9	38	3.3	90	E	2	0.9			10s		E	0	0	Cloudy	
Eagle Pass, Texas	29.14	740.1	29.88	758.9	54	12.2	93	SE	4	1.8		0	0			0	0	Clear	
Eastport, Maine	29.50	749.3	30.24	768.1	38	3.3	80	NW	19	8.5		0	5s		N	Inap.	Inap.	Fair	
Erie, Pennsylvania	30.05	763.3	30.12	765.0	32	0.0	69	S	5	2.2		8c	Sm'e			0	0	Cloudy	
Escanaba, Michigan	29.36	745.7	30.04	763.0	32	0.0	79	Calm	0	0		2c	0	Calm		0	0	Clear	
Florence, Arizona	28.48	723.4	30.08	764.0	45	7.2	60	Calm				Haze	Haze			0	0	Hazy	
Fort Bayard, New Mexico	23.95	608.3	29.95	760.7	33	0.6	79	NW	6	2.7		0	0			0.05	1.3	Clear	
Fort Craig, New Mexico	25.38	644.6			41	5.0	57	SW	8	3.6		0	0			0.03	0.8	Clear	
Fort Gibson, Indian Ter	29.45	748.0	29.99	761.7	55	11.7	66	S	12	5.4			10s		SW	0	0	Cloudy	
Fort Griffin, Texas	28.61	726.7	29.87	758.7	56	13.3	80	S	8	3.6		0	2s		Calm	0	0	Fair	
Fort St. Michael, Alaska																			
Fort Sill, Indian Territory	28.64	727.4	29.74	755.4	55	12.8	87	SE			6		10s		S	0	0	Cloudy	
Galveston, Texas	30.06	763.5	30.10	764.5	64	17.8	73	SE	8	3.6			10s		S	0	0	Cloudy	
Grand Haven, Michigan	29.43	747.5	30.11	764.8	33	0.6	89	SE	8	3.6		2c	0	W		0	0	Clear	
Indianapolis, Indiana	29.41	747.0	30.22	767.6	38	3.3	63	S	5	2.2		0	Sm'e			0	0	Clear	
Indianola, Texas	30.02	762.5	30.05	763.3	67	19.4	79	SE	15	6.7			10ks		S	0	0	Cloudy	
Jacksboro, Texas																			
Jacksonville, Florida	30.31	769.9	30.34	770.6	48	8.9	77	N	6	2.7		0	0			0	0	Clear	
Keokuk, Iowa	29.39	746.5	30.02	762.5	42	5.6	65	S	6	2.7		2ck	1s	Calm	Calm	0	0	Fair	
Key West, Florida	30.11	764.8	30.15	765.8	70.0	21.1	72	NE	18	8.0		5k	0	E		0	0	Fair	
Kittyhawk, North Carolina	30.28	769.1	30.31	769.9	44	6.7	92	N	3	1.3		0	0			0	0	Clear	
Knoxville, Tennessee	29.33	745.0	30.40	772.1	32	0.0	79	Calm	0	0			Fog		Calm	0	0	Dense fog	
La Crosse, Wisconsin	29.16	740.7	29.91	759 7	40	4.4	73	S	5	2.2		Haze	Haze			0	0	Hazy	
La Mesilla, New Mexico	26.03	661.2	30.18	766.6	38	3.3	45	Calm	0	0		0	0			0	0	Clear	
Laredo, Texas					58	14.4	87	SE	2	0.9		0	0			0	0	Clear	
Leavenworth, Kansas	29.07	738.4	29.92	760.0	46	7.8	76	S	8	3.6		0	0			0	0	Clear	
Los Angeles, California	29.75	755.6	30.09	764.3	48	8.9	71	N	4	1.8			0			0	0	Clear	
Louisville, Kentucky	29.70	754.4	30.28	769.1	39	3.9	81	SE	2	0.9			Fog		SE	0	0	Dense fog	
Lynchburg, Virginia	29.60	751.8	30.31	769.9	41	5.0	49	Calm	0	0		1c	Haze	W	Calm	0	0	Fair	
Maricopa Wells, Arizona					42	5.6	66	E				0	0			0.01	0.3	Clear	
Marquette, Michigan	29.26	743.2	29.98	761.5	37	2.8	62	S	4	1.8		0	0			0	0	Clear	
Mason, Texas	28.29	718.6	30.02	762.5	59	15.0	76	SW	12	5.4		0	0			0	0	Clear	
Memphis, Tennessee	29.93	760.2	30.27	768.8	39	3.9	80	S	3	1.3		0	Sm'e		S	0	0	Clear	
Milwaukee, Wisconsin	29.36	745.7	30.06	763.5	36	2.2	70	SW	10	4.5		0	Sm'e		Calm	0	0	Clear	
Mobile, Alabama	30.27	768.8	30.32	770.1	45.5	7.5	88	N	4	1.8		5k	5s	S	S	0	0	Cloudy	
Montgomery, Alabama	30.13	765.3	30.38	771.6	38.5	3.6	86	Calm	0	0		0	Fg.;sm.		Calm	0	0	Clear	
Morgantown, West Virginia	29.35	745.5	30.36	771.1	32	0.0	69	Calm	0	0		0	Sm'e			0	0	Clear	
Mt. Washington, N. H.	23.60	599.4	29.96	761.0	5	—15.0	100	NW	33	14.8		0	Fog		NW	0	0	Foggy	
Nashville, Tennessee	29.77	756.1	30.34	770.6	33	0.6	79	Calm	0	0		0	Fog		Calm	0	0	Clear	
New Haven, Connecticut	30.14	765.5	30.26	768.6	36	2.2	70	N	10	4.5		0	0			0	0	Clear	
New London, Connecticut	30.20	767.1	30.25	768.3	38	3.3	54	NW	8	3.6		0	0			0	0	Clear	
New Orleans, Louisiana	30.16	766.1	30.23	767.8	55	12.8	81	E	9	4.0		9k	0	S		0	0	Cloudy	
Newport, Rhode Island	30.17	766.3	30.22	767.6	36	2.2	53	NW	12	5.4		0	0			0	0	Clear	
New York, New York	30.08	764.0	30.27	768.8	40	4.4	64	NW	9	4.0		0	Fog			0	0	Clear	
Norfolk, Virginia	30.26	768.6	30.32	770.1	39	3.9	90	Calm	0	0		0	0			0	0	Clear	
North Platte, Nebraska	26.76	679.7	29.35	745.5	32	0.0	89	E	2	0.9		5c	Sm'e	SW	Calm	0	0	Fair	
Olympia, Washington Ter.	29.84	757.9	29.88	758.9	44	6.7	92	S	3	1.3			10n		S	0.14	3.6	Heavy rain	
Omaha, Nebraska	28.69	728.7	29.76	755.9	44	6.7	84	S	5	2.2		0	2s		Calm	0	0	Clear	
Oswego, New York	30.00	762.0	30.34	770.6	31	— 0.6	68	E	6	2.7		1c	1k	N	E	0	0	Clear	
Pembina, Dakota	28.84	732.5	29.70	754.4	27	— 2.8	88	SE	6	2.7			10s		Calm	0	0	Cloudy	
Philadelphia, Pennsylvania	30.25	768.3	30.30	769.6	42	5.6	68	NW	8	3.6		0	Fog			0	0	Clear	
Phœnix, Arizona					44	6.7	67	Calm				0	0			0.03	0.8	Clear	
Pike's Peak, Colorado	17.51	444.7	29.72	754.9	8	—13.3	100	NE	25	11.2			10n		NE	0.04	1.0	Light snow	
Pioche, Nevada	24.05	610.9	29.82	757.4	32	0.0	69	NW	8	3.6		0	0			0	0	Clear	
Pittsburg, Pennsylvania	29.46	748.3	30.32	770.1	31	— 0.6	89	Calm	0	0			Fog		Calm	0	0	Foggy	
Port Huron, Michigan	29.51	749.5	30.20	767.1	34	1.1	90	S	7	3.1		5cs	0	W		0	0	Fair	
Portland, Maine	30.13	765.3	30.18	766.6	35	1.7	61	NW	12	5.4		0	Haze			0	0	Clear	
Portland, Oregon	29.97	761.2	30.07	763.8	44	6.7	92	Calm	0	0			10n		Calm	0.16	4.1	Light rain	
Prescott, Arizona	24.78	629.4	30.14	765.5	33	0.6	61	SW				0	0			Inap.	Inap.	Clear	
Punta Rassa, Florida	30.19	766.8	30.21	767.3	62	16.7	77	N	10	4.5		0	0			0	0	Clear	
Red Bluff, California	29.83	757.7	30.20	767.1	42	5.6	83	N	4	1.8		0	5s		Calm	0	0	Fair	
Rochester, New York	29.65	753.4	30.29	769.4	36	2.2	80	SE	6	2.7		10k	0	NE		0	0	Cloudy	
Roseburg, Oregon	29.52	749.8	30.10	764.5	47	8.3	66	SE	6	2.7			10n		Calm	0.06	1.5	Heavy rain	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Sacramento, California	30.12	765.0	30.20	767.1	48	6.1	91	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.	
St. Louis, Missouri	29.56	750.8	30.15	765.8	41	5.0	57	S	6	2.7	.....	0	Sm'e	.....	.....	0	0	Clear	
St. Marks, Florida	30.31	769.9	30.32	770.1	40	4.4	100	N	3	1.3	.....	0	0	.....	.....	0	0	Clear	
St. Paul, Minnesota	28.93	734.8	29.75	755.6	42	5.6	65	E	3	1.3	.....	2c	5s	Calm	SE	0	0	Fair	
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salt Lake City, Utah	25.68	652.3	30.01	762.2	38	3.3	63	NW	6	2.7	.....	0	5s	.....	Calm	0	0	Fair	
San Antonio, Texas	29.30	744.2	29.86	758.4	61	16.1	100	SE	2	0.9	.....	.....	10ks	.....	SE	0	0	Cloudy	
San Diego, California	30.05	763.3	30.12	765.0	50	10.0	78	NE	3	1.3	.....	0	0	.....	.....	0.03	0.8	Clear	
Sandusky, Ohio	29.55	750.6	30.25	768.3	38	3.3	71	SW	12	5.4	.....	2c	Fog	Calm	Calm	0	0	Fair	
Sandy Hook, New Jersey	30.24	768.1	30.26	768.6	44	6.7	67	NW	17	7.6	.....	0	Haze	.....	.....	0	0	Clear	
San Francisco, California	30.16	766.1	30.23	767.8	49	9.4	89	W	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Santa Fé, New Mexico	23.00	584.2	29.54	750.3	32	0.0	95	SW	10	4.5	.....	.....	10s	.....	Calm	0.61	15.5	Threatening	
Savannah, Georgia	30.28	769.1	30.38	771.6	43	6.1	83	NE	5	2.2	.....	0	Fog	.....	.....	0	0	Clear	
Shreveport, Louisiana	29.95	760.7	30.18	766.6	43	6.1	83	S	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Smithville, North Carolina	30.32	770.1	30.35	770.9	44	6.7	60	NW	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Springfield, Massachusetts	30.07	763.8	30.20	767.1	34	1.1	61	N	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Stanwix, Arizona	.....	.....	.....	.....	42	5.6	58	SW	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Stockton, Texas	26.86	682.7	29.88	758.9	45	7.2	60	S	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Thatcher's Island, Mass	30.15	765.8	30.21	767.3	36	2.2	62	NW	24	10.7	.....	0	0	.....	.....	0	0	Clear	
Toledo, Ohio	29.53	750.0	30.23	767.8	35	1.7	80	S	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Tucson, Arizona	27.65	702.3	30.20	767.1	39	3.9	91	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Tybee Island, Georgia	30.34	770.6	30.38	771.6	51	10.6	79	N	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Umatilla, Oregon	29.77	756.1	.....	.....	38	3.3	90	Calm	0	0	.....	.....	8s	.....	Calm	0	0	Cloudy	
Vicksburg, Mississippi	30.00	762.0	30.28	769.1	43	6.1	75	SE	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Virginia City, Montana	24.30	617.2	29.78	756.4	30	—1.1	89	Calm	0	0	.....	.....	10s	.....	Calm	0.03	0.8	Cloudy	
Visalia, California	29.85	758.2	30.24	768.1	40	4.4	91	Calm	0	0	.....	0	0	.....	.....	0.07	1.8	Clear	
Washington, D. C.	30.23	767.8	30.34	770.6	32	0.0	84	W	3	1.3	.....	0	Sm'e	.....	Calm	0	0	Clear	
Wickenburg, Arizona	.....	.....	.....	.....	31	—0.6	9	N	.....	.....	.....	6	0	.....	.....	0	0	Clear	
Wilmington, N. Carolina	30.26	768.6	30.34	770.6	42	5.6	65	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Winnemucca, Nevada	25.78	654.8	30.14	765.5	28	—2.2	77	Calm	0	0	.....	0	0	.....	.....	0.14	3.6	Clear	
Wood's Holl, Mass.	30.23	767.8	30.29	769.4	36	2.2	53	NW	16	7.2	.....	0	0	.....	.....	0	0	Clear	
Yankton, Dakota	28.43	722.1	29.74	755.4	33	0.6	84	S	3	1.3	.....	5cs	0	SW	.....	0	0	Fair	
Yuma, Arizona	29.96	761.0	30.14	765.5	45	7.2	24	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Sub-Series.																			
York Factory, B. A.	29.60	751.8	29.66	753.4	22.0	—5.6	100	S	9	4.0	.....	.....	10n	.....	.....	.....	.....	Snowing	J. Fortescue, W. Wood.
Havana, Cuba, W. I.	30.04	763.0	30.06	763.5	71	21.7	79	SE	2.4	1.1	.....	8k	2n;ks	E	SE	0.29	7.4	Cloudy	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.08	764.0	30.09	764.3	78	25.6	90	Calm	0	0	.....	5c	5n	SW	NE	1.42	36.1	.....	James Gall.
Navassa, W. I.	29.80	756.9	29.88	758.9	80	26.7	.....	N	10	4.5	.....	.....	.....	.....	.....	0	0	Cloudy	F. M. Everett.
St. Thomas, W. I.	.....	.....	.....	.....	86	30.0	83	E	4	1.8	.....	2c	2k	NE	.....	0	0	.....	G. O. Gellich.
Paramaribo, D. Guiana, S. A.	.....	.....	29.97	761.2	83	28.3	79	E	.....	.....	2	3c	5k	E	.....	0	0	Fair	C. J. Hering.
Batavia, Dutch Guiana, S. A	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Dr. H. Groot.
Medellin, Colombia, S. A.	25.19	639.8	.....	.....	66.5	19.2	87	Calm	.....	.....	0	.....	10ks;s	.....	.....	0	0	Cloudy	Thomas Herran.
Honolulu, Oahu, H. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Daniel Smith.
Makawao, Maui, H. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.: Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.: Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Ploche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.: Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.67 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.86 in.; Pike's Peak, 12.21 in.; Ploche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
NavyYard MareIsland,Cal.	30.25	768.3	44	6.7	43	6.1	92	NNE	2	0.9	.....	.....	3k	.....	Calm	0	0	.....	.....	Clear	
Navy Yard, Pensacola, Fla.	30.38	771.6	.....	.....	51	10.6	86	NNE	6	2.7	.....	.....	5	.....	.....	0	0	.....	.....	D. clouds.....	
NavyYard,Portsmouth,N.H	30.30	769.6	60	15.6	32	0.0	79	WNW	3	1.3	.....	.....	.....	.....	.....	0	0	.....	.....	Clear	
Naval Hospital, Yokohama, Japan	29.75	755.6	66	18.9	64	17.8	94	SW	.....	.....	6	.....	10n	.....	SW	0.03	0.8	.....	.....	Light rain...	
Adams. Gregory Bay, Patagonia.	29.63	752 6	50	10.0	50	10.0	72	NW	.....	.....	4–6	.....	10	.....	NW	Light	Light	Moderate.	WSW	Squally.....	
Alert. Yokohama, Japan	29.86†	758.4†	66	18.9	66	18.9	94	SSW	.....	.....	4	.....	10	.....	S	.....	.....	Smooth	.....	Showery.....	
Alliance, Constantinople, Turkey.	30.31	769.9	66	18.9	61	16.1	82	NE	.....	.....	2–3	.....	1	.....	NE	.....	.....	.....	.....	Pleasant.....	
Ashuelot. Tientsin, China	30.38	771.6	49	9.4	39	3.9	38	Calm	.....	.....	0	.....	0	.....	.....	.....	.....	Smooth	.....	Blue sky.....	
Canonicus, New Orleans, La	30.18	766.6	45	7.2	55	12.8	87	ESE	.....	.....	2	.....	10	.....	.....	.....	.....	.....	.....	Cloudy	
Colorado, New York, N. Y.	30.29	769.4	44	6.7	43	6.1	59	NW	6	2.7	.....	.....	4	.....	NW	0	0	.....	.....	Foggy	
Despatch, Constantinople, Turkey.	30.25	770.9	75	23.9	59	14.0	70	NE	.....	.....	3	.....	2	.....	Calm	.....	.....	.....	.....	Pleasant.....	
Franklin, Norfolk, Va	30.36	771.1	42	5.6	41	5.0	74	Calm	0	0	.....	.....	0	.....	.....	0	0	.....	.....	Clear.....	
Gettysburg, Malta	29.84‡	757.9‡	.....	.....	75	23.9	100	SE	.....	.....	1–2	.....	1	.....	Calm	0	0	.....	.....	D. clouds. ...	
Guard, N. 37° 00′, W. 44° 30′	30.10	764.5	72	22.2	71	21.7	90	SW	.....	.....	5–8	.....	8	NE	SW	.....	.....	Broken Rough	S&W	Squally.....	
Lackawana, San Francisco, Cal	30.22	767.6	.. ..	.....	55	12.8	74	SW	.....	... .	1	.....	1	.....	NW	.....	.....	.....	.....	D. clouds.....	
Marion, Smyrna, Turkey	30.19	766.8	62	16.7	64	17.8	48	WSW	.....	.....	2	.....	0	.....	.....	0	0	Smooth	.....	Blue sky.....	
Michigan, Erie, Pa	29.71	754.6	58	14.4	42	5.6	50	S	.....	.....	1	.....	0	.....	.....	.....	.....	.....	.....	Fair	
Monocacy, Yokohama, Japan	29.72	754.9	73	22.8	59	15.0	88	SSW	.....	.....	3–5	.....	10	.....	S&W	.....	.....	.....	.....	Raining.....	
Monongahela, N. 38° 00′, W. 9° 38′	29.79	756.7	65	18.3	64	17.8	83	S	.....	.....	4	.....	cks	.....	.....	.....	.....	Smooth	.....	D. clouds.....	
New Hampshire, Port Royal, S.C.	30.50	774.7	.....	.....	50	10.0	79	NE	3	1.3	.....	.....	10	.....	Calm	0	0	.....	.....	Blue sky.....	
Omaha, Callao, Peru	30.05	763.3	73	22.8	71	21.7	85	Calm	0	0	.....	.....	10	.....	Calm	0	0	Smooth	.....	Dull	
Onward, Callao, Peru	30.02	762.5	72	22 2	69	20.6	80	SE	.....	.....	1	.....	10	.....	.....	.....	.....	Long	W	D. clouds....	
Ossipee, Norfolk, Va	30.37	771.4	72	22.2	46	7.8	84	Calm	.....	.....	0	.....	0	.....	.....	.....	.....	.....	.....	Blue sky.....	
Palos, Shanghai, China	30.33	770.4	57	13.9	53	11 7	80	E	.....	.....	0–1	.....	0	.....	.....	.....	.....	.....	.....	Clear.....	
Pensacola, San Francisco, Cal	30.26	768.6	.....	.....	50	10.0	93	N&W	.....	.....	0–1	.....	0	.....	.....	.....	.....	.....	.....	Clear.....	
Plymouth, Norfolk, Va	30.30	769.6	42	5.6	42	5.6	91	Calm	.....	.....	0	.....	0	.....	.....	.....	.....	.....	.....	Clear	
Ranger, Shanghai, China	30.44	773.2	.....	.....	57	13.9	94	Calm	.....	.....	0	.....	0	.....	.....	.....	.....	.....	.....	.....	
Rio Bravo, Brownsville, Texas	29.91	759.7	.....	.....	67	19.4	95	SSE	.....	.....	1	.....	10	.....	S	.....	.....	.....	.....	Raining.....	
Santee, Annapolis, Md.	30.36	771.1	66	18.9	42	5.6	58	NW	.....	.....	1	.....	0	.....	.....	0	0	.....	.....	Clear.....	
Saratoga, Hampton Roads, Va	30.74†	780.8†	.....	.....	54	12.2	??	NNW	.....	.....	1	.....	0	.....	.....	0	0	.....	.....	Clear.....	
St. Louis, League Island, Pa	30.14	765.5	41	5.0	40	4.4	73	NW	5	2.2	.....	.....	0	.....	.....	0	0	.....	.....	Clear.....	
Swatara, Hampton Roads, Va	30.38	771.6	.....	.....	61	16.1	55	NNW	.....	.....	1	.....	1	.....	.....	.....	.....	.....	.....	Blue sky.....	
Tennessee, Yokohama, Japan	29.77	756.1	70	21.1	65	18.3	84	SSW	24	10.7	.....	.....	10	.....	S&W	0.10	2.5	Slight	S	Raining.....	
Trenton, Villefranche, France	29.75	755.6	65	18.3	62	16.7	83	SW	2	0.9	.....	.....	10	.....	SW	1.00	25 4	.....	.....	D. clouds.....	
Vandalia, Villefranche, France.	29.61	752.1	62	16.7	60	15.6	88	Calm	.....	.....	0	.....	10	.....	Calm	.....	.....	Long smooth	S	D. clouds.....	
Wabash, Boston, Mass	30.18	766.6	43	6.1	33	0.6	70	NW	14	6.3	.....	.....	0	.....	.....	0	0	.....	.....	Blue sky.....	
Wyoming, Washington, D. C.	.....	.....	.....	.....	35	1.7	.....	Calm	.....	.....	0	.....	.....	.....	.....	.....	.....	.....	.....	Hazy.....	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. ‡ Barometer corrected for instrumental error and reduced to sea-level.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.	Character.	Direction from—		
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—				
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama, N. 9° 33′ 42″, W. 85° 24″			29.62	752.3	83	28.3	63	NE			3		8		NE	Moderate.	N	D. clouds	Capt. Howard.
S. S. City of Peking, N. 39° 59′, W. 175° 58′			30.03*	762.7*	54	12.2	100	NW			6		2		NW	Rough	NW	Raining	Lt. Z. L. Tanner, U.S.N.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio, N. 36° 12′, W. 171° 58′			30.22	767.6	74	23.3		W			5		4		WSW	Short	W	D. clouds	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

NOTE.—The originals give the wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. *Anerold.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson.
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.

S. S. Belgic																			Capt. John Metcalf.
S. S. Gaelic																			Capt. W. H. Kidley
S. S. Oceanic, Yokohama, Japan			29.58	751.3	60	15.6	76	Var.			4–7		6		Var.	Smooth		Raining	Capt. H. Parsell.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andresson
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig																			Capt. K. Undütsch.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio, N. 46° 45′, W. 30° 8′			29.34	745.2	61.5	16.4	97	WSW			7		10			Heavy	WSW	Drizzling	Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, nor distinguish between upper and lower clouds.

UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Lo'wr	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second	0—10.	0—10.	0—10.	From—	From—	Character.	Direction From—		
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana. N. 41° 29′, W. 56° 01′			29.60*	751.8*	67.0	19.4	55	NE			8		10			Heavy	SSE	Cloudy	Captain Sargent.
S. S. Ohio. Liverpool			29.26	743.2	54	12.2	100	W			2		5		W			Fair	Captain Morrison.
S. S. Pennsylvania, N. 41° 54′, W. 62° 04′			29.81†	757.2†	43	6.1	92	NW			6		10		NW	Mod'ate	NW	Cloudy	Captain Harris.

Note.—The originals give the barometer as read off; the wind-force by the scale 0 to 12. *Aneroid; correction for elevation applied, instrumental error not known. †Corrected for temperature and elevation, instrumental error not known.

RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

S. S. Nederland	Capt. Randle.
S. S. Switzerland	Capt. Jackson.
S. S. Vaderland	Capt. Nichols.

ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

S. S. Hibernian	Capt. W. Richardson.
S. S. Scandinavian	

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, Kennebunk, Maine			30.18	766.6	40	4.4	73	NW	12	5.4			0					Clear	Capt. James Jorgensen.

Note.—The originals for the schooner Addie Fuller give the amount of cloudiness by the scale 0 to 4; the barometer as read off.

Collated at the Office of the Chief Signal Officer of the Army, Washington, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^{d},) Chief Signal Officer, U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON NOVEMBER 14, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:48 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:28 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours	.....	.....	30.23	767.8	61.7	16.5	61	NW	.....	.....	3	.....	7	.....	.....	0.228	5.8	Very cloudy	Michel.
Algiers	.....	.....	29.97	761.3	57.6	14.2	76	W	.....	.....	2	.....	5	.....	.....	0.961	24.4	Cloudy	Peter.
La Calle	.....	.....	29.81	757.1	56.5	13.6	93	NW	.....	.....	3	.....	10	.....	.....	1.890	48.0	Covered	Fleury.
Tunis	.....	.....	29.76	755.9	61.5	16.4	75	NW	.....	.....	4	.....	7	.....	.....	0.161	4.1	Very cloudy	Jacques.
Sfax	.....	.....	29.75	755.7	68.0	20.0	.....	W	.....	.....	1	.....	9	.....	.....	Inap.	Inap.	Covered	Husson.
Saida	.....	.....	30.19	766.7	47.8	8.8	85	NNW	.....	.....	3	.....	2	.....	.....	0.319	8.1	Fair	Millot.
Tebessa	.....	.....	29.83	757.7	.....	.....	.....	W	.....	.....	3	.....	9	.....	.....	.....	.....	Covered	Bourgeois.
Geriville	.....	.....	30.08	763.9	49.6	9.8	74	NW	.....	.....	5	.....	6	.....	.....	0.39	10.	Cloudy	Lemaillot.
Laghouat	.....	.....	30.02	762.5	53.6	12.0	54	N	.....	.....	4	.....	4	.....	.....	0	0	Cloudy	Guyot.
Biskra	.....	.....	29.78	756.5	63.3	17.4	55	NW	.....	.....	4	.....	8	.....	.....	0	0	Cloudy	Kuntz.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m.; or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

Agram	29.59	751.6	30.13	765.4	63.1	17.3	56	NE	.....	.....	2	.....	5	.....	.....	0	0	.....	Prof. Ivan Stozir
Cracow, I. R. Observatory	29.50	749.3	30.27	768.9	55.4	13.0	77	NE	.....	.....	1	.....	10	.....	.....	0	0	.....	Dr. Wierzbiski.
Eperies	29.42	747.3	30.31	769.8	54.0	12.2	67	S	.....	.....	1	.....	10s	.....	N	0	0	.....	Julius Mikolik.
Gratz	28.96	735.5	30.21	767.4	54.9	12.7	74	SW	.....	.....	2	.....	3	.....	.....	0	0	.....	Andreas Rospini.
Hermannstadt	28.87	733.4	30.32	770.1	51.8	11.0	57	SE	.....	.....	5	.....	4	.....	.....	0	0	.....	Prof. Reissenberger.
Kremsmünster	28.82	732.0	30.19	766.8	46.0	7.8	89	W	.....	.....	1	.....	10	.....	.....	0	0	.....	Prof. C. Wagner.
Lemberg	29.39	746.6	30.41	772.5	42.3	5.7	83	SE	.....	.....	2	.....	10	.....	.....	0	0	.....	Dr. T. Stanecki.
Pola	29.08	760.3	30.04	763.1	64.8	18.2	67	SE	.....	.....	6	.....	10s	.....	.....	0	0	.....	I.R.Hydrographic Office.
Szathmar	29.89	759.3	30.36	771.2	59.4	15.2	47	SE	.....	.....	2	.....	5	.....	.....	0	0	.....	Johann Tamas, S. J.
Szegedin	29.97	761.3	30.25	768.4	58.6	14.8	70	S	.....	.....	4	.....	4	.....	.....	0	0	.....	Karl Stancel.
Trieste	30.02	762.5	30.12	765.1	66.2	19.0	84	SW	.....	.....	1	.....	s	.....	.....	0	0	Cloudy	P. Busin.
Vienna	29.51	749.6	30.22	767.5	53.6	12.1	69	SE	.....	.....	2	.....	9	.....	.....	0	0	.....	I. R. Central Met. Obs'y.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time, and at Trieste at 7 a. m. of the following day. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

Arlon	28.70	729.0	30.23	767.8	48.9	9.4	81	SW	.....	.....	1	.....	5	.....	.....	0.008	0.2	.....	Prof. M. Passau.
Brussels	29.99	761.8	30.20	767.0	48.6	9.2	87	SSW	.....	.....	4	.....	5	.....	SSW	0	0	.....	Royal Observatory.
Furnes	30.11	764.9	30.14	765.5	53.2	11.8	81	SW	.....	.....	2	.....	4	.....	.....	0	0	.....	M. E. de Cae.
Maeseyck	30.04	763.1	30.17	766.4	50.9	10.5	90	W	.....	.....	2	.....	5	.....	.....	0	0	.....	M. Pierrot.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

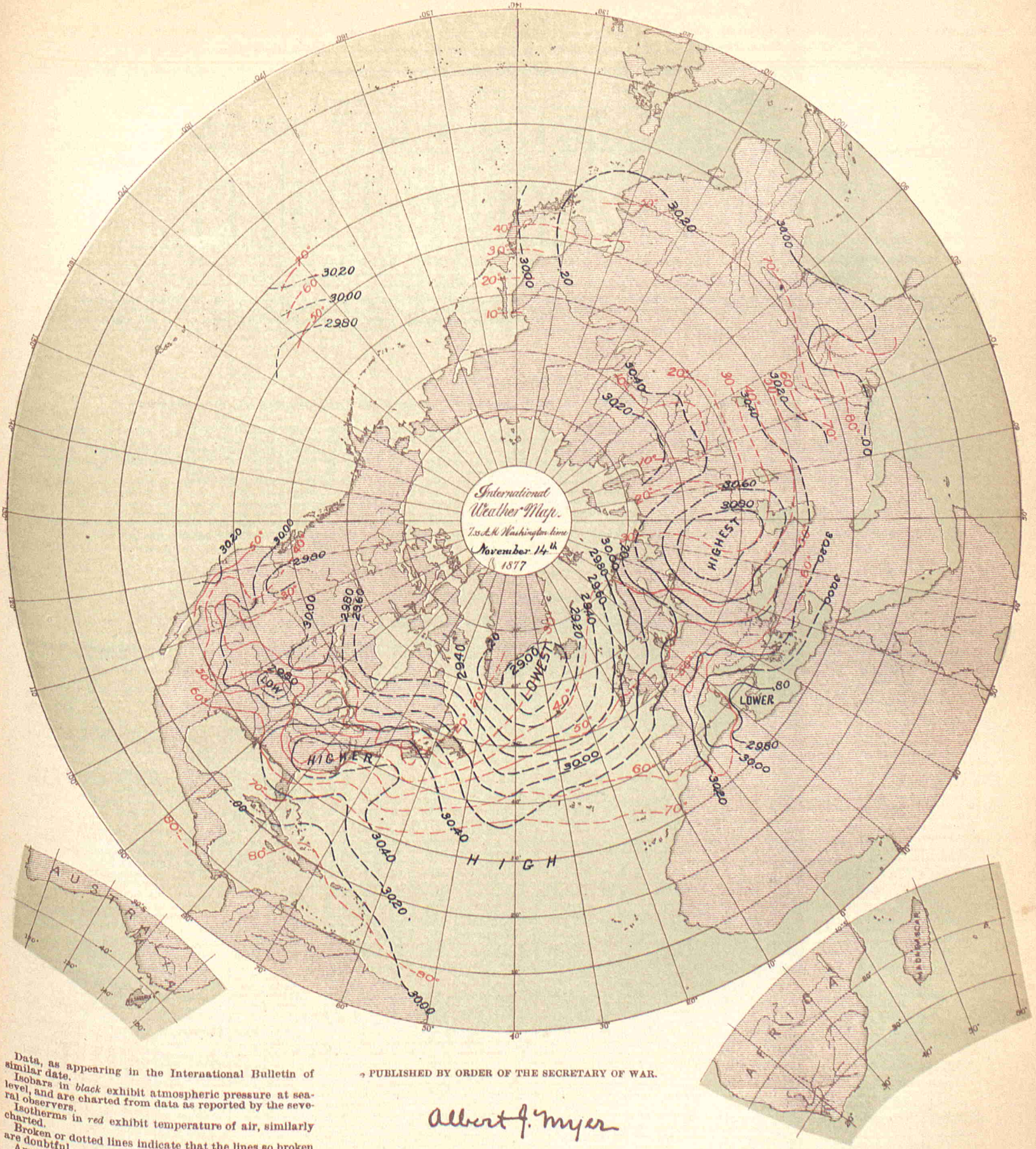
Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Aberdeen	29.78	756.4	29.88	758.9	44.1	6.7	.....	S	13	5.8	.....	.....	2	.....	.....	0.070	1.78	Hazy.....	W. Boswell.
Ardrossan	29.82	757.4	29.84	757.9	49	9.4	.....	SSW	.....	.....	3	.....	.....	.....	.....	.....	.....	.....	William McNeil.
Armagh, Observatory	.....	.....	29.81	757.2	46.0	7.8	.....	SSE	21	9.4	.....	.....	6	.....	.....	.....	.....	D. clouds.....	S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)	.....	.....	30.00	762.0	47.2	8.4	.....	SSE	12	5.4	.....	.....	2	.....	.....	.....	.....	Blue sky.....	John Hartnup.
Birr Castle, (Parsonstown)	.....	.....	29.80	756.9	49.7	9.8	.....	SSE	.....	.....	3	.....	10	.....	.....	.....	.....	Overcast.....	J. Dreyer.
Bradford, Yorkshire	29.63	752.6	30.03	762.7	47.1	8.4	.....	S	.....	.....	2	.....	3	.....	.....	0	0	D. clouds.....	J. McLandsborough.
Bridgetown, (Barbados)	29.88	758.9	29.91	759.7	80.0	26.7	.....	E	.....	.....	2	.....	5	.....	.....	.....	.....	Overcast.....	Pvt. G. W. Roberts, A.
Cambridge, Observatory	.....	.....	30.12	765.0	52.1	11.2	.....	S	.....	.....	1	.....	0	.....	.....	.....	.....	Blue sky.....	H. Todd. [H. C.
Cardington	.....	.....	30.12	765.0	46.0	7.8	.....	SW	.....	.....	1	.....	1	.....	.....	.....	.....	Blue sky.....	John McLaren.
Chatham, School M. E	30.00	762.0	30.14	765.5	55.2	12.9	.....	S	.....	.....	1	.....	2	.....	.....	.....	.....	Blue sky.....	Lt. Col. C. M. Martin, R.E.
Dartmoor	28.62	726.9	30.12	765.0	47.0	8.3	.....	S	.....	.....	4	.....	7	.....	.....	.....	.....	Fine.....	Alexander Watt.
Davos Platz (Switzerland)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Francis Redford, M. A.
Donaghadee	29.82	757.4	29.85	758.2	46	7.8	.....	WSW	.....	.....	2	.....	5	.....	.....	.....	.....	D. clouds.....	J. Mac Gowan.
Dover	30.12	765.0	30.15	765.8	50	10.0	.....	WSW	.....	.....	3	.....	5	.....	.....	.....	.....	½ clouded...	J. Costello.
Eccles, (near Manchester)	.....	.....	30.03	762.7	48.7	9.3	.....	S	0.8	0.4	.....	.....	5	.....	.....	.....	.....	D. clouds.....	Thomas Mackereth.
Falmouth, Observatory	29.86	758.4	30.09	764.3	52.0	11.1	.....	S	.....	.....	4	.....	10	.....	.....	.....	.....	Overcast.....	The Staff.
Fort Napier, (Natal)	27.62	701.5	29.82	757.4	75.3	24.1	.....	E	.....	.....	2	.....	6	.....	.....	.....	.....	D. clouds.....	Pvt. G. Salmon, A.H.C.
Free Town, (Sierra Leone)	.....	.....	29.92	760.0	90	32.2	.....	Calm	.....	.....	0	.....	3	.....	.....	.....	.....	Blue sky.....	
Galway, Queen's College	.....	.....	.....	.....	49	9.4	.....	S	.....	.....	4	.....	9	.....	.....	.....	.....	Overcast.....	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	30.18	766.6	30.23	767.8	62.5	16.9	.....	NW	.....	.....	3	.....	2	.....	.....	.....	.....	D. clouds.....	Corpl. C. Aitken, A.H.C.
Glasgow, Observatory	29.66	753.4	29.86	758.4	47.0	8.3	.....	S	.....	.....	2	.....	4	.....	.....	.....	.....	Blue sky.....	D. G. Maclean.
Great Yarmouth	30.10	764.5	30.11	764.8	48	8.9	.....	W	.....	.....	1	.....	2	.....	.....	.....	.....	Foggy	G. T. Watson.
Greenwich, Royal Obs'y	29.97	761.2	30.14	765.5	49.9	9.9	.....	SW	.....	.....	1	.....	0	.....	.....	.....	.....	Blue sky.....	The Staff, for G. B. Airy.
Guernsey	29.95	760.7	30.17	766.3	53	11.7	.....	SW	.....	.....	2	.....	3	.....	.....	.....	.....	D. clouds.....	Dr. S. E. Hoskins, F.R.S.
Helston	.....	.....	30.06	763.5	54	12.2	.....	S	.....	.....	2	.....	4k	.....	.....	0	0	Fine.....	M. P. Moyle.
Holyhead	29.87	758.7	29.93	760.2	50	10.0	.....	SSW	.....	.....	5	.....	3	.....	.....	.....	.....	D clouds....	John Tilston.
Jersey	29.89	759.2	30.19	766.8	55.0	12.8	.....	SW	.....	.....	3	.....	2	.....	.....	Blank	Blank	D. clouds.....	J. Fisher.
Kew, Observatory	.....	.....	30.14	765.5	47.3	8.5	.....	SW	6	2.7	.....	.....	.....	.....	.....	.....	.....	Hazy.....	The Staff.
Kingstown	29.86	758.4	29.89	759.2	49	9.4	.....	S	.....	.....	5	.....	8	.....	.....	.....	.....	Overcast.....	George Mitchell.
Leicester, Museum	.....	.....	30.09	764.3	48.6	9.2	.....	SW	.....	.....	4	.....	1	.....	.....	.....	.....	D. clouds.....	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.73	755.1	29.80	756.9	66.6	19.2	.....	SE	.....	.....	6	.....	8	.....	.....	.....	.....	Raining.....	S'gt. C. Arbeiter. A.H.C
Nairn	29.66	753.4	29.76	755.9	46	7.8	.....	W	.....	.....	1	.....	10	.....	.....	.....	.....	Overcast.....	W. D. Penny.
Nassau, (Bahamas)	.....	.....	30.14	765.5	75.5	24.2	.....	NE	.....	.....	6	.....	5	.....	.....	.....	.....	D. clouds...	C. S. Duncombe.
Nottingham, Observatory	29.90	759.4	30.09	764.3	41.9	5.5	.....	SSW	.....	.....	1	.....	2c	.....	.....	NW	0.002	0.05	Blue sky.....	F. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.54	750.3	30.08	764.0	46.8	8.2	.....	S	.....	.....	3	.....	10	.....	.....	.....	.....	Misty.	Rev. Stephen Whitty.
Oxford, Radcliffe Obs'y	.....	.....	30.12	765.0	48	8.9	.....	WSW	.....	.....	1	.....	1	.....	.....	.....	.....	Blue sky.....	F. Lucas
Plymouth	30.02	762.5	30.10	764.5	51.3	10.7	.....	S	.....	.....	2	.....	7	.....	.....	.....	.....	D. clouds.....	John Merrifield.
Roche's Point	29.81	757.9	29.89	759.2	51	10.6	.....	SSW	.....	.....	6	.....	10	.....	.....	.....	.....	Rain-squalls	W. Kennedy.
Saint Ann's Head	29.84	757.9	30.00	762.0	53	11.7	.....	S	.....	.....	4	.....	7	.....	.....	.....	.....	D. clouds.....	John C. Walker.
Sandwick Manse, (Orkneys)	.....	.....	29.75	755.6	44.6	7.0	.....	S	18	8.0	.....	.....	0	.....	.....	.....	.....	Blue sky.....	Rev. C. Clouston, LL. D
Scutari, Cemetery, (Turkey)	.....	.....	30.33	770.4	57.2	14.0	.....	NE	.....	.....	2	.....	9	.....	.....	.....	.....	D. clouds.....	Sergt. W. H. Lyne.
Sheffield	29.80	756.9	30.04	763.0	48.0	8.9	.....	SW	.....	.....	1	.....	3	.....	.....	0	0	Blue sky.....	W. F. Cooper.
Silloth Rectory	29.90	759.4	29.94	760.5	49.2	9.6	86	SW	.....	.....	3	.....	0	.....	.....	0.150	3.81	Blue sky.....	Rev. F. Redford, M. A.
Stonyhurst, Observatory	.....	.....	.....	.....	46.9	8.3	.....	S	.....	.....	3	.....	.....	.....	.....	.....	.....	Misty.....	Rev. S. J. Perry.
Stornoway, Lews C. (Hebr.)	.....	.....	29.57	751.1	46	7.8	.....	SSW	.....	.....	7	.....	10	.....	.....	.....	.....	Threatening	John Smith.
Stratfield Turgiss	29.91	759.7	30.13	765.3	47.3	8.5	.....	SW	.....	.....	1	.....	0	.....	.....	.....	.....	Blue sky.....	Rev. C. H. Griffith, F.M.S.
Thurso	.....	.....	29.72	754.9	46	7.8	.....	S	.....	.....	3	.....	4	.....	.....	.....	.....	D. clouds.....	John Trotter.
Truro, Royal Institution	.....	.....	30.08	764.0	53	11.7	.....	S	.....	.....	7	.....	8	.....	.....	.....	.....	Gloomy.....	W. Newcombe.
Valencia, Observatory	.....	.....	29.72	754.9	51.3	10.7	.....	SE	47	21.0	.....	.....	10	.....	.....	.....	.....	Raining.....	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)	.....	.....	.....	.....	52	11.1	.....	SW	.....	.....	1	.....	5	.....	.....	0.20	5.1	.....	Henry Mercer.
Cape Good Hope, Obs'y	30.09	764.3	30.13	765.3	65.8	18.8	63	NNW	13	5.8	.....	6	4	.....	.....	.....	.....	.....	The Staff, for E. J. Stone.
Hobart Town, (Tasmania)	.....	.....	29.92	760.0	51.0	10.6	70	NW	.....	.....	2	.....	10k	.....	.....	0	0	Covered.....	Francis Abbott, F.R.A.S.
Leith, Restalrig Park	.....	.....	29.91	759.7	48.0	8.9	.....	W	.....	.....	2	.....	.....	.....	.....	0.06	1.5	Fine.....	Andrew Gibb.
Mauritius, Observatory	29.84	757.9	30.04	762.8	77.3	25.2	59	SE	19.5	8.7	.....	0	6	.....	WSW	0.02	0.5	Squally.....	C. Meldrum.
Melbourne, Observatory	29.90	759.4	29.99	761.7	54.7	12.6	77	SSE	10	4.5	.....	.....	10	.....	.....	0	0	Dull	R. L. J. Ellery.
Monach L't-house, (Hebrides)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Youngclause.
North Unst, (Shetland Is.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Robert Burnet.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series: 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m.

Marine Series. Vessels.	Sea or swell. Height scale 0—9	Sea or swell. Direction from—	Weather	Observer.
S. S. Algeria	.....	.....	.....	Capt. W. Watson.
S. S. Batavia, N. 49° 30′, W. 29° 20′	.....	.....	.....	Capt. J. E. Mouland.
Ship Camperdown	6	WSW	Showery.....	Capt. A. T. Miller.
Brig Catherine	.....	.....	.....	Capt. Adam Smith.
Barque Celeste	.....	.....	.....	Capt. D. F. McKechnie.
S. S. Hibernia	.....	.....	.....	Capt. W. R. Cato.
Barque Maroon	.....	.....	.....	Capt. A. T. Brown.
Ship Mikado	.....	.....	.....	Capt. C. C. Prehn.
S. S. Seine	.....	.....	.....	Capt. H. Manning.
Barque Sorata	.....	.....	.....	Capt. Jas. J. Price.
Schooner Traveller	.....	.....	.....	Capt. Alex Simpson.
.....	.....	.....	.....	
.....	.....	.....	.....	
.....	.....	.....	.....	
.....	.....	.....	.....	
.....	.....	.....	.....	
.....	.....	.....	.....	

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	BAROMETER. Corrected for instrum'tal error and temperature. Inches.	BAROMETER. Corrected for instrum'tal error and temperature. Millimeters.	BAROMETER. Reduced to sea-level. Inches.	BAROMETER. Reduced to sea-level. Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Upper. From—	CLOUDS. Direction. Lower. From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	WEATHER.	OBSERVER.
San José	26.17	664.7			65.8	18.8	88	NE			2	1pc				0	0		Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	30.13	765.4	30.18	766.6	48.2	9.0	93	S			2		10					Foggy	
Fanöe	30.09	764.3	30.11	764.8	49.1	9.5	98	SW			4		6						
Godthaab, (Greenland)	29 09	738.8	29.13	739.9	19.0	—7.2	81	NE			4		5						
Stykkisholm, (Iceland)	28.89	733.7	28.93	734.8	31.8	—0.1	96	SE			6		8						
Thorshavn, (Faröe)	29.47	748.6	29.51	749.5	44.8	7.1	73	SW			3		4						
Vestervig	29.92	759.9	30.09	764.2	47.7	8.7	95	SE			4		7					Rain & fog	

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

Alençon, Normal School	29.71	754.5	30.26	768.5	51.8	11	94	SW			1		1		NE	0	0	Clear	Collignon, Director.
Amiens, Normal School	30.08	764.0	30.19	766.8	55.4	13.0	75	SW			2		0			0	0	Clear	Bonvarne, Director.
Avignon, Normal School	29.94	760.5	30.02	762.5	56.1	13.4	53	N			6		0			0	0	Very clear	Mr. Giraud, Director.
Bar-sur-Seine	29.67	753.6	30.25	768.3	49.6	9.8	80	SW			1		5kn		SW	0	0	Cloudy	C. Saillard.
Beaumette Obs'y (Angers)	30.06	763.4	30.22	767.5	50.5	10.3	81	NNE	1.8	0.8					N	0	0		Albert Cheux.
Beauvais	29.93	760.3	30.23	767.7	48.2	9	84	S			1		2		WSW	0.059	1.50	Slightly cl'dy	Normal School.
Besançon	29.30	744.2	30.20	767.1	49.6	9.8	76	E			3		0			0	0	Clear	Normal School.
Bourg-en-Bresse	29.29	744.0	30.21	767.4	50 2	10.1	70	N			2		0			0	0	Clear	Normal School.
Bourges, Normal School	29.70	754.3	30.28	769.0	51.8	11	97	SW			2		5		SE	0	0	Cloudy	A. Wagner, Director.
Brest, Naval Observatory	29.87	758.6	30.09	764.2	55.2	12.9	74	SSW			3		9ks		SSW	0.030	0.75		The Staff.
Carcassonne, Normal School	29.54	750.4	29.97	761.1	51.1	10.6	95	W			2		2		W	0	0	Slightly cl'dy	Vateau, Director.
Caen	30.12	765.0	30.19	766.9	53.6	12	78	E			1		2		E	0	0	Slightly cl'dy	Normal School.
Chartres, Normal School	29.60	751.8	30.17	766.2	57.6	14.2	95	W			1		0			0	0	Clear	Lequin, Director.
Châlons-sur-Marne, N. Sch'l	29.93	760.2	30.25	768.4	44.1	6.7	88						10			0	0	Foggy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.84	732.5	30.22	767.5	50.2	10.1	70	NE			2		10		N	0.008	0.2	Covered	Allnard, Director.
Commercy, Normal School	29.33	745.0	30.24	768.2	46.9	8.3	95	SW			2		1		SW	0	0	Slightly cl'dy	Dr. Goulet, Director.
Commune de Gréasque*	28.87?	733.4?	30.06?	763.4?	54.9	12.7	57	NW			2		2		NW	0	0	¼ covered	M. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	30.01	762.2	30.23	767.7	52.5	11.4	69	N			1		0			0.142	3.6	Clear	Mouillot, Director.
Le Mans, Normal School	29.93	760.2	30.24	768.2	43.5	6.4	97	WSW			2					0.047	1.2	Dense fog	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.19	741.4	30.11	764.9	50.9	10.5	62	NE			4		0			0	0	Clear	Pin, Director.
Lorient, Naval Observatory	30.12	765.0	30.22	767.5	57.2	14.0	57	S			3		2		N	0	0	¼ covered	T. Carré, Director.
Mâcon, Normal School	29.47	748.5	30.13	765.2	52.2	11.2	80	NE			2		0			0	0	Clear	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	29.32	744.8	30.39	771.9	49.8	9.9	74	SSW					10		NNE	0	0	Covered	Normal School.
Nismes, Normal School	29.57	758.7	30.08	763.9	57.9	14.4	55	NW			2		0			0	0	Clear	Boyer, Director.
Orleans, Normal School	29.74	755.5	30.13	765.3	46.4	8	89	SE			1		0			0	0	Clear	Bernard, Director.
Paris, Observatory	29.98	761.6	30.23	767.8	50.4	10.2	76	SSW			1		1k			Inap.	Inap.	Clear	National Observatory.
Privas	28.97	735.9	30.04	763.0	53.6	12	65	N			2		1		N	0	0	Clear	Normal School
Rochefort, Naval Obs'y	30.20	767.1	30.23	767.9	54.0	12.2	74	SE			2		1		SE	0	0	Clear	Lt. Decante, Director.
Rouen, Normal School	30.13	765.2	30.21	767.4	56.7	13 7	42	SW			2		0			0	0	Clear	F. Lucard, Director.
Tarbes, Normal School																			T. Hugues, Director.
Villefranche	29.50	749.3	30.22	767.6	53.6	12	76	N			2		8		N	0	0	Very cloudy	Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.76	756.0	29.79	756.7	81.0	27.2										0	0		L'Abbé Marchési.
Marseilles, Observatory			29.96	761.0	59.4	15.2	48	WNW			2		0			0.004	0.10		The Staff.
Mont-Louis	24.87	631.8	30.19	766.8	36.0	2.2	61	NNE	26.1	11.67			4		NNE	0	0		Mr. Falguère.
Nice			29.90	759.5	60.3	15.7	61	E					10		SE	0.020	0.5	Rainy	Dr. A. Niepce.
Paris, Montsouris Obs'y	29.94	760.4	30.21	767.4	53.8	12.1	67	S			1		0			Inap.	Inap.		Marié Davy, Director.
Perpignan			30.13	765.3	55.6	13.1	59	NW	28.0	12.50			2		NW	0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.	21.18	537.9			26.8	— 2.9		N			1		6					Snowy	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.53	572.2			27.5	— 2.5		N			1		5			0.906	23.0	Snowy	Gen'l de Nansouty.
Saint Maur, (near Paris)	30.06	763 5	30.23	767.7	52.3	11.3	70	SW			1		0			0	0	Foggy	E. Renou.
Toulouse, Observatory	29.53	750.1	30.26	768.6	48.4	9.1	76	NNW			3		6			0.008	0.2	Light fog	The Staff.
Tours	30.03	762 8	30.23	767.8	49.8	9.9	77	SSW			1		1		WNW	0	0		C. Marquet.
Versailles, (near Paris)			30.22	767.6	52.9	11.6	65	NW			1		1			0.009	0.22	Clear	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.23	767 9	30.26	768.5	46.0	8.1	76	ESE	9.8	4.4			8ok		W	0	0	Covered	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7. 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; for Montsouris, the barometer reduced to freezing but not to sea-level. At Mirecourt the cloud direction is apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Barometer: Corrected for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg																			Prof. Dr. Hoh.
Berlin	30.07	763.8	30.24	768.1	51.6	10.9	77	NE			1		10			0	0		Prof. Arndt.
Breslau	29.71	754.7	30.25	768.3	55.2	12.9	73	SSE			0		4			0	0		Royal University Obs'y.
Carlsruhe	29.78	756.3	30.21	767.3	52.9	11.6	62	SE			1		5			0	0		Albert Senz.
Cassel	29.70	754.3	30.32	770.0	50.4	10.2	77	S			1		5	SSW		0	0		Dr. H. Möhl.
Crefeld	30.03	762.7	30.19	766.8	51.8	11.0	79	SE			2		2			0	0		Director Lose.
Emden	30.21	767.4	30.25	768.3	45.7	7.6	96	S			0		10			0	0		Prof. Prestel.
Frankfort on the Main	29.93	760.2	30.31	769.8	49.1	9.5		SSE			1		2			0	0		Physical Society.
Friedrichshafen	28.79	731.2	30.26	768.6	44.6	7.0	81	ENE			1		10	NE		0	0		M. Wilhelm.
Hamburg	30.15	765.9	30.23	767.7	49.6	9.8	89	WSW			2		10ks			0.008	0.2	Pleasant	Captain F. Hegemann.
Kiel	30.19	766.9	30.21	767.3	48.0	8.9	88	SW			2		10			0	0		Prof. G. Karsten.
Königsberg, (Prussia)	30.21	767.3	30.28	769.1	49.1	9.5	81	SE										Fair	Prof. E. Luther.
Kösiin			30.21	767.4	46.2	7.9		Calm			0		8			0	0		H. Müller.
Leipsic, Observatory	29.85	758.1	30.28	769.2	45.3	7.4	99	SW			1		10			0.012	0.3	Foggy	Prof. Bruhns.
Memel, Naval School	30.23	767.9	30.28	769.1	46.9	8.3	82	SE			2		8cs						Reinbrecht von Skalweit.
Neufahrwasser	30.22	767.6	30.24	768.0	50.9	10.5	80	S			3		10			0	0		A. Lothes.
Posen	29.95	760.7	30.24	768.1	53.8	12.1	78	SW			2		2					Clear	Dr. Magener.
Strassburg Obs., (in Alsace	29.69	754.1	30.25	768.4	48.0	8.9	80	Calm			0		4	SW		0	0		Dr. Schur.
Stuttgart	29.28	743.8	30.24	768.2	49.1	9.5	74	E			1		10	E		0	0		Prof. Schoder.
Treves, (Trier)	29.58	751.4	30.11	764.7	49.6	9.8	79	NW			2		8			0	0	Foggy	Prof. Flesch.
Weissenburg, (Bavaria)	28.69	728.6	30.24	768.0	43.5	6.4	93	N	2	1			10	NE		0.469	11.9	Dense fog	Dr. Von Bebber.
Wustrow, Naval School	30.23	767.8	30.28	769.1	47.3	8.5	92	ESE			2		8					Cloudy	E. F. Schütz.
German Naval Series.																			

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet: Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4, Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens

Athens	29.55	758.3	30.24	768.2	62.2	16.8		N			Strong							Clear	Dr. J. F. J. Schmidt.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and wind-force; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.97	761.1	30.02	762.4	84.1	28.9	44	W	12.0?	4.5?			8			0	0	D. clouds	
Deesa	29.55	750.5	30.02	762.5	86.0	30.0	43	Calm					0			0	0	Blue sky	
Bombay	29.91	759.7	29.95	760.7	82.5	28.1	63	NW	11.0	4.9			0			0	0	Blue sky	
Poona	27.92	709.3	29.93	760.1	79.9	26.6	47	ESE					0			0	0	Blue sky	
Lahore	29.27	743.3	30.03	762.7	70.7	21.5	53	Calm	4.0	1.8			0			0	0	Blue sky	
Belgaum	27.43	696.6	29.98	761.4	75.8	24.3	53	E	1.0	0.4			1	W		0	0	D. clouds	
Bangalore																			
Roorkee	29.07	738.3	29.98	761.4	75.8	24.3	33	NW	1.6	0.7			1			0	0		
Agra	29.41	747.0	29.98	761.5	80.7	27.1	45	W								0	0		
Trichinopoly																			
Nagpur	28.97	735.7	30.03	762.6	74.6	23.7	49	Calm	2.5	1.1			0			0	0	Blue sky	
Madras																			
Lucknow	29.61	752.1	29.99	761.6	76.5	24.7	56	W	2.1	0.9			2	E		0	0	D. clouds	
Allahabad	29.68	753.7	29.99	761.7	75.5	24.2	57	Calm	0.8	0.4			0			0	0	Blue sky	
Patna	29.82	757.3	30.00	762.0	76.5	24.7	56	W	1.1	0.5			0			0	0	Blue sky	
Hazaribagh	27.98	710.5	30.02	762.5	72.8	22.7	52	NW	4.2	1.9			1			0	0	Blue sky	
Cuttack	29.92	760.0	30.01	762.2	74.8	23.8	71	N	1.1	0.5			7		S	0	0	D. clouds	
Calcutta (Alipore)	29.99	761.7	30.01	762.2	71.5	21.9	83	N	1.0	0.4			2			0	0	D. clouds	
Goalpara	29.60	751.8	29.99	761.8	74.8	23.8	68	Calm	2.3	1.0			0			0	0	Blue sky	
Chittagong	29.90	759.6	30.00	761.9	76.9	24.9	59	Calm	2.1	0.9			8			0	0		
Sibsagar	29.69	754.2	30.04	763.0	67.0	19.4	83	ENE	1.8	0.8			2			0	0	Blue sky	
Rangoon																			
Jubbulpore	28.66	728.0	30.03	762.8	80.1	26.7	55	NE	1.8	0.8			0			0	0	Blue sky	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 1—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	22.19	563.6	30.07	763.8	29.7	— 1.3	74	E	.....	.....	6	.....	10	.....	.....	17.720*	450.0*	.....	Ab. Dom. Morgini.
Stelvio	22.21	564.2	30.13	765.4	29.7	— 1.3	.....	ESE	.....	.....	1	.....	6	NNE	.....	0.984	25.0	.....	Signora Ernesta Manfredi.
Udine	29.68	753.9	30.10	764.4	59.5	15.3	75	E	5.6	2.5	.....	.....	10	.....	.....	0.508	12.9	.....	Prof. Giovanni Clodig.
Padua	29.92	759.9	30.03	762.7	61.9	16.6	91	ESE	14.3	6.4	.....	.....	10	SE	.....	0.307	7.8	.....	Prof. Dott. Lorenzoni.
Vicenza	29.89	757.7	30.03	762.7	55.8	13.2	99	NNE	2.6	1.1	.....	.....	10	.....	.....	1.067	27.1	.....	Conte Alm. Da Schio.
Verona	29.88	757.6	30.05	763.3	61.9	16.6	69	NE	9.4	4.2	.....	.....	10	.....	.....	0.717	18.2	.....	Dott. B. Bertoncelli.
Bergamo	28.72	720.4	30.05	763.3	56.5	13.8	77	N	.....	.....	1	.....	9	.....	.....	1.862	47.3	.....	Prof. Trionfini Carlo.
Domodossola	29.04	737.5	30.09	764.2	46 6	8.1	99	Calm	.....	.....	0	.....	10	.....	.....	1.713	43.5	.....	Prof. Giuseppe Calza.
Milan	29.53	750.1	30.06	763.5	52.2	11.2	.....	WNW	.....	.....	1	.....	10	ESE	.....	0.874	22.2	.....	Ab. Gio. Capelli.
Pavia	29.69	754.2	30.05	763.2	50.7	10.4	97	SW	.....	.....	1	.....	10	.....	.....	0.362	9.2	.....	Prof. Gio. Cantoni.
Moncalieri	29.19	741.3	30.11	764.7	53.8	12.1	72	ESE	0	0	.....	.....	10	.....	.....	0.098	2.5	.....	Prof. P. F. Denza.
Mondovi	28.15	714.9	30.09	764.2	46.9	8.3	96	N	.....	.....	2	.....	10	.....	.....	0.169	4.3	.....	Prof. D. C. Bruno.
Porto Maurizio	29.74	755.4	29.97	761.1	58.5	14.7	57	N	.....	.....	2	.....	10	.....	.....	0.047	1.2	.....	Prof. L. Vassallo.
Genoa	29.80	757.0	29.97	761.3	55.8	13.2	68	N	12.5	5.6	.....	.....	10	NE	.....	0.976	24.8	.....	Prof. G. M. Garibaldi.
Placenza	29.78	756.5	30.04	763.0	51.8	11.0	92	NW	10.5	4.7	.....	.....	10	.....	.....	0.236	6.0	.....	Dott. G. Manzi.
Parma	29.74	755.4	30.04	763.0	56.8	13.6	97	NNW	.....	.....	6	.....	10	.....	.....	0.543	13.8	.....	Prof. P. Pigorini.
Florence	29.71	754.5	29.97	761.1	65 8	18.5	75	E	.....	.....	2	.....	9	.....	.....	2.539	64.5	.....	Cav. F. Meucci.
Leghorn	29.82	757.4	29.91	759.6	63.1	17.3	78	ENE	8.1	3.6	.....	.....	10	.....	.....	0.276	7.0	.....	Prof. P. Monte.
Siena	28.78	730.9	29.99	761.7	59.5	15.3	63	E	.....	.....	4	.....	9	E	.....	0.205	5.2	.....	Prof. L. Toscani.
Urbino	28.43	722.1	30.00	761.9	58.1	14.5	73	SE	.....	.....	4	.....	10	.....	.....	0.197	5.0	.....	Prof. P. Serpieri.
Pesaro	29.95	760.7	30.00	762.0	61.3	16.3	85	SE	6.8	2.8	.....	.....	10	S	.....	0.031	0.8	.....	Prof. Luigi Guidi.
Ancona	29.90	759.5	30.01	762.2	62.4	16 9	82	SE	.....	.....	6	.....	10	E	.....	0	0	.....	Prof. F. DeBosis.
Grosseto	29.81	757.1	29.92	759.9	63.7	17.6	67	ENE	.....	.....	2	.....	9	SE	.....	1.059	26.9	.....	Avv. P. Ponticelli.
Rome	29.78	755.2	29.91	759.7	60.4	15.8	81	E	6.3	2.8	.....	.....	10	.....	.....	0.091	2.3	.....	Prof. P. A. Secchi.
Naples, O. U.	29.66	753.1	29.93	760.2	69.1	20.6	50	SE	.....	.....	4	.....	10	S	.....	0.453	11.5	.....	Prof. L. Palmieri.
Lecce	.....	.....	.....	.....	63.7	17.6	73	ESE	28.6	12.8	.....	.....	9	.....	.....	0.130	3.3	.....	Prof. C. De Giorgi.
Cosenza	.....	.....	.....	.....	60.6	15.9	69	W	0	0	.....	.....	10	.....	.....	0.201	5.1	.....	Prof. F. D. Conti.
Cagliari	.....	.....	.....	.....	55.4	13.0	88	N	.....	.....	4	.....	10	.....	.....	0.539	13.7	.....	Prof. A. Pacinotti.
Riposto, (Sicily)	29.80	757.0	29.85	758.2	62.1	16.7	89	SE	.....	.....	6	.....	10	NE	.....	0.606	15.4	.....	Prof. F. Caffero.
Palermo	29.52	749.9	29.77	756.2	61.3	16.2	78	W	0.7	0.3	.....	.....	10	.....	.....	0.316	8.0	.....	Prof. G. Cacciatore.
Caltanissetta	27.86	707.5	29.80	756.9	54.7	12.6	89	E	.....	.....	4	.....	10	.....	.....	1.248	31.7	.....	Prof. A. Pagani.
Syracuse	29.78	756.3	29.85	758.2	66.9	19.4	77	SE	.....	.....	4	.....	10	SE	.....	0.929	23.6	.....	Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.41	747 0	29.97	761.1	62.2	16.8	74	SW	3.8	1.7	.....	.....	10	.....	.....	0	0	.....	Prof. F. Brioschi.

Note.—The originals give the wind-force on the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,543.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo 379.3 m., or 1,245.3 ft.; Monlovi, 156 m., or 1,824.2 ft.; Siena, 348.6 m., or 1,143.5 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft. *Unmelted snow.

JAPANESE SERIES.

Furnished by the cooperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Tokei (Yeddo)																			The Observatory.
Tokei (Yeddo) University	29.92	760.0	30.02	762.6	48	7.2	46	N	17	7.6	.....	1ks	.....	.....	.....	0	0	Fair	Prof. P. V. Veeder.

MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Aguascallientes																			I. N. Marin, M. D.
Córdoba																			C. Peña, M. D.
Cuernavaca																			L. Castillo, A. E.
Guadalajara																			Prof. L. Perez.
Guanajuato																			Prof. V. Fernandez.
Leon																			Prof. M. Leal.
Mexico	23.12	587.3	30.27	768 8	44.9	7.1	74	Calm	0	0	.....	0	2s	.....	... ..	0	0	Fair	Central Observatory.
Orizaba																			N. N.
Orizaba																			I. Orozco, M. D.
Pabellon, (Aguascalts)																			M. V. de Leon, M. E.
Puebla																			Prof. B. Gonzalez.
Toluca																			Prof. C. Velazquez.
Tlacotalpan																			Prof. F. R. Bayly.
San Luis Potosi																			G. Barroeta, M. D.
Vera-Cruz																			Prof. J. Rossell.
Zacatecas																			J. A. Bonilla, M. E.
Puebla, (Catholic Institute)																			P. Spina. [M. M. D. D
Morelia																			M. Tena, F. L. Páramo

Note.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,299 m., or 7,542.9 ft.; Orizaba, 1,221 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

Furnished by the cooperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing																			
Groningen	30.18	766.6	30.18	766.6	51.4	10.8	.....	S	.....	.....	2	.....	.....	.....	.....	0.008	0.2	.....	
Helder	30.13	765.4	30.19	766.8	48.9	8.3	.....	SW	.....	.....	2	.....	.....	.....	.....	0	0	.....	
Hellevoetsluis	30.12	765.1	30.12	765.1	50.0	10.0	.....	S	.....	.....	2	.....	.....	.....	.....	0	0	.....	
Utrecht	.....	.....	30.16	766.1	52.9	11.6	86	S	.....	.....	4	.....	.....	.....	.....	.....	.....	.....	
	30.15	765.8	30.20	767.0	50.4	10.2	83	S	.....	.....	2	.....	0	.....	.....	0	0	Clear	H. v d Bruk.

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	29.86	758.5	29.92	759.9	48.2	9.0	87	S	17.2	7.7	.....	.....	9	.....	.....	0.236	6.0	Light rain....	
Brôno	29.81	757.1	29.85	758.1	48.2	9.0	63	SE	7	3	.....	.....	5	.....	.....	0	0	.....	
Christiania	29.91	759.7	30.06	763.5	45.2	9.0	93	S	4	2	.....	.....	10	.....	.....	0.969	24.6	Light fog.....	
Tromsö	29.78	756.5	29.83	757.6	39.6	4.2	77	SW	4	2	.....	.....	10	.....	.....	0.228	5.8	.....	

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don. Luiz at Lisbon.

Angra, (Azores)	30.10	764.6	30.29	769.4	65.8	18.8	90	WSW	3.1	1.4	.....	.....	6	.....	.....	0	0	.....	Dr. J. A. Sampaio
Campo Major	29.26	743.2	30.30	769.6	54.3	12.4	68	WNW	4.3	1.9	.....	.....	10	.....	.....	0	0	.....	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.24	768.0	30.32	770.2	71.4	21.9	59	NW	3.8	1.7	.....	.....	1	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.90	759.5	30.26	768.7	56.8	13.8	99	SW	7.4	3.3	.....	.....	10	.....	.....	0.035	0.9	Raining.....	The Staff.
Ponta Delgada, (Azores)	30.28	769.2	30.35	771.0	68.4	20.2	76	SW	7.4	3.3	.....	.....	6	.....	.....	0	0	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m

Naval Series. Vessels.	Sea or swell. Height scale 0–9	Sea or swell. Direction from—		
S. S. India.				A. D. Pedroso, Com'd't. Lt. S. A. P. de Mirando.
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.92	759.9	30.35	770.9	50.4	10.2	74	SE	13	6	.....	.....	8	.....	.....	.....	.....	.....	Astronomical Obs.
Wilna	30.09	764.3	30.53	775.4	41.0	5.0	83	SSE	11	5	.....	.....	10	.....	.....	.....	.....	.....	Astronomical Obs.
Dorpat	30.25	768.4	30.50	774.8	39.9	4.4	82	S	9	4	.....	.....	10	.....	.....	.....	.....	.....	Prof. Dr. Weihrauch
St. Petersburg	30.57	776.5	30.59	776.9	36.1	2.3	85	S	13	6	.....	.....	10	.....	.....	.....	.....	.....	Central Physical Obs.
Kuopio	30.06	763.5	30.39	772.0	38.1	3.4	100	S	34	15	.....	.....	10	.....	.....	.....	.....	Raining.....	Ch. Forsten.
Kieff	30.02	762.6	30.70	779.7	36.9	2.7	77	SE	9	4	.....	.....	7	.....	.....	.....	.....	.....	Physical Cabinet.
Nikolaiev	30.57	776.4	30.64	778.2	41.4	5.2	66	E	9	4	.....	.....	0	.....	.....	.....	.....	.....	Kurdakof.
Kertch	30.50	774.7	30.52	775.2	46.2	7.9	78	ENE	18	8	.....	.....	6	.....	.....	.....	.....	.....	Lagorio.
Moscow	30.31	769.9	30.90	784.8	34.9	1.6	69	S	7	3	.....	.....	2	.....	.....	.....	.....	.....	Meteorological Obs.
Lugan	30.57	776.4	30.78	781.9	35.1	1.7	45	E	22	10	.....	.....	0	.....	.....	.....	.....	.....	Meteorological Obs.
Archangel	30.55	775.9	30.57	776 4	32.7	0 4	89	S	22	10	.....	.....	10	.....	.....	.....	.....	.....	Ogorodnikof.
Tiflis	29.68	738.7	30.54	775.8	48.6	9.2	86	Calm	0	0	.....	.....	10	.....	.....	.....	.....	Raining.....	Physical Observatory.
Astrakhan	30.95	786.2	30.87	784.1	28.6	— 1.9	54	NE	4	2	.....	.....	1	.....	.....	.....	.....	.....	Sebastianof.
Kasan	30.53	775.4	30.82	782.8	25.9	— 3.4	74	NW	7	3	.....	.....	10	.....	.....	.....	.....	.....	Physical Cabinet.
Orenburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Tschernischei.
Ekaterinburg	29.48	748.8	30.49	774.4	24.1	— 4.4	86	NW	7	3	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Nukuss	30.23	767.8	30.48	774.1	30.9	— 0.6	92	N	18	8	.....	.....	10	.....	.....	.....	.....	.....	
Kasaly	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Bobrof.
Tashkend	28.56	725.3	30.31	769.8	45.7	7.6	98	Calm	0	0	.....	.....	10	.....	.....	.....	.....	Raining.....	Michelson.
Barnaul	29.83	757.7	30.41	772.5	6.3	—14.3	87	NW	0	0	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Yeniseisk	30.04	762.9	30.39	771.8	11.7	—11.3	87	SW	4	2	.....	.....	10	.....	.....	.....	.....	Snowing.....	Marks.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Usolzef.
Oorga	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Mossin.
Peking, (China)	30.07	763.7	30.21	767.3	36.9	2.7	51	Calm	0	0	.....	.....	1	.....	.....	.....	.....	.....	Physical Observatory.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nikolaievsk, on the Amoor	.....	.....	.....	.....	10.4	—12.0	85	W	9	4	.....	.....	10n	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Ekaterinburg, 305. 4? m., or 1,005.2? ft.; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 552.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Rave, Director.
Bilbao, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Manuel de Naveran
Burgos, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Domingo Martin y Perez.
Madrid, Royal Observatory	27.97	710.5	30.24	768.0	53.6	12.0	51	S	2.2	1.00	.....	0	0	.....	.....	0	0	Cloudy.....	The Staff.
Murcia, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Olayo Diaz, Director.
Santiago, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	30.05	763.3	30.12	765.0	71.7	22.1	85	ESE	8.9	4.0	.....	0	1k	.....	E	0.094	2.4	Clear	Benito Vines, S. J.
San Fernando, Naval Obs'y	30.19	766.9	30.29	769.4	57.7	14.3	52	NNW	12.9	5.8	.....	0	5	.....	N	0	0	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.	.....	.....	29.91	759.6	77.0	25.0	92	NE	10.0	4.89	.....	5n	5n	NE	NE	2.018	51.25	Overcast.....	Leonardo de Tejeda, Chief of Engineers.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the cöoperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Low'r 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—.	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	30.23	767.7	30.26	768.7	37 8	3.2	.....	S	.....	.....	4	.....	4	.....	.....	0	0	.....	
Umea	30.12	765.0	30.17	766.3	39.9	4.4	100	S	.....	.....	6	.....	10	.....	.....	0.528	13.4	Raining	
Hernosand	30.05	763.2	30.10	764.5	41.4	5.2	97	S	.....	.....	4	.....	9	.....	.....	0.445	11.3	Raining.....	
Stockholm	29.93	760.2	30.11	764.7	45.0	7.2	89	SSW	.....	.....	2	.....	10	.....	.....	0.067	1.7	Foggy	
Wisby	30.08	763.9	30.13	765.4	40.8	8.2	99	S	.....	.....	4	.....	7	.....	.....	0.010	0.4	.....	
Sub-Series.																			
Upsala	30.03	762.8	30.11	764.7	45.0	7.2	91	S	10.3	4.6	.....	.....	10	...	.....	0.015	0.39	.....	Dr. Hildebrandsson.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the cooperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.72	729.5	30.17	766.2	47.8	8.8	70	NE	.....	.....	4	.....	7	.....	.....	0	0	Cloudy.....	The Observatory.
Zurich	28.57	725.6	30.24	768.1	43.9	6.6	84	E	.....	.....	2	.....	10	.....	.....	0.039	1.0	Covered	The Observatory.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—For Geneva the corresponding departures from the normal values are: Barometer, +3.2 mm.; Thermometer, +1.8 cent.; Relative Humidity, —7 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	30.38	771.6	56.1	13.4	76	N	14	6.5	.....	.....	9	.....	NE	0	0	.....	The Observatory.
Fao, (Persian Gulf)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salonica	.....	.....	30.39	772.0	61.8	16.3	.....	N	.....	.....	1	.....	5	.....	.....	.....	.....	.....	B. Stefanides.
Valona	.....	.....	30.18	766.6	67.6	19.8	.....	S	.....	.....	1	.....	5	.....	.....	0	0	Cloudy.....	A. Bertrand.
Varna	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Imperial Observatory.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.05	760.7	30.07	763.7	68.2	20.1	49	N	.....	.....	2	.....	0	.....	.....	0	0	Blue sky.....	Prof. C. V. A. Van Dyck

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	30.20	767.1	30.26	768.6	16.0	— 8.9	95	SW	4.5	2.0	.....	0	.....	.....	.....	0	0	.....	Hon. J. Ferguson.
Brockville, Ontario	.....	.....	30.21	767.3	35	1.7	.....	S	1	0.4	.....	0	2s	.....	SW	0	0	Fair.....	W. R. Bigg.
*Chatham, N. B	.....	.....	30.33	770.4	16	— 8.9	91	SW	5	2.2	.....	2k	2ks	N	N	0	0	Fair.....	G. A. Blair.
Charlottetown, P. E. Island	.....	.....	30.39	771.9	25	— 3.9	76	W	3	1.3	.....	0	0	.....	.....	0.050	1'27	Clear.....	H. J. Cundall, C. E.
Cornwall, Ontario	29.94	760.5	30.14	765.5	22.0	— 5.1	100	NW	.....	.....	1	0	0	.....	.....	0	0	Bright.....	James Smith, M. A.
Dalhousie, N. B	30.20	767.1	30.23	767.8	16.7	— 8.5	96	W	.....	.....	1	.....	.....	.....	.....	0	0	Gloomy.....	H. A. Johnson.
Esquimault, B. C	29.87	758.7	29.92	760.0	44.3	6.8	92	N	.....	.....	.....	.....	10	.....	.....	.....	.....	Cloudy.....	W. H. Bovis.
*Father Point, Quebec	.....	.....	30.15	765.8	28	— 5.0	86	SW	10	4.5	.....	.....	10s	.....	Calm	Inap.	Inap.	Cloudy.....	J. McWilliams.
Fredericton, N. B	30.34	770.6	30.41	772.4	19.3	— 7.1	92	NW	4.0	1.8	.....	.....	10s	.....	.....	0	0	Cloudy.....	Prof. Harrison.
*Fort Garry, Manitoba	.....	.....	30.02	762.5	21	— 6.1	93	SW	1	0.4	.....	0	2s	.....	Calm	0	0	Fair.....	James Stewart.
Goderich, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	H. J. Strang, M. A
Granton, Ontario	29.03	737.3	30.16	766.1	39.1	3.9	82	SE	.....	.....	1	1c	0	E	.....	0	0	Clear.....	James Grant.
*Halifax, N. S	30.30	769.6	30.44	773.2	24	— 4.4	63	W	3	1.3	.....	2cs	0	.....	.....	Inap.	Inap.	Fair.....	F. Allison, M. A.
Hamilton, Ontario	29.86	758.4	30.24	768.1	45.5	7.5	78	N	.....	.....	2	5cs	.....	N	.....	0	0	Cloudy...	Geo. Dickson, M. A
Henrt's Content, N. F	30.06	763.5	30.09	764.3	24	— 4.4	86	NW	.....	.....	4	0	2ks	.....	NW	0	0	Fine.....	E. Weedon.
*Kingston, Ontario	29.87	758.7	30.21	767.3	44	6.7	81	S	8	3.6	.....	Haze	0	Calm	.....	0	0	Clear.....	S. Woods, M. A.
Little Glace Bay, N. S	30.31	769.9	30.36	770.9	31.5	— 0.3	95	NW	8	3.6	.....	4k	.....	NW	.....	0	0	Fair.....	C. H. Rigby.
*Montreal, Quebec	29.99	761.0	30.17	766.3	32	0.0	81	S	18	8.0	.....	5c	Sm'e	W	.....	0	0	Cloudy.....	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.35	745.5	30.07	763.8	38	3.3	92	SE	6	2.7	.....	5k	5ks	SE	SE	0	0	Cloudy.....	Rev. R. Mosley.
Peterboro, Ontario	29.39	746.5	30.17	766.3	33.2	0.7	72	Calm	.....	.....	0	0	8ks	.....	.....	0	0	Hazy.....	J. F. Jeffers, B. A.
Port Dover, Ontario	29.49	749.0	30.19	766.8	44	6.7	84	S	7	3.1	.....	10ck	0	S	.....	0	0	Fair.....	H. Morgan.
Port Hastings, N. S	30.32	770.1	30.38	771.6	30.7	— 0.7	.....	NW	6	2.7	.....	.....	.....	.....	.....	0	0	Fine.....	Peter Grant.
Port Stanley, Ontario	29.52	749.8	30.17	766.3	45	7.2	90	W	10	4.5	.....	8k	0	W	.....	0	0	Fair.....	M. Payne.
*Quebec, Quebec	29.88	758.9	30.23	767.8	27	— 2.8	76	Calm	0	0	.....	.....	8ks	.....	Calm	0	0	Cloudy.....	Capt. Ashe, R. N
*Rockliffe, Ontario	29.60	751.8	30.08	764.0	27	— 2.8	88	E	8	3.6	.....	.....	8ks	.....	W	0	0	Fair.....	W. H. McIntyre.
St. John, N. B	30.27	768.8	30.45	773.4	21	— 6.1	85	Calm	0	0	.....	7ks	0	.....	.....	0	0	Fine.....	G. Murdock, C. E.
*Saugeen, Ontario	29.34	745.2	30.06	763.3	47	8.3	79	SW	7	3.1	.....	.....	10ks	.....	W	0	0	Cloudy.....	K. Stewart.
Stayner, Ontario	.....	.....	30.08	764.0	43	6.1	63	SW	15	6.7	.....	.....	8n	.....	W	0	0	Cloudy.....	R. J. Cole.
Stratford, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	C. J. MacGregor, M. A.
*Sydney, C. B	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0	.....	
*Toronto, Ontario	30.33	770.4	30.36	771.1	33	0.6	80	SW	4	1.8	.....	10k	0	NW	.....	0.01	0.3	Cloudy.....	T. C. Hill.
Windsor, N. S	29.79	756.7	30.10	766.8	34	1.1	92	E	4	1.8	.....	2c	5s	W	W	0	0	Cloudy.....	Magnetic Observatory.
Woodstock, Ontario	30.29	769.4	30.39	771.9	21.5	— 5.8	93	SW	4	1.8	.....	2cs	0	.....	.....	0	0	Clear.....	Prof. John E. Oram.
Sub-Series.																			J. Montgomery.
St. Johns, Newfoundland	.....	.....	.....	.....	27.0	— 2.8	.....	NW	.....	.....	.....	10k	10s	.....	.....	0.32	8.1	Cloudy.....	John Delany
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

1877.—November 14.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	30.13	765.3	30.37	771.4	34	1.1	79	NW	8	3.6		0	Haze		Calm	0	0	Clear.	
Alpena, Michigan	29.33	745.0	29.98	761.5	47	8.3	69	SW	6	2.7			10s		SW	0	0	Cloudy	
Atlantic City, New Jersey	30.45	773.4	30.46	773.7	50	10.0	77	S	8	3.6		0	0			0	0	Clear	
Augusta, Georgia	30.25	768.3	30.45	773.4	37	2.8	95	E	1	0.4		Haze	Sm'e	Calm	E	0	0	Smoky	
Baltimore, Maryland	30.40	772.1	30.45	773.4	38	3.3	71	SE	1	0.4		Haze	Fog	Calm	Calm	0	0	Foggy	
Barnegat, New Jersey	30.44	773.2	30.46	773.7	51	10.6	72	S	13	5.8		0	2s		S	0	0	Clear	
Bismarck, Dakota	28.19	716.0	29.94	760.5	25	— 3.9	87	W	1	0.4			Sm'e		SW	0	0	Dense smoke	
Boise City, Idaho	27.24	691 9	29.87	758.7	45	7.2	67	NE	12	5.4			10s		Calm	0	0	Cloudy	
Boston, Massachusetts	30.28	769.1	30.44	773.2	40	4.4	65	SW	10	4.5		8c;cs	Fog			0	0	Fair	
Brackettville, Texas	28.91	734.3	29.94	760.5	55	12.8	80	SE	2	0.9		0	0			0	0	Clear	
Breckenridge, Minnesota	28.99	736.3	30.04	763.0	24	— 4 4	87	NW	2	0.9		0	0			0	0	Clear	
Brownsville, Texas	29.94	760.5	30.01	762.2	67	19.4	90	S	2	0.9		0	0			0.17	4.3	Clear	
Buffalo, New York	29.47	748.5	30.18	766.6	46.0	7.8	69	S	8	3.6		5cs	2s	SW	SW	0	0	Fair	
Burlington, Vermont	30.01	762.2	30.28	769.1	38	3.3	62	S	16	7.2		2c	0	SW		0	0	Fair	
Cairo, Illinois	29.73	755.1	30.12	765.0	55	12.8	74	S	16	7.2			10s		S	0	0	Cloudy	
Camp Grant, Arizona	25.30	642.6	30.10	764.5	40	4.4	31	N			1	0	0			0	0	Clear	
Camp Verde, Arizona	26.93	684.0	30.42	772.7	32	0.0	79	Calm				0	0			0	0	Clear	
Campo, California																			
Cape Hatteras, N. Carolina	30.37	771 4	30.38	771.6	55	12.8	87	NE	4	1.8		0	0			0	0	Clear	
Cape Henry, Virginia	30.43	772.9	30.46	773.7	49	9.4	71	N	4	1.8		0	0			0	0	Clear	
Cape Lookout, N. Carolina	30.43	772.9	30.45	773.4	52	11.1	86	NE	11	4.9		0	0			0	0	Clear	
Cape May, New Jersey	30.43	772.9	30.46	773.7	52	11.1	79	S	12	5.4		0	0			0	0	Clear	
Charleston, South Carolina	30.36	771.1	30.43	772.9	51	10.6	72	N	5	2.2		0	0			0	0	Clear	
Cheyenne, Wyoming	24.05	610.9	29.99	761.7	28	— 2.2	77	W	4	1.8		0	0			0	0	Clear	
Chicago, Illinois	29.30	744 2	30.00	762.0	48	8.9	56	SW	12	5.4		10k	0	SW		0	0	Cloudy	
Cincinnati, Ohio	29.54	750.3	30.20	767.1	41	5.0	74	SE	2	0.9		2cs	Fog	SE	SE	0	0	Fair	
Cleveland, Ohio	29.51	749.5	30.26	768.6	40	4.4	48	E	12	5.4			10s		Calm	0	0	Cloudy	
Concho, Texas	28.23	717.0	29.97	761.2	40	4.4	72	SW	4	1.8		0	0			0	0	Clear	
Corsicana, Texas	29.55	750.6	30.02	762.5	56	13.3	87	NW	6	2.7		Haze	2s	Calm	Calm	0.79	20.1	Fair	
Davenport, Iowa	29.32	744.7	29.96	761.0	59	10.0	78	Calm	0	0			10n		Calm	Inap.	Inap	Light rain	
Denison, Texas	29.22	742.2	30.02	762.5	51	10.6	78	NW	7	3.1		0	0			0.23	5.8	Clear	
Denver, Colorado	24.83	630.7	30.05	763.3	31	— 0.6	79	SE	6	2.7		0	6s		Calm	0.01	0.3	Fair	
Detroit, Michigan	29.45	748.0	30.14	765.5	41	5.0	73	S	8	3.6		2c	2s	W	Calm	0	0	Fair	
Dodge City, Kansas	27.36	694.9	29.69	754.1	40	4.4	65	N	32	14.3			10s		N	0.13	3.3	Cloudy	
Dubuque, Iowa	29.23	742.4	29.93	760.2	48	8.9	85	S	2	0.9			10s		Calm	0	0	Cloudy	
Duluth, Minnesota	29.28	743.7	29.98	761.5	37	2.8	80	NE	4	1.8		0	2s		NE	0	0	Fair	
Eagle Pass, Texas	29.29	744.0	30.04	763.0	56	13.3	81	NW	5	2.2			10s		NW	0	0	Cloudy	
Eastport, Maine	30.32	770.1	30.39	771.9	35	1.7	61	SW	4	1.8		10ck	Haze	NW	Calm	0	0	Cloudy	
Erie, Pennsylvania	29.47	748.5	30.20	767.1	47	8.3	48	S	8	3.6		8c	2s			0	0	Cloudy	
Escanaba, Michigan	29.27	743.4	29.93	760.2	42	5.6	83	SW	4	1.8			10s		SW	0	0	Cloudy	
Florence, Arizona	28.52	724.4	30.12	765.0	40	4.4	56	Calm				0	0			0	0	Clear	
Fort Bayard, New Mexico	24 13	612.9	30.13	765.3	35	1.7	52	NE	6	2.7		0	0			0	0	Clear	
Fort Craig, New Mexico	25.67	652.0			32	0.0	79	W	1	0.4		0	0			0	0	Clear	
Fort Gibson, Indian Ter	29.34	745.2	29.88	758.9	62	10.6	78	SW	9	4.0		0	2s		SW	0.66	16.8	Clear	
Fort Griffin, Texas	28.83	732.3	30.13	765.3	45	7.2	68	NW	4	1.8			10s		Calm	0	0	Cloudy	
Fort St. Michael, Alaska																			
Fort Sill, Indian Territory	28.76	730.5	29.87	758.7	49	9.4	93	NW			1	0	Sm'e		Calm	0	0	Fair	
Galveston, Texas	30.02	762.5	30.06	763.5	68	20.0	90	S	9	3.6			10s		Calm	0	0	Cloudy	
Grand Haven, Michigan	29.34	745.2	29.99	761.7	50	10.0	78	S	15	6.7		2cs	4s	SW	SW	0	0	Fair	
Indianapolis, Indiana	29.36	745.7	30.15	765.8	45	7.2	68	S	5	2.2			10s		SW	0	0	Cloudy	
Indianola, Texas	30.04	763.0	30.07	763.8	66	18.9	95	S	6	2.7		5c	2ks	Calm	S	0.27	6.9	Fair	
Jacksboro, Texas																			
Jacksonville, Florida	30.30	769.6	30.32	770.1	57	13.9	87	NE	5	2.2		0	0			0	0	Clear	
Keokuk, Iowa	29.25	742.9	29.86	758.4	48	8.9	100	SE	8	3.6			10n		Calm	0.17	4.3	Light rain	
Key West, Florida	30.12	765.0	30.15	765.8	70.5	21.4	79	NE	16	7.2		2cs	2s	SE	SE	Inap.	Inap.	Fair	
Kittyhawk, North Carolina	30.45	773.4	30.48	774.2	48	8.9	92	NE	2	0.9		0	0			0	0	Clear	
Knoxville, Tennessee	30.35	770.9	30.41	772.4	33	0.6	89	Calm	0	0		5c	Fog	Calm	Calm	0	0	Dense fog	
La Crosse, Wisconsin	29.14	740.1	29.87	758.7	46	7.8	100	S	3	1.3			10n		Calm	0.01	10.3	Light rain	
La Mesilla, New Mexico	26.21	665.7	30.36	771.1	35.5	1.9	65	Calm	0	0		0	0			0	0	Clear	
Laredo, Texas					57	13.9	87	Calm	0	0		0	0			0	0	Clear	
Leavenworth, Kansas	28.93	734.8	29.76	755.9	52	11.1	93	NE	2	0.9			10n		NE	0.53	13.5	Light rain	
Los Angeles, California	29.76	755.9	30.10	764.5	53	11.7	53	N	4	1.8		0	0			0	0	Clear	
Louisville, Kentucky	29.63	752.6	30.20	767.1	48	8.9	62	S	6	2.7		8c	Fog	SW	Calm	0	0	Fair	
Lynchburg, Virginia	29.72	754.9	30.44	773.2	40	4.4	56	SE	2	0.9		0	Haze		Calm	0	0	Hazy	
Maricopa Wells, Arizona					34	1.1	52	E				0	0			0	0	Clear	
Marquette, Michigan	29.19	741.4	29.89	759.2	43	6.1	67	S	2	0.9			10s		Calm	0	0	Cloudy	
Mason, Texas	28.46	722.9	30.24	768.1	50	10.0	52	NW	4	1.8		0	2s			0	0	Clear	
Memphis, Tennessee	29.79	756.7	30.10	764.5	56	13.3	81	S	8	3.6			10s		SW	0	0	Cloudy	
Milwaukee, Wisconsin	29.28	743.7	29.96	761.0	47	8.3	85	SW	8	3.6			10n		SW	Inap.	Inap.	Light rain	
Mobile, Alabama	30.23	767.8	30.27	768.8	58	14.4	90	N	4	1.8		2c	5s	W	S	0	0	Fair	
Montgomery, Alabama	30.11	764.8	30.36	771.1	51	10.6	86	SE	5	2.2		10ck	Sm'e	SW	Calm	0	0	Cloudy	
Morgantown, West Virginia	29.24	742.7	30.36	771.1	33	0.6	79	Calm	0	0		8c	Sm'e	NW		0	0	Fair	
Mt. Washington, N. H.	23.84	605.5	30.20	767.1	20	— 6.7	70	NW	72	32.2		5cs	0	SE		0	0	Fair	
Nashville, Tennessee	29.70	754.4	30.25	768.3	47	8.3	77	SE	6	2.7		2c	0	Calm		0	0	Clear	
New Haven, Connecticut	30.32	770.1	30.44	773.2	43	6.1	67	SW	3	1.3		2k	2s	SW	SW	0	0	Fair	
New London, Connecticut	30.42	772.7	30.47	773.9	40	4.4	82	SW	10	4.5		7cs	8s;ks	NE	SW	0	0	Cloudy	
New Orleans, Louisiana	30.12	765.0	30.18	766.6	63	17.2	89	E	9	4.0		6c;k	2s	N;SW	Calm	0	0	Cloudy	
Newport, Rhode Island	30.42	772.7	30.48	774.2	45	7.2	68	SW	8	3.6		5c	4ks	SW	SW	0	0	Cloudy	
New York, New York	30.28	769.1	30.46	773.7	42	5.6	75	SW	4	1.8		5c	Fog	Calm		0	0	Fair	
Norfolk, Virginia	30.42	772.7	30.48	774.2	40	4.4	100	SE	1	0.4			Fog		Calm	0	0	Foggy	
North Platte, Nebraska	27.12	688.8	29.76	755.9	33	0.6	69	NW	8	3.6		0	0			0	0	Clear	
Olympia, Washington Ter.	29.90	759.4	29.94	760.5	48	8.9	92	S	2	0.9			10s		Calm	0.38	9.7	Cloudy	
Omaha, Nebraska	28.76	730.2	29.82	757.4	47	8.3	100	N	6	2.7			Fog		Calm	0.06	1.5	Foggy	
Oswego, New York	29.90	759.4	30.24	768.1	43	6.1	53	SE	6	2.7		8c	Sm'e	NW		0	0	Fair	
Pembina, Dakota	29.17	740.9	30.03	762.7	25	— 3.9	85	NW	2	0.9		0	2s		Calm	0	0	Clear	
Philadelphia, Pennsylvania	30.42	772.7	30.48	774.2	44	6.7	84	S	1	0.4			Fog		Calm	0	0	Foggy	
Phœnix, Arizona					38	3.3	71	Calm				0	0			0	0	Clear	
Pike's Peak, Colorado	17.73	450.3	29.94	760.5	4	—15.6	74	N	1	0.4		0	0			0.12	3.0	Clear	
Pioche, Nevada	24.16	613.6	29.93	760.2	29	— 1.7	66	Calm	0	0		0	2s		Calm	0	0	Fair	
Pittsburg, Pennsylvania	29.45	748.0	30.30	769.6	32	0.0	89	SE	1	0.4			Fog		Calm	0	0	Foggy	
Port Huron, Michigan	29.44	747.8	30.12	765.0	41	5.0	74	S	9	4.0		5cs	0	Calm		0	0	Fair	
Portland, Maine	30.35	770.9	30.40	772.1	36	2.2	61	SW	11	4.9		10k	Haze	Calm		0	0	Cloudy	
Portland, Oregon	29.95	760.7	30.05	763.3	48	8.9	92	Calm	0	0			8s		Calm	0.53	13.5	Cloudy	
Prescott, Arizona	24.92	633.0	30.28	769.1	24	— 4.4	74	Calm				0	0			0	0	Clear	
Punta Rassa, Florida	30.20	767.1	30.22	767.6	64	17.8	73	NE	12	5.4		0	0			0	0	Clear	
Red Bluff, California	29.80	756.9	30.16	766.1	51	10.6	86	N	2	0.9			10n		Calm	Inap	Inap.	Light rain	
Rochester, New York	29.57	751.1	30.19	766.8	44	6.7	45	SW	8	3.6		2c	2s	Calm	W	0	0	Fair	
Roseburg, Oregon	29.45	748.0	30.02	762.5	46.5	8.1	100	Calm	0	0			10s		Calm	1.00	25.4	Cloudy	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instru'm'tal error and temperature. Inches.	Barometer. Corrected for instru'm'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Sacramento, California	30.08	764.0	30.16	766.1	51	10.6	78	E	4	1.8	.....	2c	0	W	.....	0	0	Fair	
St. Louis, Missouri	29.44	747.8	30.01	762.2	50	10.0	86	S	12	5.4	.....	.....	10n	.....	.....	0.19	4.8	Light rain	
St. Marks, Florida	30.30	769.6	30.32	770.1	55	12.8	87	E	8	3.6	.....	0	0	.....	.....	0	0	Clear	
St. Paul, Minnesota	29.03	737.3	29.87	758.7	38	3.3	90	NW	6	2.7	.....	1c	5s	Calm	Calm	0	0	Fair	
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salt Lake City, Utah	25.73	653.5	30.06	763.5	33	0.6	79	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
San Antonio, Texas	29.34	745.2	29.92	760.0	60	15.6	100	E	2	0.9	.....	2c	2ks	Calm	E	0	0	Fair	
San Diego, California	30.05	763.3	30.12	765.0	52	11.1	72	N	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Sandusky, Ohio	29.60	749.3	30.19	766.8	43	6.1	67	S	14	6.3	.....	5c	Sm'e	Calm	Calm	0	0	Fair	
Sandy Hook, New Jersey	30.43	772.9	30.46	773.7	47	8.3	85	S	15	6.7	.....	5c	Haze	NW	.....	0	0	Fair	
San Francisco, California	30.10	764.5	30.17	766.3	50	10.0	86	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Santa Fé, New Mexico	23.34	592.8	29.88	758.9	29	—1.7	76	NE	1	0.4	.....	0	Haze	.....	.....	0	0	Clear	
Savannah, Georgia	30.31	769.9	30.40	772.1	50	10.0	78	NE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Shreveport, Louisiana	29.86	758.4	30.07	763.8	60	15.6	94	SW	8	3.6	.....	.....	10n	.....	Calm	0.26	6.6	Light rain	
Smithville, North Carolina	30.40	772.1	30.44	773.2	48	8.9	85	N	7	3.1	.....	0	0	.....	.....	0	0	Clear	
Springfield, Massachusetts	30.23	767.8	30.37	771.4	32	0.0	79	Calm	0	0	.....	.....	10ks	.....	SW	0	0	Cloudy	
Stanwix, Arizona	.....	.....	.....	.....	37	2.8	63	NW	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Stockton, Texas	27.14	689.3	30.14	765.5	38	3.3	63	Calm	0	0	.....	0	1s	.....	Calm	0	0	Clear	
Thatcher's Island, Mass	30.30	771.9	30.44	773.2	43	6.1	66	SW	24	10.7	.....	10cs;k	0	SW	.....	0	0	Cloudy	
Toledo, Ohio	29.46	748.3	30.14	765.5	45	7.2	60	S	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Tucson, Arizona	27.64	702.0	30.18	766.6	34	1.1	79	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Tybee Island, Georgia	30.36	771.1	30.39	771.9	58	14.4	76	NE	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Umatilla, Oregon	29.70	754.4	.....	.....	44	6.7	92	W	4	1.8	.....	.....	10n	.....	Calm	0.34	8.6	Light rain	
Vicksburg, Mississippi	29.89	759.2	30.15	765.8	60	15.6	88	SE	16	7.2	.....	5c	0	SW	.....	0	0	Fair	
Virginia City, Montana	24.25	615.9	29.73	755.1	30	—1.1	89	SE	2	0.9	.....	.....	10s	.....	Calm	0	0	Cloudy	
Visalia, California	29.82	757.4	30.21	767.3	41	5.0	91	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Washington, D. C.	30.35	770.9	30.46	773.7	32.5	0.3	89	Calm	0	0	.....	0	Sm'e	.....	Calm	0	0	Dense smoke	
Wickenburg, Arizona	.....	.....	.....	.....	29	—1.7	24	N	.....	.....	.....	2c	0	Calm	.....	0	0	Fair	
Wilmington, N. Carolina	30.36	771.1	30.44	773.2	47	8.3	77	NE	4	1.8	.....	0	Fog	.....	NE	0	0	Clear	
Winnemucca, Nevada	25.73	653.5	30.09	764.3	38	3.3	63	S	8	3.6	.....	.....	10s	.....	S	0	0	Cloudy	
Wood's Holl, Mass	30.44	773.2	30.50	774.7	46	7.8	77	S	16	7.2	.....	0	2s	.....	S	0	0	Fair	
Yankton, Dakota	28.70	729.0	30.04	763.0	30	—1.1	89	NW	6	2.7	.....	0	Fog	.....	Calm	0	0	Clear	
Yuma, Arizona	29.99	761.7	30.16	766.1	46	7.8	25	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
SUB-SERIES.																			
York Factory, B. A.	29.39	746.5	29.44	747.8	20.5	—6.4	100	NW	21	9.4	.....	.....	10n	.....	.....	0.75	19.1	Snowing	J. Fortescue, W. Wood.
Havana, Cuba, W. I.	30.05	763.3	30.07	763.8	73	22.8	80	SE	2.4	1.1	.....	0	4ks	.....	E	0.10	2.5	Fair	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.08	764.0	30.09	764.3	78	25.6	76	Calm	0	0	.....	5c	2n	SE	SE	0.16	4.1	.....	James Gall.
Navassa, W. I.	29.81	757.2	29.89	759.2	81	27.2	.....	NE	15	6.7	.....	.....	.....	.....	.....	0.40	10.2	Clear	F. M Everett.
St. Thomas, W. I.	.....	.....	.....	.....	80	26.7	87	E	2	0.9	.....	.....	8n	.....	.....	0.25	6.3	Cloudy	G. O. Gellich.
Paramaribo, D. Guiana, S. A.	.....	.....	29.96	761.0	84	28.9	75	E	.....	.....	2	0	8k	.....	.....	0	0	Clear	C. J. Hering.
Batavia, Dutch Guiana, S. A.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Dr. H. Groot.
Medellin, Colombia, S. A.	25.18	639.6	.....	.....	67.0	19.4	78	SW	.....	.....	1	3cs;k	0	.....	.....	0	0	Fair	Thomas Herran.
Honolulu, Oahu, H. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Daniel Smith.
Makawao, Maui, H. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters: Boise City, 2,660 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.5 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.: Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.: Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,295 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.: Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,323 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.86 in.; Pike's Peak, 12.21 in; Pioche, 5.77 in.; Prescott, 5.86 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard Mare Island, Cal.	30.25	768.3	47	8.3	44	6.7	92	Calm	0	0	.....	.....	3s	.....	Calm	0	0	.....	.....	.....	
Navy Yard, Pensacola, Fla.	30.38	771.6	.....	.....	60	15.6	94	NE	9	4.0	.....	.....	10	.....	.....	0.03	0.8	.....	.....	Raining.....	
Navy Yard, Portsmouth, N.H	30.42	772.7	65	18.3	34	1.1	79	SW	.....	.....	1	.....	.....	.....	.....	0	0	.....	.....	Clear	
Naval Hospital, Yokohama, Japan.....	29.88	758.9	55	12.8	46	7.8	54	NNW	.....	.....	6	.....	8k	.....	SW	0.05	1.3	.....	.....	Cloudy.....	
Adams. Punta Arenas, Patagonia.	29.66	753.4	43	6.1	44	6.7	76	WSW	.....	.....	6	.....	4	.....	W	Light	Light	Moderate.	WSW	D. clouds.....	
Alert. Yokohama, Japan.....	30.02†	762.5†	49	9.4	49	9.4	100	N	.....	.....	6	.....	5	.....	N	.....	.....	Smooth	.....	D. clouds.....	
Alliance, Constantinople, Turkey.	30.29	769.4	71	21.7	59	15.0	88	NNE	.....	.....	3	.....	10	.....	NE	.....	.....	.....	.....	Overcast.....	
Ashuelot. Tientsin, China.....	30.14	765.5	47	8.3	38	3.3	45	NE	.....	.....	1	.....	3	.....	.....	.....	.....	Smooth	.....	D. clouds.....	
Canonicus, New Orleans, La.....	30.18	766.6	48	8.9	66	18.9	79	ESE	.....	.....	3	.....	10	.....	.....	.....	.....	.....	.....	Cloudy.....	
Colorado, New York, N. Y.....	30.19	766.8	46	7.8	43	6.1	83	SSE	4	1.8	.....	.....	6	.....	W	0	0	.....	.....	Foggy.....	
Despatch, Constantinople, Turkey.	30.52	775.2	82	27.8	60	15.6	71	NE	.....	.....	3	.....	7	.....	N&E	.....	.....	.....	.....	Cloudy.....	
Franklin, Norfolk, Va.....	30.54	775.7	43	6.1	42	5.6	83	E	2	0.9	.....	.....	1	.....	E	0	0	.....	.....	Clear.....	
Gettysburg, Malta	29.79‡	756.7‡	.....	.....	68	20.0	100	S&E	.....	.....	1–2	.....	10	.....	Calm	Blank	Blank	.....	.....	D. clouds.....	
Guard, N. 38° 27′, W. 42° 38′.....	30.25	768.3	70	21.1	69	20.6	75	WNW	.....	.....	3	.....	9	.....	N&W	.....	.....	Moderate.	NW	D. clouds.....	
Lackawana, San Francisco, Cal.....	30.20	767.1	.....	.....	54	12.2	80	SE	.....	.....	2–3	.....	1	.....	.....	.....	.....	.....	.....	Hazy.....	
Marion, Smyrna, Turkey.....	30.26	768.6	63	17.2	64	17.8	48	ENE	.....	.....	3	.....	7	.....	Calm	0	0	Smooth	NE	D. clouds.....	
Michigan, Erie, Pa.....	29.70	754.4	65	18.3	48	8.9	63	SSW	.....	.....	1	.....	0	.....	.....	.....	.....	.....	.....	Fair	
Monocacy, Yokohama, Japan.....	29.88	758.9	56	13.3	48	8.9	49	N	.....	.....	4–5	.....	5	.....	N	Blank	Blank	.....	.....	D. clouds.....	
Monongahela, N. 38° 18′, E. 10° 58′.....	29.81	757.2	63	17.2	63	17.2	83	ESE	.....	.....	3–5	.....	kn	.....	.....	.....	.....	Smooth	.....	Showery.....	
New Hampshire, Port Royal, S.C.....	30.54	775.7	.....	.....	52	11.1	86	NE	5	2.2	.....	.....	1	.....	N	0	0	.....	.....	D. clouds.....	
Omaha, Callao, Peru.....	30.10	764.5	72.5	22.5	70.5	21.4	87	SSE	1	0.4	.....	.....	10	.....	Calm	0	0	Smooth	.....	Dull	
Onward, Callao, Peru.....	30.02	762.5	72	22.2	69	20.6	85	SSE	.....	.....	1	.....	10	.....	.....	.....	.....	Long	W	D. clouds.....	
Ossipee. Norfolk, Va.....	30.53	775.4	71	21.7	45	7.2	84	SW	.....	.....	1	.....	1	.....	Calm	.....	.....	.....	.....	D. clouds.....	
Pulos, Shanghai, China.....	30.32	770.1	61	16.1	55	12.8	74	E	.....	.....	2	.....	8	.....	ENE	.....	.....	.....	.....	Cloudy.....	
Pensacola, San Francisco, Cal.....	30.23	767.8	.....	.....	52	11.1	86	S&E	.....	.....	0–1	.....	0	.....	.....	.....	.....	.....	.....	Clear...	
Plymouth, Norfolk, Va.....	30.52	775.2	53	11 7	42	5.6	91	Calm	.....	.....	0	.....	0	.....	.....	.....	.....	.....	.....	Clear	
Ranger, Shanghai, China.....	30.42	772.7	.....	.....	58	14.4	76	SE	.....	.....	2	.....	7	.....	Calm	.....	.....	.....	.....	Pleasant.....	
Rio Bravo, Brownsville, Texas.....	29.90	759.4	.....	.....	65	18.3	94	SE	.....	.....	1	.....	3	.....	SE	.....	.....	.....	.....	D. clouds.....	
Santee, Annapolis, Md	30.51	774.9	66	18.9	42	5.6	83	S	.....	.....	0–1	.....	0	.....	.....	0	0	.....	.....	Hazy.....	
Saratoga, Hampton Roads, Va.....	30.76†	781.3†	.....	.....	60	15.6	94	SW	.....	.....	1	.....	0	.....	.....	0	0	.....	.....	Clear.....	
St. Louis, League Island, Pa	30.30	769.6	37	2.8	36	2.2	90	Calm	0	0	.....	.....	10	.....	E	0	0	.....	.....	Foggy	
Swatara, Hampton Roads, Va.....	30.53	775.4	.....	.....	54	12.2	80	S	.....	.....	1	.....	0	.....	.....	.....	.....	.....	.....	Blue sky.....	
Tennessee, Yokohama, Japan.....	29.98	761.5	57	13.9	47	8.3	55	NNW	20	8.9	.....	.....	8	.....	N;W	0.02	0.5	None	.....	D clouds....	
Trenton, Villefranche, France.....	30.02	762.5	66	18.9	63	17.2	67	E	2	0.9	.....	.....	10	.....	E	0	0	.....	.....	D. clouds.....	
Vandalia, Villefranche, France.....	29.95	760.7	63	17.2	63	17.2	62	E	..	..	.....	2	.....	10	.....	NNE	.....	.....	.....	Showery.....	
Wabash, Boston, Mass.....	30.46	773.7	50	10.0	37	2.8	71	SW	11	4.9	.....	.....	9	.....	Calm	0	0	.....	.....	D. clouds....	
Wyoming, Washington, D. C.....	30.52†	775.2†	50	10.0	33	0.6	.....	Calm	.....	.....	0	.....	.....	.....	.....	.....	.....	.....	.....	Squally	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. ‡ Barometer corrected for instrumental error and reduced to sea-level.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	OBSERVER.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.	Character.	Direction from—		
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—				
S. S. Alaska																			Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama, N. 8° 22′, W. 83° 49′			29.63	752.6	84	28.9	79	ESE			3		6		SE	Light	SSW	D. clouds	Capt. Howard.
S. S. City of Peking, N. 39° 56′, W. 170° 17′			29.92*	760.0*	50	10.0	100	WNW			8		8		WNW	Rough	WNW	Raining	Lt. Z. L. Tanner, U.S.N
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio, N. 30° 05′, W. 177° 16′			30.30	769.6	71	21.7		NE			3		6		SE	Short	SW	Overcast	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

NOTE.—The originals give the wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. *Aneroid.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic	Capt. H. H. Perry.
S. S. Baltic	Capt. J. W. Jenning.
S. S. Britannic	Capt. W. H. Thompson.
S. S. Celtic	Capt. B. Gleadell.
S. S. Germanic	Capt. C. W. Kennedy.
S. S. Republic	

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	OBSERVER.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.	Character.	Direction from—		
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—				
S. S. Belgic																			Capt. John Metcalf.
S. S. Gaelic																			Capt. W. H. Kidley
S. S. Oceanic, Yokohama, Japan			29.84	757.9	56	13.3	75	Var.			4–6		6		N			Raining	Capt. H. Parsell.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	OBSERVER.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.	Character.	Direction from—		
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—				
S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig																			Capt. K. Undütsch.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio, N. 46° 34′, W. 38° 34′			29.78	756.4	51.0	10.6	65	W			6		k		W	High	W	Clearing	Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, nor distinguish between upper and lower clouds.

UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Lo'wr	Upper.	Lower.	Character	Direction From—		
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second	0—10.	0—10.	0—10.	From—	From—				
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, N. 42° 15', W. 49° 06'			30.00*	762.0*	53	11.7	??	N			5		8		NNE	Heavy	NNW	Cloudy	Captain Sargent.
S. S. Ohio, Liverpool			29.97	761.2	48	8.9	85	SSE			2		8?		S			Clear?	Captain Morrison.
S. S. Pennsylvania, N. 40° 54', W. 67° 16'			30.37†	771.4†	43	6.1	92	WSW			1		0			Smooth	W	Clear	Captain Harris.

NOTE.—The originals give the barometer as read off; the wind-force by the scale 0 to 12. *Aneroid; correction for elevation applied, instrumental error not known.
†Corrected for temperature and elevation, instrumental error not known.

RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

S. S. Nederland																			Capt. Randle.
S. S. Switzerland																			Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

S. S. Hibernian																			Capt. W. Richardson.
S. S. Scandinavian																			

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, Kennebunk, Maine			30.40	772.1	39.6	4.2	86	SW	16	7.2			10s		SW			Overcast	Capt. James Jorgensen.

NOTE.—The originals for the schooner Addie Fuller give the amount of cloudiness by the scale 0 to 4; the barometer as read off.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.,) Chief Signal Officer. U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON NOVEMBER 15, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:18 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours	.....	.....	30.31	769.8	65.8	18.8	69	Calm	.....	.....	0	.....	2	.....	.....	.....	.....	Fair	Michel.
Algiers	.....	.....	30.04	762.9	63.7	17.6	100	N	.....	.....	4	.....	10	.....	.....	1.032	26.2	Covered	Peter.
La Calle	.....	.....	29.89	759.1	61.2	16.2	81	ENE	.....	.....	3	.....	9	.....	.....	2.204	56.0	Covered	Fleury.
Tunis	.....	.....	29.82	757.3	61.2	16.2	75	E	.....	.....	4	.....	10	.....	.....	0.661	16.8	Covered	Jacques.
Sfax	.....	.....	29.81	757.1	64.4	18.0	.....	WSW	.....	.....	2	.....	.....	.....	.....	0.118	3.0	Covered	Husson.
Saida	.....	.....	30.21	767.3	47.8	8.8	85	NNW	.....	.....	3	.....	7	.....	.....	0	0	Very cloudy	Millot.
Tebessa	.....	.....	29.87	758.6	.....	.....	.....	Calm	.....	.....	0	.....	9	.....	.....	.....	.....	Covered	Bourgeois.
Geriville	.....	.....	30.07	763.6	44.6	7.0	77	NW	.....	.....	4	.....	7	.....	.....	0.16	4.	Very cloudy	Lemaillot.
Laghouat	.....	.....	30.00	762.1	53.6	12.0	65	NW	.....	.....	6	.....	6	.....	.....	0	0	Cloudy	Guyot.
Biskra	.....	.....	29.79	756.6	66.2	19.0	25	NW	.....	.....	4	.....	6	.....	.....	.....	.....	Cloudy	Kuntz.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890 ? meters, or 2,919.9 ? feet; Tebessa, 1,088 ? m., or 3,569.4 ? ft.; Geriville, 1,360 ? m.; or 4,461.7 ? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

Agram	29.87	758.6	30.43	772.8	55.8	13.2	59	Calm	.....	.....	0	.....	1	.....	.....	0	0	.....	Prof. Ivan Stozir
Cracow, I. R. Observatory	29.72	755.0	30.50	774.7	55.4	13.0	87	NE	.....	.....	1	.....	8	.....	.....	0	0	.....	Dr. Wierzbiski.
Eperies	29.57	751.1	30.47	773.8	52.2	11.2	63	Calm	.....	.....	0	.....	4cs	.....	.....	0	0	.....	Julius Mikolik.
Gratz	29.20	741.6	30.47	773.8	52.7	11.5	76	SSE	.....	.....	2	.....	0	.....	.....	0	0	.....	Andreas Rospini.
Hermannstadt	28.98	736.2	30.45	773.3	47.1	8.4	61	SE	.....	.....	1	.....	0	.....	.....	0	0	.....	Prof. Reissenberger.
Kremsmünster	29.09	738.9	30.48	774.1	45.3	7.4	91	Calm	.....	.....	0	.....	10	.....	.....	0	0	.....	Prof. C. Wagner.
Lemberg	29.49	749.0	30.52	775.2	40.6	4.8	90	S	.....	.....	1	.....	9	.....	.....	0	0	.....	Dr. T. Stanecki.
Pola	30.17	766.3	30.28	769.1	55.8	18.8	44	ENE	.....	.....	3	.....	8cs	.....	.....	0	0	.....	I.R. Hydrographic Office.
Szathmar	30.03	762.8	30.50	774.7	59.7	15.4	38	N	.....	.....	1	.....	0	.....	.....	0	0	.....	Johann Tamas, S. J.
Szegedin	30.19	766.8	30.48	774.1	52.2	11.2	74	Calm	.....	.....	0	.....	0	.....	.....	0	0	.....	Karl Stancel.
Trieste	30.21	767.4	30.32	770.0	62.2	16.8	67	ENE	.....	.....	4	.....	0	.....	.....	0	0	Clear	P. Busin.
Vienna	29.78	756.3	30.49	774.5	48.0	8.9	83	Calm	.....	.....	0	.....	0	.....	.....	0	0	.....	I. R. Central Met. Obs'y.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time, and at Trieste at 7 a. m. of the following day. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

Arlon	28.90	735.5	30.53	775.4	40.3	4.6	98	Calm	.....	.....	0	.....	8	.....	.....	0.016	0.4	Light fog	Prof. M. Passau.
Brussels	30.24	768.2	30.45	773.5	49.3	9.6	81	SSW	.....	.....	4	10	.....	SSW	.....	0	0	Solar halo	Royal Observatory.
Furnes	30.35	770.9	30.37	771.5	47.7	8.7	86	SW	.....	.....	4	.....	10	.....	.....	0	0	.....	M. E. de Cae.
Maeseyck	30.37	771.5	30.50	774.8	50.0	10.0	90	SSW	.....	.....	2	.....	7	.....	.....	0	0	.....	M. Pierrot.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer
Aberdeen	29.85	758.2	29.95	760.7	52.7	11.5	.....	SSW	14	6.3	.....	.....	6	.....	.....	0.015	0.38	D. clouds.. ..	W. Boswell.
Ardrossan	30.02	762.5	30.04	763.0	52	11.1	.....	SSW	.....	.....	4	.....	8	.....	.....	.....	.....	Overcast.....	William McNeil.
Armagh, Observatory	.....	.....	30.06	763.5	50.1	10.1	.....	S	16	7.2	.....	.....	8	.....	.....	.....	.....	Overcast.....	S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)	.....	.....	30.17	766.3	57.1	13.9	.....	S	5	2.2	.....	.....	1	.....	.....	.....	.....	Blue sky.....	John Hartnup.
Birr Castle, (Parsonstown)	.....	.....	30.06	763.5	52.0	11.1	.....	SSE	.....	.....	1	.....	10	.....	.....	.....	.....	Overcast.....	J. Dreyer.
Bradford, Yorkshire	29.77	756.1	30.16	766.1	56.1	13.4	.....	SW	.....	.....	1	.....	5	.....	.....	0.03	0.8	D. clouds.....	J. McLandsborough.
Bridgetown, (Barbados)	29.87	758.7	29.90	759.4	82.5	28.1	.....	NE	.....	.....	1	.....	3	.....	.....	.....	.....	D. clouds.....	Pvt. G. W. Roberts, A.
Cambridge, Observatory	.....	.....	30.28	769.1	53.0	11.7	.....	S	.....	.....	1	.....	10	.....	.....	Blank	Blank	Overcast.....	H. Todd. [H.C.
Cardington	.....	.....	30.28	769.1	55.0	12.8	.....	SW	.....	.....	1	.....	10	.....	.....	.....	.....	Overcast.....	John McLaren.
Chatham, School M. E	30.16	765.1	30.30	769.6	48.2	9.0	.....	S	.....	.....	3	.....	10	.....	.....	.....	.....	Drizzling....	Lt.Col. C.M.Martin,R.E.
Dartmoor	28.56	725.4	30.05	763.3	46.4	8.0	.....	S	.....	.....	6	.....	10	.....	.....	.....	.....	Rain; fog....	Alexander Watt.
Davos Platz (Switzerland)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Francis Redford, M. A.
Donaghadee	30.03	762.7	30.06	763.5	50	10.0	.....	WSW	.....	.....	3	.....	10	.....	.....	.....	.....	Overcast.....	J. Mac Gowan.
Dover	30.34	770.6	30.37	771.4	53	11.7	.....	WSW	.....	.....	5	.....	10	.....	.....	.....	.....	Drizzling....	J. Costello.
Eccles, (near Manchester)	.....	.....	30.18	766.6	58.7	14.8	.....	SW	2.6	0.9	.....	.....	3	.....	.....	.....	.....	D. clouds....	Thomas Mackereth.
Falmouth, Observatory	30.04	763.0	30.27	768.8	56.0	13.3	.....	SSW	.....	.....	2	.....	10	.....	.....	.....	.....	Foggy	The Staff.
Fort Napier, (Natal)	27.52	699.0	29.73	755.1	72.2	22.3	.....	E	.....	.....	2	.....	9	.....	.....	.....	.....	Overcast.....	Pvt. G. Salmon, A.H. C.
Free Town, (Sierra Leone)	.....	.....	29.89	759.2	85	29.4	.....	Calm	.....	.....	0	.....	4	.....	.....	.....	.....	D. clouds.....	
Galway, Queen's College	.....	.....	.....	.....	52	11.1	.....	S	.....	.....	2	.....	7	.....	.....	.....	.....	Gloomy.....	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	30.20	767.1	30.25	768.3	64.0	17.8	.....	NE	.....	.....	3	.....	0	.....	.....	.....	.....	Blue sky.....	Corpl. C. Aitken, A.H.C.
Glasgow, Observatory	29.83	757.7	30.04	763.0	50.6	10.3	.....	SSW	.....	.....	3	.....	4	.....	.....	.....	.....	Blue sky.....	D. G. Maclean.
Great Yarmouth	30.29	769.4	30.29	769.4	52	11.1	.....	SW	.....	.....	4	.....	7	.....	.....	.....	.....	Misty	G. T. Watson.
Greenwich, Royal Obs'y	30.12	765.0	30.30	769.6	52.8	11.6	.....	SSW	.....	.....	3	.....	10	.....	.....	.....	.....	Overcast	The Staff, for G. B. Airy.
Guernsey	30.12	765.0	30.35	770.9	56.5	13.6	.....	SSW	.....	.....	2	.....	8	.....	.....	.....	.....	Misty.....	Dr. S. E. Hoskins, F.R.S.
Helston	.....	.....	30.26	768.6	56	13.3	.....	S	.....	.....	4	.....	10n	.....	.....	0.47	11.9	Misty.....	M. P. Moyle.
Holyhead	30.07	763.8	30.12	765.0	54	12.2	.....	SSW	.....	.....	4	.....	10	.....	.....	.....	.....	Misty.....	John Tilston.
Jersey	30.10	764.5	30.40	772.1	54.9	12.7	.....	SW	.....	.....	4	.....	10	.....	.....	.....	.....	Drizzling....	J. Fisher.
Kew, Observatory	.....	.....	30.31	769.9	53.2	11.8	.....	S	18	8.0	.....	.....	10sd	.....	.....	.....	.....	Drizzling....	The Staff.
Kingstown	30.10	764.5	30.13	765.3	53	11.7	.....	SSE	.....	.....	4	.....	9	.....	.....	.....	.....	Overcast.....	George Mitchell.
Leicester, Museum	.....	.....	30.22	767.6	55.1	12.8	.....	SW	.....	.....	1	.....	10	.....	.....	.....	.....	Overcast.....	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.80	756.9	29.87	758.7	64.8	18.2	.....	SE	.....	.....	6	.....	8	.....	.....	.....	.....	Raining.....	S'gt. C. Arbeiter. A.H.C
Nairn	29.74	755.4	29.83	757.7	50	10.0	.....	W	.....	.....	4	.....	5	.....	.....	.....	.....	½ clouded..	W. D. Penny.
Nassau, (Bahamas)	.....	.....	30.14	765.5	78.0	25.6	.....	NE	.....	.....	5	.....	8	.....	.....	.....	.....	D. clouds....	C. S. Duncombé.
Nottingham, Observatory	30.02	762.5	30.21	767.3	55.6	13.1	.....	SSW	.....	.....	2	.....	10k;d	.....	SSW	0.131	3.33	Overcast.....	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.68	753.9	30.21	767.3	53.9	12.2	.....	SSW	.....	.....	3	.....	10	.....	.....	.....	.....	Misty.....	Rev. Stephen Whitty
Oxford, Radcliffe Obs'y	.....	.....	30.16	766.1	57	13.9	.....	SSW	.....	.....	1	.....	10	.....	.....	.....	.....	Misty.....	F. Lucas
Plymouth	30.22	767.6	30.29	769.4	55.5	13.1	.....	SSW	.....	.....	1	.....	10	.....	.....	.....	.....	Rain & fog...	John Merrifield.
Roche's Point	30.09	764.3	30.14	765.5	53	11.7	.....	SW	.....	.....	2	.....	.....	.....	.....	.....	.....	Dense fog....	W. Kennedy.
Saint Ann's Head	30.02	762.5	30.19	766.8	55	12.8	.....	S	.....	.....	1	.....	10	.....	.....	.....	.....	Foggy	John C. Walker.
Sandwick Manse, (Orkneys)	.....	.....	29.72	754.9	49.2	9.6	.....	WSW	36	16.1	.....	.....	5	.....	.....	.....	.....	Showery.....	Rev. C. Clouston, LL. D
Scutari, Cemetery, (Turkey)	.....	.....	30.38	771.6	54.4	12.4	.....	NE	.....	.....	2	.....	8	.....	.....	.....	.....	Showery.....	Sergt. W. H. Lyne.
Sheffield	30.04	763.0	30.28	769.1	55.7	13.2	.....	W	.....	.....	1	.....	3	.....	.....	0.01	0.3	Blue sky.....	W. F. Cooper.
Silloth Rectory	30.06	763.5	30.09	764.3	56.1	13.4	75	SW	.....	.....	3	.....	2	.....	.....	0.145	3.69	D. clouds.....	Rev. F. Redford, M. A.
Stonyhurst, Observatory	.....	.....	.....	.....	53.2	11.8	.....	W	.....	.....	1	.....	6	.....	.....	.....	.....	Hazy.....	Rev. S. J. Perry.
Stornoway, Lews C., (Hebr.)	.....	.....	29.74	755.4	47	8.3	.....	WSW	.....	.....	0	.....	10	.....	.....	.....	.....	Threatening	John Smith.
Stratfield Turgiss	30.07	763.8	30.29	769.4	54.7	12.6	.....	S	.....	.....	1	.....	10	.....	.....	.....	.....	Raining.....	Rev. C. H. Griffith, F.M.S.
Thurso	.....	.....	29.75	755.6	50	10.0	.....	SSW	.....	.....	3	.....	7	.....	.....	.....	.....	D. clouds....	John Trotter.
Truro, Royal Institution	.....	.....	30.28	769.1	57	13.9	.....	S	.....	.....	4	.....	10	.....	.....	.....	.....	Raining.....	W. Newcombe.
Valencia, Observatory	.....	.....	30.03	762.7	53.6	12.0	.....	SSE	36	16.1	.....	.....	10	.....	.....	.....	.....	Misty.....	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)	.....	.....	.....	.....	48	8.9	.....	W	.....	.....	1	.....	0	.....	.....	0.10	2.5	.....	Henry Mercer.
Cape Good Hope, Obs'y	29.85	758.2	29.89	759.2	74.3	23.5	55	NW	17	7.6	.....	1	2	.....	.....	.....	.....	.....	The Staff, for E. J. Stone.
Hobart Town, (Tasmania)	.....	.....	29.76	755.9	49.0	9.4	79	NW	.....	.....	3	.....	4k	.....	.....	0.01	0.3	.....	Francis Abbott, F.R.A.S.
Leith, Restalrig Park	.....	.....	30.05	763.3	53.0	11.7	.....	SW	.....	.....	4	.....	10cs	.....	.....	0.10	2.5	Hazy.....	Andrew Gibb.
Mauritius, Observatory	29.85	758.2	30.04	762.9	77.1	25.1	54	SE	19.5	8.7	.....	0	2	.....	SE	0	0	Squally.....	C. Meldrum.
Melbourne, Observatory	29.94	760.5	30.03	762.7	50.8	10.4	69	SE	5	2.2	.....	.....	7	.....	S	0	0	Fine.....	R. L. J. Ellery.
Monach Light-house, (Hebrides)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Youngclause.
North Unst, (Shetland Is.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Robert Burnet.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m.

Marine Series. Vessels.																Sea or swell. Height scale 0—9	Sea or swell. Direction from—		
S. S. Algeria. N. 40° 37', W. 68° 50'	.....	.....	30.43	772.9	58	14.4	.....	WSW	.....	.....	3	.....	6	.....	.....	0*	.....	D. clouds.. ..	Capt. W. Watson.
S. S. Batavia, N. 48° 10', W. 34° 5'.	...	...	30.12	765.0	45	7.2	.....	W	.....	.....	6	.....	6	.....	.....	5	W	Showery.....	Capt. J. E. Mouland.
Ship Camperdown	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. A. T. Miller.
Brig Catherine	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. Adam Smith.
Barque Celeste	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. D. F. McKechnie.
S. S. Hibernia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. W. R. Cato.
Barque Maroon	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. A. T. Brown.
Ship Mikado	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. C. C. Prehn.
S. S. Seine	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. H. Manning.
Barque Sorata	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. Jas. J. Price.
Schooner Traveller	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. Alex Simpson.
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Note.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. *Feet.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	BAROMETER. Corrected for instrumental error and temperature. Inches.	BAROMETER. Corrected for instrumental error and temperature. Millimeters.	BAROMETER. Reduced to sea-level. Inches.	BAROMETER. Reduced to sea-level. Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'r 0—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Upper. From—	CLOUDS. Direction. Lower. From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	WEATHER.	OBSERVER
San José	26.18	665.0			68.4	20.2	83	E			2	ipe				0	0		Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	30.30	769.5	30.34	770.7	48.0	8.9	91	S			2		10						
Fanöe	30.26	768.7	30.28	769.2	48.4	9.1	92	SW			4		10						
Godthaab, (Greenland)	29.26	743.2	29.30	744.3	23.2	—4.9	90	ENE			4		10						
Stykkisholm, (Iceland)	28.78	730.9	28.82	732.0	32.2	0.1	100	NE			4		10						Snowing
Thorshavn, (Faröe)	29.11	739.3	29.14	740.2	46 6	8.1	68	SSW			8		10						
Vestervig	30.00	762.1	30.17	766.4	47.1	8.4	100	SW			6		10						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

Alençon, Normal School	29.99	761.7	30.54	775.7	50.0	10	86	SW			1		10			0	0	Covered	Collignon, Director.
Amiens, Normal School	30.32	770.2	30.44	773.1	47.1	8.4	86	SE			2		2			0	0	Slightly cl'dy	Bonvarne, Director.
Avignon, Normal School	30.25	768.4	30.33	770.4	56.5	13.6	60	N			6		0			0	0	Very clear	Mr. Giraud, Director.
Bar-sur-Seine	29.93	760.1	30.51	775.0	45.1	7.3	87	W			1		10			0	0	Covered	C. Saillard.
Beaumette Obs'y (Angers)	30.30	769.6	30.47	773 8	53.2	11.8	75	ESE	2.0	0.9					NNE	0	0		Albert Cheux.
Beauvais	30.20	767.0	30.50	774.6	47.3	8.5	85	S			1		2		WSW	0	0	Slightly cl'dy	Normal School.
Besançon	29.57	751.1	30.49	774,4	49.3	9.6	80	E			2		0			0	0	Clear	Normal School.
Bourg-en-Bresse	29.58	751.4	30.50	774.8	40.8	4.9	97	NW			2					0	0	Foggy	Normal School.
Bourges, Normal School	29.94	760.4	30.55	776.0	43.0	6.1	91	ESE			2					0	0	Misty	A. Wagner, Director.
Brest, Naval Observatory	30.05	763.3	30.27	768.9	54.9	12.7	95	SW			4		10		SW	0.138	3.50	Foggy	The Staff.
Carcassonne, Normal School	29.98	761.4	30.40	772.1	56.7	13.7	80	W			2		2		W	0	0	Slightly cl'dy	Vateau, Director.
Caen	30.34	770.6	30.41	772.5	52.9	11.6	77	NNW			2		8		NE	0	0	Very cloudy	Normal School.
Chartres, Normal School	29.89	759.1	30.47	774.0	42.1	5.6	78	SSW			1		10			0	0	Covered	Lequin, Director.
Châlons-sur-Marne, N. Sch'l	30.20	767.0	30.53	775.4	41.0	5.0	97	W			2		10			0	0	Foggy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	29.07	738.4	30.46	773.6	50.9	10.5	74	E			1		10		NW	0	0	Covered	Allnard, Director.
Commercy, Normal School	29.61	752.1	30.54	775.6	43.3	6.3	97	W			1		2		W	0	0	Slightly cl'dy	Dr. Goulet, Director.
Commune de Gréasque*	29.20	741.6	30.34	770 6	64.2	17.9	47	NW			1		2		SW	0	0	¼ covered	V. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	30.28	769.0	30.49	774.5	52.9	11.6	76	N			1		2		NW	0	0	Slightly cl'dy	Mouillot, Director.
Le Mans, Normal School	30.19	766.7	30.50	774.8	46.4	8	91	SSW			2		8		SW	0.010	0.25	Very cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.52	749.9	30.47	774.0	41.9	5.5	92	W			1		10			0	0	Foggy	Pin, Director.
Lorient, Naval Observatory	30.33	770.4	30.43	772.9	58.3	14.6	79	S			3		10			0	0	Covered	T. Carré, Director.
Mâcon, Normal School	29.76	755.8	30.44	773.1	45.1	7.3	94	Calm			0		0			0	0	Clear	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	29.40	746.8	30.50	774 6	39.4	4.1	93	SSW					10		NNE	0	0	Covered	Normal School.
Nismes, Normal School	30.15	765.7	30.35	770.9	60.4	15.8	65	N			6		0			0	0	Clear	Boyer, Director.
Orleans, Normal School	30.13	765.3	30.53	775.4	41.4	5.2	82	SE			2		10			0.04	1.	Covered	Bernard, Director.
Paris, Observatory	30.26	768.6	30.51	775.0	41.0	5.0	99	SSE			1		10			Inap.	Inap.	Foggy	National Observatory.
Privas	29.21	741.9	30.29	769.3	53.8	12.1	95	N			2		1		N	0	0	Clear	Normal School
Rochefort, Naval Obs'y	30.41	772.5	30.45	773.3	54.0	12.2	74	ESE			2					0	0	Misty	Lt. Decante, Director.
Rouen, Normal School	30.36	771.1	30.45	773.3	48.2	9.0	81	SW			1		0			0	0	Clear	F. Lucard, Director.
Tarbes, Normal School																			T. Hugues, Director.
Villefranche	29.74	755.3	30.47	773.9	49.1	9.5	86	NE			2		8		S	0	0	Very cloudy	Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.80	757.0	29.83	757.7	82.4	28										0.20	5.		L'Abbé Marchesi.
Marseilles, Observatory			30.27	768.8	68.5	20.3	55	WNW			1		1			0	0		The Staff.
Mont-Louis	25.16	639.0	30.47	774.0	46.6	8.1	62	ENE	9.3	4.17			10		ENE	0.020	0.5		Mr. Falguère.
Nice			30.23	767.0	63.9	17.7	43	SE					0		SE	0	0	Clear	Dr. A. Niepce.
Paris, Montsouris Obs'y	30.21	767.4	30.49	774.4	40.5	4.7	100	S			2		10			0.008	0.2	Foggy	Marié Davy, Director.
Perpignan			30.34	770.6	63.3	17.4	38	E	3.7	1.67			2			0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.	21.42	544.1			32.7	0.4		N					0					Clear	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.74	577.6			41.2	5.1		N			2		1			0	0	Clear	Gen'l de Nansouty.
Saint Maur, (near Paris)	30.34	770.5	30.50	774.7	41.5	5.3	95	SSE			1		10			0	0	Foggy	E. Renou.
Toulouse, Observatory	29.73	755.2	30.47	773.8	46.9	8.3	86	NW			1		1			0	0		The Staff.
Tours	30.29	769.3	30.48	774.3	40.5	4.7	89	E			1		10			0	0	Foggy	C. Marquet.
Versailles, (near Paris)			30.48	774.3	43.5	6.4	94	S			1		10			0.011	0.27	Foggy	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	29.91	759.7	29.93	760.3	54.9	12.7	98	W	4.3	1.9			10kn		W	1.559	39.6	Covered	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; for Montsouris, the barometer reduced to freezing but not to sea-level. At Mirecourt the cloud direction is apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,368 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Barometer: Corrected for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg																			Prof. Dr. Hoh.
Berlin	30.31	769.9	30.48	774.2	55.4	13.0	74	S			1		2			0	0		Prof. Arndt.
Breslau	29.97	761.2	30.51	774.9	54.1	12.3	75	W			1		1			0	0		Royal University Obs'y.
Carlsruhe	30.08	763.	30.53	775.5	39.6	4.2	94	NE			1		10			0	0	Dense fog.	Albert Senz.
Cassel	29.93	760.1	30.54	775.8	37.0	2.8	98	SE			0		Fog			0	0		Dr. H. Möhl.
Crefeld	30.30	769.7	30.47	773.9	45.5	7.5	89	SE			3		9			0	0		Director Lose.
Emden	30.40	772.2	30.44	773.1	45.7	7.6	91	S			2		5			0	0		Prof. Prestel.
Frankfort on the Main	30.20	767.1	30.59	776.9	39.6	4.2		E			1		10			0	0	Foggy	Physical Society.
Friedrichshafen	29.02	737.2	30.50	774.8	45.7	7.6	80	NE			5		10			0	0		M. Wilhelm.
Hamburg	30.37	771.5	30.45	773.3	49.3	9.6	89	SSW			3		9ck			0.016	0.4	Fair	Captain F. Hegemann.
Kiel	30.37	771.5	30.39	771.9	48.0	8.9	85	SW			4		10			0	0		Prof. G. Karsten.
Königsberg, (Prussia)	30.37	771.4	30.45	773.4	43.2	6.2	96	SW										Covered	Prof. E. Luther.
Köslin			30.44	773.1	47.8	8.8		W			2		8			0	0		H. Müller.
Leipsic, Observatory	30.12	765.1	30.56	776.1	48.9	9.4	92	W			1		5			0	0		Prof. Bruhns.
Memel, Naval School	30.42	772.6	30.47	773.8	40.6	4.8	96	S			2		10n					Foggy	Reinbrecht von Skalweit.
Neufahrwasser	30.44	773.2	30.46	773.6	47.8	8.8	95	S			1		10			0	0	Foggy	A. Lothes.
Posen	30.20	767.1	30.49	774.4	51.1	10.6	94	WSW			3–4		10					Cloudy	Dr. Magener.
Strassburg Obs., (in Alsace	29.98	761.4	30.55	776.0	40.8	4.9	98	NE			2		10			0	0	Foggy	Dr. Schur.
Stuttgart	29.52	749.8	30.49	774.4	48.2	9.0	84	NE			1		10	E		0	0		Prof. Schoder.
Treves, (Trier)	29.86	758.5	30.39	772.0	39.2	4.0	96	NE			1		10			0.014	0.36	Dense fog	Prof. Flesch.
Weissenburg, (Bavaria)	28.95	735.4	30.51	775.0	45.0	7.2	91	N	2	1			10			0	0	Dense fog	Dr. Von Bebber.
Wustrow, Naval School	30.46	773.7	30.51	774.9	47.1	8.4	93	SSE			3		10					Foggy	E. F. Schütz.
German Naval Series.																			

NOTE.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet: Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4, Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.93	760.3	30.33	770.3	59.2	15.1		NE			Strong.							Clear.	Dr. J. F. J. Schmidt.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and wind-force; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.90	759.3	29.95	760.6	82.6	28.1	68	WSW	14.0?	6.3?			0			0	0	Blue sky	
Deesa	29.61	749.5	29.98	761.5	87.2	30.7	31	SE					0			0	0	Blue sky	
Bombay	29.87	758.8	29.91	759.7	83.5	28.6	65	W	9.0	4.0			0			0	0	Blue sky	
Poona	27.86	707.7	29.86	758.4	80.1	26.7	42	E					0			0	0	Misty	
Lahore	29.22	742.2	29.98	761.4	74.8	23.8	44	E	0.5	0.2			8			0	0	Cloudy	
Belgaum	27.40	695.9	29.94	760.5	76.5	24.7	53	Calm					1	W		0	0	D. clouds	
Bangalore																			
Roorkee	29.05	737.9	29.97	761.2	73.2	22.9	40	Calm	1.2	0.5			0			0	0	Blue sky	
Agra	29.40	746.7	29.97	761.3	78.7	25.9	47	N								0	0		
Trichinopoly																			
Nagpur	28.95	735.3	30.00	762.1	76.6	24.8	43	Calm	1.8	0.8			0			0	0	Blue sky	
Madras																			
Lucknow	29.60	751.9	29.98	761.5	75.5	24.2	52	NW	0.8	0.4			0			0	0	Blue sky	
Allahabad	29.63	752.6	29.94	760.6	75.0	23.9	55	Calm	0.6	0.3			0			0	0	Blue sky	
Patna	29.78	756.3	29.96	761.0	79.3	26.3	43	Calm	0.7	0.3			2	W	W	0	0		
Hazaribagh	27.94	709.8	29.98	761.6	73.0	22.8	46	NW	4.5	2.0			0			0	0	Blue sky	
Cuttack	29.89	759.2	29.97	761.3	76.5	24.7	70	Calm	1.6	0.7			5	S		0	0	D. clouds	
Calcutta (Alipore)	29.96	760.8	29.98	761.4	72.7	22.6	76	WNW	2.0	0.9			0			0	0	Blue sky	
Goalpara	29.55	750.4	29.94	760.5	74.8	23.8	62	Calm	2.0	0.9			1	W		0	0	D. clouds	
Chittagong	29.88	758.8	29.97	761.2	74.8	23.8	75	Calm	0.9	0.4			10			0	0	Overcast	
Sibsagar	29.63	752.7	29.98	761.5	67.4	19.7	82	ENE	1.2	0.5			4			0	0	Blue sky	
Rangoon																			
Jubbulpore	28.63	727.1	30.00	762.0	80.0	26.7	52	NE	3.1	1.4			0			0	0	Blue sky	

NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	22.49	571.3	30.37	771.5	34.3	1.3	74	ENE	.....	.....	1	.....	0	.....	.....	5.907*	150.0*	.....	Ab. Dom. Morgini.
Stelvio	22.47	570.8	30.34	771.0	29.8	— 1.2	.....	SSW	.. ....	.....	1	.....	0	.....	.....	0.039	1.0	.....	Signora Ernesta Manfredi.
Udine	29.89	759.2	30.30	769.7	62.4	16.9	60	NE	3.8	1.7	.....	.....	1	.....	.....	0	0	.....	Prof. Giovanni Clodig.
Padua	30.20	767.0	30.31	769.8	62.6	17.0	68	N	4.3	1.9	.....	.....	2	.....	.....	0	0	.....	Prof. Dott. Lorenzoni.
Vicenza	30.12	765.0	30.32	770.0	63.1	17.3	44	ENE	0.7	0.3	.....	.....	1	.....	.....	0.476	12.1	.....	Conte Alm. Da Schio.
Verona	30.08	764.1	30.31	769.8	66.9	19.4	63	SE	4.9	2.2	.....	.....	0	.....	.....	0.248	6.3	.....	Dott. B. Bertoncelli.
Bergamo	28.99	736.4	30.32	770.3	61.5	16.4	60	WSW	.....	.....	4	.....	0	.....	.....	0.236	6.0	.....	Prof. Trionfini Carlo.
Domodossola	29.31	744.5	30.36	771.2	57.2	14.0	76	.....	.....	.....	.....	.....	0	.....	.....	0	0	.....	Prof. Giuseppe Calza.
Milan	29.81	757.2	30.34	770.6	63.3	17.4	.....	NW	.....	.....	2	.....	1	SSW	.....	0.020	0.5	.....	Ab. Gio. Capelli.
Pavia	29.99	761.7	30.34	770.7	62.1	16.7	69	S	.....	.....	1	.....	0	.....	.....	0.118	3.0	.....	Prof. Gio. Cantoni.
Moncalieri	29.44	747.8	30.36	771.2	62.2	16.8	64	SSW	1.8	0.8	.....	.....	1	.....	.....	0.039	1.0	.....	Prof. P. F. Denza.
Mondovi	28.43	722.2	30.37	771.5	56.1	13.4	78	NW	.....	.....	2	.....	0	.....	.....	0.555	14.1	.....	Prof. D. C. Bruno.
Porto Maurizio	30.05	763.2	30.27	768.8	68.9	20.5	36	N	.....	.....	4	.....	3	.....	.....	0	0	.....	Prof. L. Vassallo.
Genoa	30.09	764.3	30.26	768.6	68.0	20.0	49	N	6.3	2.8	.....	.....	0	.....	.....	0	0	.....	Prof. G. M. Garibaldi.
Piacenza	30.08	764.0	30.34	770.5	61.9	16.6	72	WNW	6.3	2.8	.....	.....	1	.....	.....	0.433	11.0	.....	Dott. G. Manzi.
Parma	30.01	762.3	30.34	770.5	64.2	17.9	73	SW	.....	.....	2	.....	1	.....	.....	0.146	3.7	.....	Prof. P. Pigorini.
Florence	30.02	762.5	30.28	769.1	65.3	18.5	58	NE	.....	.....	4	.....	8	E	.....	0	0	.....	Cav. F. Meucci.
Leghorn	30.15	765.9	30.24	768.1	67.1	19.5	53	ESE	15.0	6.7	.....	.....	3	.....	.....	0	0	.....	Prof. P. Monte.
Siena	29.02	737.2	30.24	768.0	63.5	17.5	51	NE	.....	.....	6	.....	7	NE	.....	0	0	.....	Prof. L. Toscani.
Urbino	28.74	729.9	30.30	769.7	56.5	13.6	77	N	.....	.....	4	.....	10	.....	.....	0	0	.....	Prof. P. Serpieri.
Pesaro	30.26	768.6	30.31	769.9	60.6	15.9	76	NE	26.6	11.9	.....	.....	10	NE	.....	0	0	.....	Prof. Luigi Guidi.
Ancona	30.17	766.4	30.28	769.1	62.2	16.8	79	W	.....	.....	4	.....	3	.....	.....	0	0	.....	Prof. F. DeBosis.
Grosseto	30.07	763 7	30.16	766.5	67.3	19.6	52	ENE	.....	.....	5	.....	5	SE	.....	0.012	0.3	.....	Avv. P. Ponticelli.
Rome	29.97	761.2	30.15	765.7	71.6	22.0	35	NE	4.3	1.9	.....	.....	8	.....	.....	0	0	.....	Prof. P. A. Secchi.
Naples, O. U	29.93	760.3	30.13	765.4	68.7	20.4	32	ENE	.....	.....	6	.....	5	SE	.....	0	0	.....	Prof. L. Palmieri.
Lecce	.....	.....	.....	.....	64.8	18.2	66	NNE	3.8	1.7	.....	.....	4	.....	.....	0	0	.....	Prof. C. De Giorgi.
Cosenza	.....	.....	.....	.....	62.2	16.8	73	NE	0	0	.....	.....	9	.....	.....	0.189	4.8	.....	Prof. F. D. Conti.
Cagliari	29.71	754.6	29.90	759.4	65.3	18.5	67	SE	.....	.....	4	.....	10	E	.....	0.717	18.2	.....	Prof. A. Pacinotti.
Riposto, (Sicily)	29.86	758.4	29.91	759.6	62.1	16.7	94	SE	.....	.....	8	.....	10	N	.....	3.559	90.4	.....	Prof. F. Cafiero.
Palermo	29.64	752.9	29.89	759.3	58.3	14.6	78	NE	18.6	8.3	.....	.....	10	.....	.....	0.791	20.1	.....	Prof. G. Cacciatore.
Caltanissetta	27.94	709.6	29.88	759.0	52.7	11.5	78	ENE	.....	.....	4	.....	10	.....	.....	1.173	29.8	.....	Prof. A. Pagani.
Syracuse	29.82	757.4	29.90	759.4	62.6	17.0	88	W	.....	.....	1	.....	10	SE	.....	3.642	92.5	.....	Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.62	752.3	30.17	766.4	64.0	17.8	55	SW	13.7	6.1	.....	.....	5	.....	.....	0	0	.....	Prof. F. Brioschi.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,543.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo 379.6 m., or 1,245.3 ft.; Moncalvi, 356 m., or 1,994.2 ft.; Siena, 348.5 m., or 1,143.3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft. *Unmelted snow.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Tokei (Yeddo)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	The Observatory.
Tokei (Yeddo) University	30.20	767.1	30.31	769.8	44	6.7	57	.....	.....	.....	.....	4cs	.....	SW	.....	0	0	Fair	Prof P. V. Veeder.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Señor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Aguascalientes	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	I. N. Marin, M. D.
Córdoba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	C. Peña, M. D.
Cuernavaca	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	L. Castillo, A. E.
Guadalajara	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. L. Perez.
Guanajuato	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. V. Fernandez.
Leon	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. M. Leal.
Mexico	28.20	389.2	30.37	771.4	47.7	8.7	71	Calm	0	0	.....	0	2s	.....	NW	0	0	Foggy	Central Observatory.
Orizaba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	N. N.
Orizaba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	I. Orozco, M. D.
Pabellon, (Aguascalts)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. V. de Leon, M. E.
Puebla	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. B. Gonzalez.
Toluca	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. C. Velazquez.
Tlacotalpam	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. F. R. Bayly.
San Luis Potosi	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	G. Barroeta, M. D.
Vera-Cruz	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. J. Rossell.
Zacatecas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. A. Bonilla, M. E.
Puebla, (Catholic Institute)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	P. Spina. [M. M. D. D.
Morelia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Tena, F. L. Páramo.

NOTE.—The elevation of Aguascalientes, is 1,801 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,290 m., or 7,512.9 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabell m, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

Furnished by the cooperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Groningen	30.43	772.8	30.43	772.8	46.8	8.2	.....	S	.....	.....	4	.....	.....	.....	.....	0.008	0.2	.....	.....
Helder	30.35	770.9	30.41	772.3	46.0	7.8	.....	SW	.....	.....	2	.....	.....	.....	.....	0	0	.....	.....
Hellevoetsluis	30.34	770.7	30.34	770.7	48.2	9.0	.....	S	.....	.....	4	.....	.....	.....	.....	0.024	0.6	.....	.....
Utrecht	.....	.....	30.41	772.3	49.6	9.8	84	S	.....	.....	4	.....	.....	.....	.....	.....	.....	.....	.....
.....	30.39	771.8	30.43	773.0	46.2	7.9	86	SSW	.....	.....	4	.....	5	.....	.....	0	0	Cloudy	H. v d Brink.

NOTE.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	29.82	757.4	29.87	758.8	50.0	10.0	82	SSW	23.5	10.5	.....	.....	4	.....	.....	0.512	13.0	.....	.....
Brönö	29.39	746.4	29.43	747.4	46.4	8.0	64	SSE	36	16	.....	.....	9	.....	.....	0	0	.....	.....
Christiania	29.80	756.8	29.95	760.6	47.7	8.7	88	SSE	18	8	.....	.....	10	.....	.....	0.177	4.5	.....	.....
Tromsö	29.38	746.2	29.42	747.3	41.0	5.0	63	SW	4	2	.....	.....	10	.....	.....	0.177	4.5	.....	.....

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	30.19	766.7	30.37	771.5	64.8	18.2	80	WSW	9.4	4.2	.....	.....	6	.....	.....	0	0	.....	Dr. J. A. Sampaio.
Campo Major	29.36	745.7	30.39	772.0	67.7	14.3	69	ESE	3.1	1.4	.....	.....	3	.....	.....	0.055	1.4	.....	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.16	766.1	30.25	768.3	73.2	22.9	67	SW	8.1	3.6	.....	.....	0	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	30.00	761.9	30.36	771.1	66.8	13.8	82	NE	13.7	6.1	.....	.....	2	.....	.....	0.079	2.0	.....	The Staff.
Ponta Delgada, (Azores)	30.32	770.0	30.39	771.8	69.4	20.8	78	SSW	7.4	3.3	.....	.....	4	.....	.....	0.020	0.5	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

Naval Series. Vessels.	Sea or swell. Height scale 0–9	Sea or swell. Direction from—		
S. S. India.				{ A. D. Pedroso, Com'd't. { Lt. S. A. P. de Mirando.
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	30.07	763.6	30.50	774.8	41.4	5.2	92	SE	9	4	.....	.....	10	.....	.....	.....	.....	.....	Astronomical Obs.
Wilna	30.11	764.9	30.56	776.2	36.3	2.4	85	S	2	1	.....	.....	10	.....	.....	.....	.....	.....	Astronomical Obs.
Dorpat	30.17	766.2	30.42	772.6	38.3	3.5	95	SSW	7	3	.....	.....	10	.....	.....	.....	.....	.....	Prof. Dr. Weihrauch.
St. Petersburg	30.35	770.8	30.36	771.2	38.1	3.4	92	SSW	9	4	.....	.....	10	.....	.....	.....	.....	Rain and fog	Central Physical Obs.
Kuopio	29.81	757.1	30.13	765.4	39.6	4.2	100	S	13	6	.....	.....	10	.....	.....	Blank	Blank	.....	Ch. Forsten.
Kieff	29.99	761.8	30.07	779.0	32.7	0.4	89	SE	7	3	.....	.....	5	.....	.....	.....	.....	.....	Physical Cabinet.
Nikolaiev	30.60	777.1	30.67	778.9	35.4	1.9	78	E	13	6	.....	.....	0	.....	.....	.....	.....	.....	Kurdakof.
Kertch	30.55	776.0	30.57	776.5	44.2	6.8	70	NE	16	7	.....	.....	0	.....	.....	.....	.....	.....	Lagorio.
Moscow	30.15	765.8	30.74	780.7	32.0	0.0	79	SSW	9	4	.....	.....	0	.....	.....	.....	.....	.....	Meteorological Obs.
Lugan	30.52	775.2	30.74	780.7	31.1	— 0.5	61	E	13	6	.....	.....	0	.....	.....	.....	.....	.....	Meteorological Obs.
Archangel	30.22	767.6	30.24	768.1	32.0	0.0	92	S	9	4	.....	.....	10	.....	.....	.....	.....	.....	Ogorodnikof.
Tiflis	29.14	740.2	30.62	777.8	43.0	6.1	75	Calm	0	0	.....	.....	7	.....	.....	.....	.....	.....	Physical Observatory.
Astrakhan	30.80	782.3	30.72	780.2	27.1	— 2.7	72	NNE	7	3	.....	.....	10	.....	.....	Blank	Blank	.....	Sebastianof.
Kasan	30.41	772.5	30.71	779.0	26.6	— 3.0	72	Calm	0	0	.....	.....	10	.....	.....	.....	.....	.....	Physical Cabinet.
Orenburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Tschernischef.
Ekaterinburg	29.55	750.6	30.56	776.3	26.8	— 2.9	87	NW	13	6	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Nukuss	30.34	770.7	30.60	777.1	28.5	— 1.8	86	WNW	2	1	.....	.....	3	.....	.....	.....	.....	.....	
Kasaly	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Bobrof.
Tashkend	28.87	733.4	30.72	780.4	24.1	— 4.4	95	Calm	0	0	.....	.....	10	.....	.....	.....	.....	.....	Michelson.
Barnaul	29.99	761.7	30.59	776.9	— 3.3	—19.6	85	W	0	0	.....	.....	1	.....	.....	.....	.....	.....	Meteorological Obs.
Yeniseisk	30.00*	761.9*	30.35*	770.9*	4.6*	—15.2*	86*	SW *	9 *	4 *	.....	.....	10 *	.....	.....	.....	.....	.....	Marks.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Usolzef.
Oorga	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Mossin.
Peking, (China)	29.87	758.6	30.01	762.2	36.1	2.3	85	Calm	0	0	.....	.....	9	.....	.....	.....	.....	.....	Physical Observatory.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nikolaievsk, on the Amoor	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

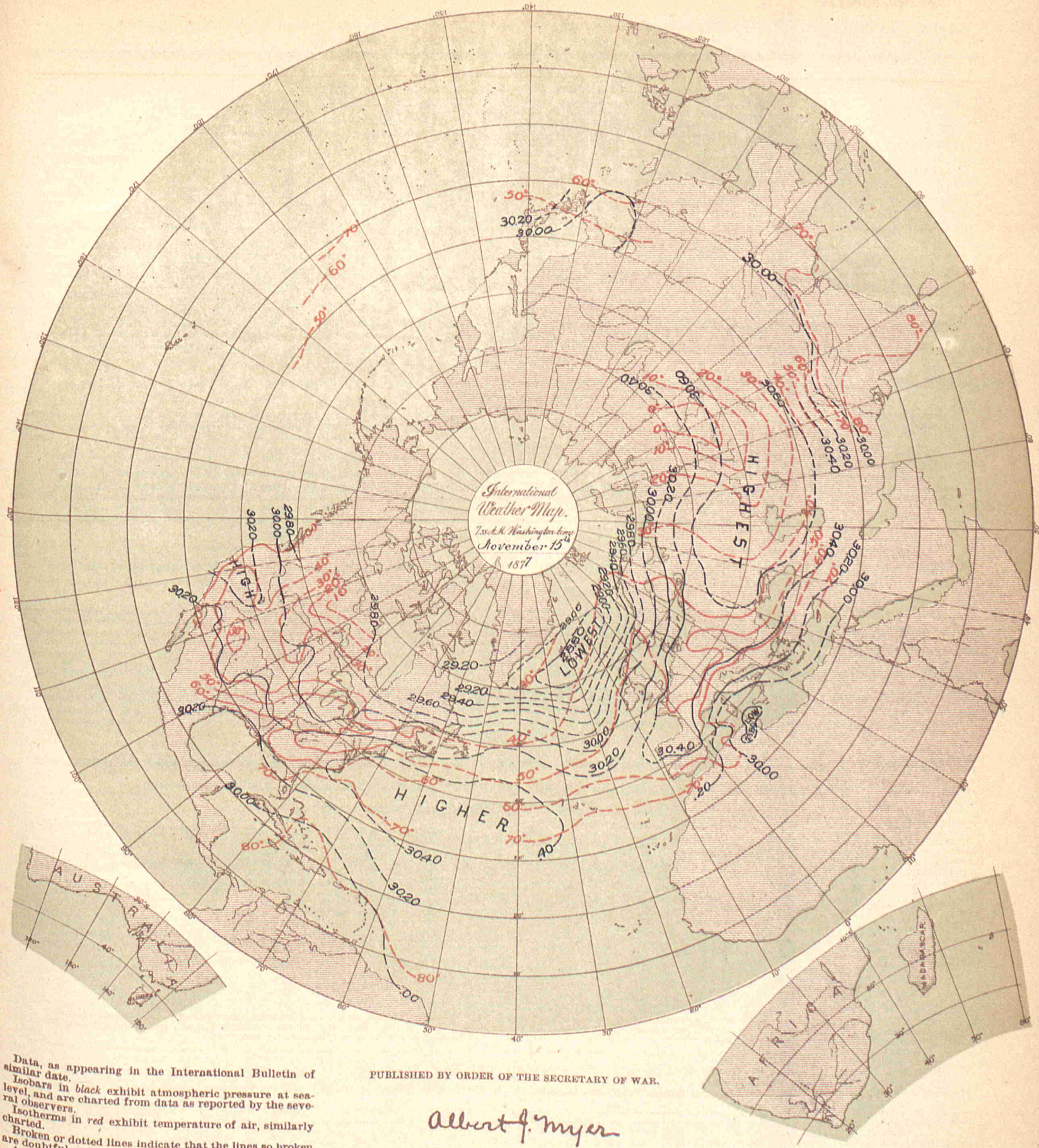
NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Ekaterinburg, 306.4? m., or 1,005.2? ft.; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft. *Published as given—reason for asterisk unknown.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Rave, Director.
Bilbao, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Manuel de Naveran
Burgos, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Domingo Martin y Perez.
Madrid, Royal Observatory	28.12	714.2	30.40	772.1	53.1	11.7	59	N	3.7	1.67	.....	1	0	.....	.....	0	0	Almost clear	The Staff.
Murcia, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Olayo Diaz, Director.
Santiago, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	30.03	762.7	30.09	764.4	73.3	22.9	91	ESE	4.0	1.8	.....	2c;ck	1k;n	.....	ENE	0.051	1.3	Clear	Benito Vines, S. J.
San Fernando, Naval Obs'y.	30.22	767.5	30.32	770.0	64.8	18.2	47	NE	8.7	3.9	.....	0	0	.....	.....	0	0	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W.I.	.....	.....	29.84	758.0	79.2	26.2	89	SE	0	0	.....	6s	2k	Calm	Calm	0.256	6.50	D. clouds	Leonardo de Tejeda, Chief of Engineers.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON.

SWEDISH SERIES.

Furnished by the cooperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Low'r 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.84	758.0	29.88	759.0	37.4	3.0	.....	S	.....	.....	4	.....	4	.....	.....	0.354	9.0	.....	
Umea	29.82	757.5	29.87	758.8	40.6	4.8	98	SW	.....	.....	2	.....	10	.....	.....	0.205	5.2	.....	
Hernosand	29.86	758.4	29.91	759.7	41.0	5.0	97	S	.....	.....	6	.....	10	.....	.....	0.043	1.1	Raining	
Stockholm	29.99	761.7	30.17	766 2	43.7	6.5	84	SSW	.....	.....	4	.....	10	.....	.....	0	0	.....	
Wisby	30.25	768.3	30.31	769.8	43.5	6.4	91	WSW	.....	.....	6	.....	10	.....	.....	0	0	.....	
Sub-Series.																			
Upsala	30.07	763.7	30.14	765.6	43.5	6.4	87	SSW	14.3	6.4	.....	.....	10	.....	.....	0	0	.....	Dr. Hildebrandsson.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the cooperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	29.01	736.8	30.46	773.6	46.0	7.8	73	NNE	.....	.....	2	.....	10	.....	.....	0	0	Covered	The Observatory.
Zurich	28.82	731.9	30.48	774.3	44.4	6.9	85	E	.....	.....	1	.....	10	.....	.....	0	0	Cov. red	The Observatory.

Note.—For Geneva the corresponding departures from the normal values are: Barometer, +10.4 mm; Thermometer, +1.0 cent.; Relative Humidity, —4 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the cooperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	30.48	773.0	54.7	12.6	74	N	13	6.0	.....	.....	8	.....	NE	0	0	.....	The Observatory.
Fao, (Persian Gulf)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salonica	.....	.....	30.07	763.8	63.3	17.4	.....	N	.....	.....	1	.....	10	.....	.....	.....	.....	.....	B. Stefanides.
Valona	.....	.....	30.25	768.4	66.6	19.2	.....	W	.....	.....	1	.....	2	.....	.....	0	0	Slightly cl'dy	A. Bertrandi.
Varna	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Imperial Observatory.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	30.03	762.7	30.15	765.7	70.7	21.5	55	Calm	.....	.....	0	.....	3c	.....	.....	0	0	D. clouds	Prof. C. V. A. Van Dyck

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the cooperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	29.95	760.7	30.05	763.3	38.8	3.5	97	Calm	0	0	.....	5	.....	.....	.....	0	0	.....	Hon. J. Ferguson.
Brockville, Ontario	.....	.....	30.13	765.3	44	6.7	.....	Calm	0	0	.....	.....	10s	.....	SW	0.05	1.3	Cloudy	W. R. Bigg.
*Chatham, N. B	.....	.....	30.03	762.7	42	5.6	78	SW	7	3.1	.....	2ks	8ks	W	W	Inap.	Inap.	Cloudy	G. A. Blair.
Charlottetown, P. E. Island	.....	.....	30.13	765.3	44	6.7	91	SW	13	5.8	.....	0	5s	.....	Calm	0	0	Fair	H. J. Cundall, C. E.
Cornwall, Ontario	29.87	758.7	30.06	763.5	46.3	7.9	86	SW	.....	.....	1	.....	10n	.....	.....	0.130	3.30	Raining	James Smith, M. A.
Dalhousie, N. B	30.00	762.0	30.08	762.7	40.0	4.4	80	NW	.....	.....	1	.....	.....	.....	.....	0	0	Gloomy	H. A. Johnson.
Esquimault, B. C	29.75	755.6	29.79	756.7	50.3	10.2	79	SW	.....	.....	.....	0	0	.....	.....	†0.22	†5.6	Clear	W. H. Bevis.
*Father Point, Quebec	.....	.....	30.00	762 0	39	3.9	82	SW	13	5.8	.....	.....	10n	.....	SW	0.03	0.8	Cloudy	J. McWilliams.
Fredericton, N. B	30.10	764.5	30.16	766.1	37.3	2.9	88	S	1.0	0.4	.....	.....	10s	.....	.....	0	0	Cloudy	Prof. Harrison.
*Fort Garry, Manitoba	.....	.....	29.84	757.9	27	— 2.8	94	S	4	1.8	.....	0	0	.....	.....	0	0	Clear	James Stewart.
Goderich, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	H. J. Strang, M. A.
Granton, Ontario	28.86	733.0	29.96	761.0	49	9.4	100	SE	.....	.....	2	.....	10n	.....	.....	0.26	6.6	Cloudy	James Grant.
*Halifax, N. S	30.09	764.3	30.22	767.6	45	7.2	92	SW	7	3.1	.....	.....	10n	.....	W	0	0	Cloudy	F. Allison, M. A.
Hamilton, Ontario	29.75	755.6	30.12	765.0	52.7	11.5	75	NE	.....	.....	2	10cs	.....	NE	.....	0	0	Cloudy	Geo. Dickson, M. A
Heart's Content, N. F	30.04	763.0	30.07	763.8	41	5.0	79	SW	.....	.....	2	.....	10	.....	.....	0	0	Overcast	E. Weedon.
*Kingston, Ontario	29.77	756.1	30.11	764.8	38	3.3	87	S	4	1.8	.....	.....	10n	.....	S	0.07	1.8	Light rain	S. Woods, M. A.
Little Glace Bay, N. S	30.10	764.5	30.14	765.5	42.6	5.9	85	SW	6	2.7	.....	4ck	.....	SW	.....	0	0	Fair	C. H. Rigby.
*Montreal, Quebec	29.89	759.2	30.10	764.5	45	7.2	76	SW	16	7.2	.....	.....	Haze	.....	W	0	0	Hazy	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.24	742.7	29.94	760.5	48	8.9	100	S	7	3.1	.....	.....	10n	.....	S	0.28	7.1	Light rain	Rev. R. Mosley.
Peterboro, Ontario	29.28	743.7	30.04	763.0	47.7	8.7	92	S	.....	.....	1	.....	10n	.....	.....	0	0	Cloudy	J. F. Jeffers, B. A.
Port Dover, Ontario	29.34	745.2	30.04	763.0	47	8.3	100	S	8	3.6	.....	.....	10n	.....	SW	0.06	1.5	Light rain	H. Morgan.
Port Hastings, N. S	30.11	764.8	30.16	766.1	38.5	3.6	.....	W	3	1.3	.....	.....	.....	.....	.....	0	0	Fine	Peter Grant.
Port Stanley, Ontario	29.35	745.5	29.99	761.7	51	10.6	89	SW	10	4.5	.....	.....	10n	.....	W	0.13	3.3	Cloudy	M. Payne.
*Quebec, Quebec	29.76	755.9	30.10	764.5	40	4.4	100	Calm	0	0	.....	.....	10n	.....	Calm	0.05	1.3	Cloudy	Capt. Ashe, R. N
*Rockliffe, Ontario	29.64	750.3	30.01	762.2	36	2.2	95	Calm	0	0	.....	.....	.....	.....	.....	0.17	4.3	Foggy	W. H. McIntyre.
St. John, N. B	30.04	763.0	30.21	767.3	43	6.1	91	S	8	3.6	.....	.....	10k;s	.....	.....	0	0	Cloudy	G. Murdock, C. E.
*Saugeen, Ontario	29.20	741.7	29.90	759.4	50	10.0	98	S	5	2.2	.....	.....	10s	.....	.....	0.44	11.2	Heavy rain	K. Stewart.
Stayner, Ontario	.....	.....	29.96	761.0	50	10.0	89	S	5	2.2	.....	.....	8n	.....	SW	Inap.	Inap.	Threatening	R. J. Cole.
Stratford, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	C. J. MacGregor, M. A.
*Sydney, C. B	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.255	6.48	.....	T. C. Hill.
*Toronto, Ontario	30.14	765.5	30.17	766.3	45	7.2	80	SW	12	5.4	.....	2ck	2ks	NW	W	0	0	Fair	Magnetic Observatory.
Windsor, N. S	29.95	753.1	30.04	763.0	47	8.3	95	S	5	2.2	.....	.....	10n	.....	Calm	0.13	3.3	Light rain	Prof. John E. Oram.
Woodstock, Ontario	30.11	764.8	30.21	767.3	44.0	6.7	87	SW	6	2.7	.....	2c	0	.....	.....	0	0	Clear	J. Montgomery.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	33.0	0.6	94	SW	.....	.....	.....	10k	10s	.....	.....	1.02	25.9	Cloudy	John Delany.

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.
†Rain-fall in 48 hours.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.99	761.7	30.23	767.8	45	7.2	75	S	6	2.7	.....	.....	Haze	.....	Calm	0	0	Dense haze.	
Alpena, Michigan	29.21	741.9	29.86	758.4	44	6.7	100	Calm	0	0	.....	.....	Fog	.....	Calm	0.19	4.8	Foggy	
Atlantic City, New Jersey	30.34	770.6	30.36	771.1	55	12.8	87	SW	8	3.6	.....	5cs	0	SW	.....	0	0	Fair	
Augusta, Georgia	30.17	766.3	30.36	771.1	55	12.8	90	Calm	0	0	.....	2cs	5s; fg	NW	SE	0.03	0.8	Foggy	
Baltimore, Maryland	30.28	769.1	30.33	770.4	47	8.3	77	Calm	0	0	.....	5ck	Sm'e	SW	Calm	0	0	Smoky	
Barnegat, New Jersey	30.32	770.1	30.34	770.6	50	10.0	93	SW	11	4.9	.....	5c	0	W	.....	0	0	Fair	
Bismarck, Dakota	28.12	714.2	29.84	757.9	32	0.0	79	W	2	0.9	.....	0	0	.....	.....	Inap	Inap.	Clear	
Boise City, Idaho	27.34	694.4	29.97	761.2	48	8.9	70	S	8	3.6	.....	.....	10s	.....	Calm	0.11	2.8	Threatening	
Boston, Massachusetts	30.12	765.0	30.28	769.1	51	10.6	73	SW	12	5.4	.....	7c	Haze	W	.....	0	0	Fair	
Brackettville, Texas	29.04	737.6	30.11	764.8	45	7.2	60	Calm	0	0	.....	5cs	0	Calm	.....	0	0	Fair	
Breckenridge, Minnesota	28.98	736.1	30.00	762.0	36	2.2	90	W	8	3.6	.....	.....	10s	.....	Calm	0.02	0.5	Cloudy	
Brownsville, Texas	30.11	764.8	30.18	766.6	63	17.2	94	Calm	0	0	.....	5ck	Fog	Calm	Calm	0	0	Foggy	
Buffalo, New York	29.33	745.0	30.03	762.7	48.0	8.9	92	S	10	4.5	.....	.....	10n	.....	SW	0.08	2.0	Light rain	
Burlington, Vermont	29.91	759.7	30.18	766.6	48	8.9	70	S	11	4.9	.....	10c	0	S	.....	0	0	Cloudy	
Cairo, Illinois	29.75	755.6	30.15	765.8	51	10.6	86	W	8	3.6	.....	0	2s	.....	Calm	0.14	3.6	Fair	
Camp Grant, Arizona	25.33	643.4	30.13	765.3	46	7.8	26	NE	.....	.....	1	0	0	.....	.....	0	0	Clear	
Camp Verde, Arizona	26.96	684.8	30.45	773.4	33	0.6	61	NW	.....	.....		0	0	.....	.....	0	0	Clear	
Campo, California	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Cape Hatteras, N. Carolina	30.35	770.9	30.36	771.1	59	15.0	87	Calm	0	0	.....	5k	2s	S	Calm	0	0	Fair	
Cape Henry, Virginia	30.36	771.1	30.38	771.6	58	14.4	61	SE	6	2.7	.....	.....	10s	.....	SW	0.36	9.1	Cloudy	
Cape Lookout, N. Carolina	30.40	772.1	30.41	772.4	59	15.0	87	NE	8	3.6	.....	8k	0	S	.....	0	0	Cloudy	
Cape May, New Jersey	30.32	770.1	30.35	770.9	54	12.2	86	S	17	7.6	.....	8cs	0	NW	.....	0	0	Fair	
Charleston, South Carolina	30.30	769.6	30.36	771.1	61	16.1	88	NE	4	1.8	.....	5cs	2s	SW	Calm	0	0	Fair	
Cheyenne, Wyoming	24.13	612.9	30.07	763.8	37	2.8	52	W	24	10.7	.....	0	0	.....	.....	0	0	Clear	
Chicago, Illinois	29.20	741.7	29.88	758.9	51	10.6	93	W	7	3.1	.....	.....	10n	.....	Calm	0.75	19.1	Light rain	
Cincinnati, Ohio	29.37	746.0	30.00	762.0	60	15.6	77	S	12	5.4	.....	.....	10ks	.....	SW	0.05	1.3	Threatening	
Cleveland, Ohio	29.32	744.7	30.04	763.0	53	11.7	79	SE	16	7.2	.....	.....	10s	.....	SW	0.15	3.8	Cloudy	
Concho, Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Corsicana, Texas	29.74	755.4	30.22	767.6	45	7.2	84	NW	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Davenport, Iowa	29.35	745.5	29.99	761.7	49	9.4	93	W	5	2.2	.....	.....	10s	.....	Calm	0.43	10.9	Cloudy	
Denison, Texas	29.42	747.3	30.25	768.3	45	7.2	84	Calm	0	0	.....	0	Sm'e	.....	Calm	0	0	Clear	
Denver, Colorado	24.89	632.2	30.11	764.8	37	2.8	45	S	3	1.3	.....	0	5s	.....	Calm	0	0	Fair	
Detroit, Michigan	29.23	742.4	29.89	759.2	52	11.1	93	SW	12	5.4	.....	.....	10s	.....	SW	0.15	3.8	Cloudy	
Dodge City, Kansas	27.53	699.2	29.92	760 0	33	0.6	79	NW	8	3.6	.....	0	2s	.....	NW	0	0	Clear	
Dubuque, Iowa	29.28	743.7	29.98	761.5	46	7.8	92	NW	3	1.3	.....	.....	10s	.....	Calm	0.37	9.4	Cloudy	
Duluth, Minnesota	29.26	743.2	29.96	761.0	32	0.0	79	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Eagle Pass, Texas	29.45	748.0	30.23	767.8	44	6.7	76	Calm	0	0	.....	2cs	Haze	Calm	Calm	0	0	Fair	
Eastport, Maine	30.09	764.3	30.16	766.1	44	6.7	92	SW	3	1.3	.....	8cs; hz	Haze	NW	.....	0	0	Hazy	
Erie, Pennsylvania	29.30	744.2	30.01	762.2	55	11.7	79	S	18	8.0	.....	.....	10s	.....	SW	0.28	7.1	Cloudy	
Escanaba, Michigan	29.27	743.4	29.94	760.5	37	2.8	90	N	15	6.7	.....	.....	10s	.....	N	0.01	0.3	Cloudy	
Florence, Arizona	28.51	724.1	30.11	764.8	45	7.2	24	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Fort Bayard, New Mexico	24.19	614.4	30.19	766.8	31	— 0.6	49	NW	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Fort Craig, New Mexico	25.73	653.5	.....	.....	29	— 1.7	77	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Fort Gibson, Indian Ter	29.64	752.8	30.20	767.1	36	2.2	90	E	1	0.4	.....	.....	Fog	.....	.....	0	0	Foggy	
Fort Griffin, Texas	28.94	735.1	30.27	768.8	40	4.4	73	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	28.96	735.6	30.12	765.0	38	3.3	81	N	.....	.....	2	0	0	.....	.....	0	0	Clear	
Galveston, Texas	30.15	765.8	30.19	766.8	62	16.7	83	NE	7	3.1	.....	0	2s	.....	W	0.97	24.6	Fair	
Grand Haven, Michigan	29.19	741.4	29.83	757.7	52	11.1	90	W	7	3.1	.....	.....	10s	.....	W	0.86	21.8	Cloudy	
Indianapolis, Indiana	29.22	742.2	30.00	762.0	54	12.2	86	SW	2	0.9	.....	.....	10s	.....	SW	0.58	14.7	Threatening	
Indianola, Texas	30.19	766.8	30.22	767.6	62	16.7	72	N	12	5.4	.....	0	2ks	.....	S	0	0	Clear	
Jacksboro, Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Jacksonville, Florida	30.27	768.8	30.30	769.6	61	16.1	88	E	2	0.9	.....	8k	0	SE	.....	Inap.	Inap.	Cloudy	
Keokuk, Iowa	29.38	746.2	30.00	762.0	49	9.4	86	W	8	3.6	.....	.....	10s	.....	Calm	0.60	15.2	Cloudy	
Key West, Florida	30.10	764.5	30.14	765.5	72.0	22.2	85	NE	11	4.9	.....	2c	Haze	NW	E	0.04	1.0	Fair	
Kittyhawk, North Carolina	30.42	772.7	30.44	773.2	59	15.0	87	E	5	2.2	.....	0	5ks	.....	S	0	0	Fair	
Knoxville, Tennessee	29.25	742.9	30.28	769.1	47	8.3	69	NE	2	0.9	.....	.....	10ks	.....	SW	0	0	Cloudy	
La Crosse, Wisconsin	29.22	742.2	29.98	761.5	35	1.7	100	N	3	1.3	.....	.....	Fog	.....	.....	0.14	3.6	Foggy	
La Mesilla, New Mexico	26.28	667.5	30.43	772.9	33	0.6	61	N	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Laredo, Texas	.....	.....	.....	.....	53	11.7	73	NW	2	0.9	.....	5cs	0	Calm	.....	0	0	Fair	
Leavenworth, Kansas	29.24	742.7	30.11	764.8	39	3.9	81	Calm	0	0	.....	0	Fog	.....	.....	0.18	4.6	Foggy	
Los Angeles, California	29.72	754.9	30.06	763.5	54	12.2	43	N	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Louisville, Kentucky	29.40	749.0	30.05	763.3	59	15.0	93	SW	16	7.2	.....	.....	10n	.....	SW	0.20	5.1	Light rain	
Lynchburg, Virginia	29.63	752.6	30.34	770.6	46	7.8	69	Calm	0	0	.....	2c	8s	Calm	W	0	0	Cloudy	
Maricopa Wells, Arizona	.....	.....	.....	.....	35	1.7	53	N	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Marquette, Michigan	29.24	742.7	29.95	760.7	40	4.4	73	NW	4	1.8	.....	.....	10s	.....	Calm	0	0	Cloudy	
Mason, Texas	28.58	725.9	30.42	772.7	40	4.4	73	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Memphis, Tennessee	29.86	758.4	30.18	766.6	54	12.2	79	NW	2	0.9	.....	0	2s; sm	.....	Calm	0.38	9.7	Clear	
Milwaukee, Wisconsin	29.22	742.2	29.90	759.4	46	7.8	92	NW	7	3.1	.....	.....	10s	.....	NW	0.38	9.7	Cloudy	
Mobile, Alabama	30.20	767.1	30.24	768.1	57.5	14.2	97	S	3	1.3	.....	.....	10s; fg	.....	W; Calm	0	0	Cloudy	
Montgomery, Alabama	30.03	762.7	30.27	768.8	57	13.9	87	SE	4	1.8	.....	10cs	Sm'e	W	Calm	0	0	Cloudy	
Morgantown, West Virginia	29.16	740.7	30.22	767.6	52	11.1	79	S	7	3.1	.....	.....	10s	.....	S	0	0	Threatening	
Mt. Washington, N. H.	23.82	605.0	30.18	766.6	32	0.0	79	NW	72	32.2	.....	8ck	Haze	S	NW	0	0	Fair	
Nashville, Tennessee	29.60	751.8	30.13	765.3	59	15.0	81	S	7	3.1	.....	.....	10ks	.....	S	0.42	10.7	Cloudy	
New Haven, Connecticut	30.20	767.1	30.32	770.1	47	8.3	85	SW	5	2.2	.....	5cs	Fog	.....	Calm	0	0	Cloudy	
New London, Connecticut	30.30	769.6	30.35	770.9	50	10.0	93	Calm	0	0	.....	2cs	2s; hz	W	Calm	0	0	Fair	
New Orleans, Louisiana	30.12	765.0	30.18	766.6	62	16.7	88	SE	4	1.8	.....	8c; k	0	W; SW	.....	0	0	Fair	
Newport, Rhode Island	30.28	769.1	30.34	770.6	53	11.7	86	SW	10	4.5	.....	10cs	0	SW	.....	0	0	Cloudy	
New York, New York	30.15	765.8	30.33	770.4	47	8.3	85	SW	10	4.5	.....	5cs	0	Calm	.....	0	0	Fair	
Norfolk, Virginia	30.34	770.6	30.40	772.1	53	11.7	86	S	7	3.1	.....	0	Haze	.....	Calm	0	0	Clear	
North Platte, Nebraska	27.19	630.6	29.87	758.7	30	— 1.1	79	W	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Olympia, Washington Ter.	29.91	759.7	29.95	760.7	50	10.0	93	SW	10	4.5	.....	.....	10n	.....	Calm	1.38	35.1	Light rain	
Omaha, Nebraska	28.93	734.8	30.05	763.3	32	0.0	89	S	1	0.4	.....	0	5s	.....	S	Inap.	Inap.	Fair	
Oswego, New York	29.80	756.9	30.13	765.3	50	10.0	64	SE	8	3.6	.....	.....	10s	.....	Calm	0	0	Cloudy	
Pembina, Dakota	29.01	736.8	29.86	758.4	32	0.0	89	W	7	3.1	.....	0	Haze	.....	Calm	0	0	Clear	
Philadelphia, Pennsylvania	30.29	769.4	30.34	770.6	49	9.4	93	SW	7	3.1	.....	5cs	Hz; fog	W	Calm	0	0	Fair	
Phœnix, Arizona	.....	.....	.....	.....	39	3.9	63	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Pike's Peak, Colorado	17.81	452.4	30.02	762.5	9	—12.8	57	W	25	11.2	.....	0	0	.....	.....	0	0	Clear	
Pioche, Nevada	24.22	615.2	29.99	761.7	36	2.2	46	NW	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Pittsburg, Pennsylvania	29.33	745.0	30.16	766.1	46	7.8	85	E	3	1.3	.....	.....	10n; fg	.....	W; E	0.09	2.3	Light rain	
Port Huron, Michigan	29.22	742.2	29.88	758.9	51	10.6	93	S	14	6.3	.....	.....	10n	.....	S	0.28	7.1	Light rain	
Portland, Maine	30.16	766.1	30.21	767.3	45	7.2	76	SW	12	5.4	.....	8c; k	Haze	W	.....	0	0	Cloudy	
Portland, Oregon	30.00	762.0	30.10	764.5	53	11.7	79	S	6	2.7	.....	0	5s	.....	Calm	0.53	13.5	Fair	
Prescott, Arizona	24.94	633.5	30.30	769.6	35	1.7	70	SE	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Punta Rassa, Florida	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Red Bluff, California	29.88	758.9	30.25	768.3	60	10.0	96	N	4	1.8	.....	.....	10n	.....	Calm	0.37	9.4	Light rain	
Rochester, New York	29.46	748.3	30.07	763.8	51	10.6	52	S	4	1.8	.....	.....	10s	.....	SW	Inap.	Inap	Cloudy	
Roseburg, Oregon	29.54	750.3	30.11	764.8	48	8.9	97	Calm	0	0	.....	Haze	2cs	.....	Calm	0.28	7.1	Fair	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Sacramento, California	30.15	765.8	30.24	768.1	51	10.6	93	N	4	1.8	.....	1c	0	W	.....	0.03	0.8	Clear.	
St. Louis, Missouri	29.50	749.3	30.07	763.8	52	11.1	79	W	8	3.6	.....	.....	10s	.....	.....	0.54	13.7	Cloudy	
St. Marks, Florida	30.27	768.8	30.29	769.4	55	12.8	93	E	3	1.3	.....	0	2ks	.....	S	0	0	Fair	
St. Paul, Minnesota	29.10	739.1	29.95	760.7	38	0.6	69	Calm	0	0	.....	0	2s	.....	Calm	0	0	Fair	
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salt Lake City, Utah	25.87	657.1	30.20	767.1	41	5.0	74	SE	2	0.9	.....	0	5s	.....	Calm	0	0	Fair	
San Antonio, Texas	29.53	750.0	30.13	765.3	48	8.9	85	N	3	1.3	.....	0	0	.....	.....	0	0	Clear	
San Diego, California	30.01	762.2	30.08	764.0	52	11.1	66	N	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Sandusky, Ohio	29.30	744.2	29.97	761.2	56	13.3	80	SW	24	10.7	.....	.....	10s	.....	SW	0	0	Clear	
Sandy Hook, New Jersey	30.30	769.6	30.32	770.1	49	9.4	85	S	9	4.0	.....	8c	0	W	.....	0.10	2.5	Cloudy	
San Francisco, California	30.14	765.5	30.20	767.1	57	13.9	93	SE	2	0.9	.....	.....	10n	.....	Calm	0	0	Cloudy	
Santa Fé, New Mexico	23.42	594.9	29.96	761.0	30.5	—0.8	84	N	12	5.4	.....	0	1s	.....	Calm	0.08	2.0	Light rain	
Savannah, Georgia	30.24	768.1	30.33	770.4	62	16.7	88	Calm	0	0	.....	8c	Sm'e	SW	.....	0	0	Clear	
Shreveport, Louisiana	30.02	762.5	30.24	768.1	51	10.6	93	W	2	0.9	.....	0	0	.....	.....	0	0	Fair	
Smithville, North Carolina	30.37	771.4	30.41	772.4	61	16.1	88	NE	4	1.8	.....	5cs	2ks	W	S	0.15	3.8	Clear	
Springfield, Massachusetts	30.08	764.0	30.21	767.3	47	8.3	77	S	9	4.0	.....	2c	5s	W	S	0	0	Cloudy	
Stanwix, Arizona	.....	.....	.....	.....	40	4.4	39	Calm	.....	.....	.....	0	0	.....	.....	0	0	Cloudy	
Stockton, Texas	27.16	689.8	30.16	766.1	34	1.1	61	S	4	1.8	.....	0	1s	.....	Calm	0	0	Clear	
Thatcher's Island, Mass	30.24	768.1	30.29	769.4	46	9.4	77	SW	16	7.2	.....	8cs	0	SW	.....	0	0	Clear	
Toledo, Ohio	29.26	743.2	29.92	760.0	55	12.8	87	S	16	7.2	.....	0	8s	.....	S	0.07	1.8	Cloudy	
Tucson, Arizona	27.72	704.1	30.26	768.6	37	2.8	62	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Tybee Island, Georgia	30.29	769.4	30.32	770.1	63	17.2	94	SE	2	0.9	.....	8c	Fog	Calm	Calm	0	0	Fair	
Umatilla, Oregon	29.61	752.1	.....	.....	45	7.2	92	W	4	1.8	.....	0	0	.....	.....	0.12	3.0	Clear	
Vicksburg, Mississippi	29.96	761.0	30.22	767.6	62	16.7	88	Calm	0	0	.....	.....	10s	.....	W	0.43	10.9	Cloudy	
Virginia City, Montana	24.27	616.4	29.75	755.6	37	2.8	63	NW	6	2.7	.....	.....	10s	.....	Calm	0	0	Cloudy	
Visalia, California	29.88	758.9	30.26	768.6	41	5.0	91	Calm	0	0.	.....	0	0	.....	.....	0	0	Cloudy	
Washington, D. C.	30.22	767.6	30.33	770.4	48	8.9	78	S	10	4.5	.....	3cs;ck	2s	W;SW	W	0	0	Clear	
Wickenburg, Arizona	.....	.....	.....	.....	36	2.2	4	N	.....	.....	.....	0	0	.....	.....	0	0	Fair	
Wilmington, N. Carolina	30.31	769.9	30.39	771.9	58	14.4	87	E	3	1.3	.....	5c	Fog	W	E	0	0	Clear	
Winnemucca, Nevada	25.85	656.6	30.21	767.3	35	1.7	90	NE	6	2.7	.....	0	8s	.....	Calm	0	0	Fair	
Wood's Holl, Mass	30.29	769.4	30.34	770.8	57	13.9	75	SW	13	5.8	.....	Haze	2s	.....	SW	0.07	1.8	Cloudy	
Yankton, Dakota	28.78	729.7	30.08	764.0	28	—2.2	82	Calm	0	0	.....	2cs	0	NW	.....	0	0	Fair	
Yuma, Arizona	30.00	762.0	30.17	766.3	45	7.2	24	N	5	2.2	.....	0	0	.....	.....	0	0	Fair	
SUB-SERIES.																			
York Factory, B. A.	29.79	756.7	29.85	758.2	4.0	—15.6	87	W	11	4.9	.....	0	0	.....	.....	0.07	1.8	Fair	J. Fortescue, W. Wood.
Havana, Cuba, W. I.	30.03	762.7	30.05	763.3	74	23.3	85	Calm	0	0	.....	4k	4ks	Calm	E	0.10	2.5	Cloudy	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.12	765.0	30.13	765.3	78	25.6	90	Calm	0	0	.....	8c	2s	W	NE	0	0		James Gall.
Navassa, W. I.	29.82	757.4	29.90	759.4	82.5	28.1	.....	NE	20	8.9	.....	.....	.....	.....	.....	0.43	10.9	Clear	F. M Everett.
St. Thomas, W. I.	.....	.....	.....	.....	77	25.0	95	E	3	1.3	.....	.....	10n	.....	.....	5.50	139.7	.....	G. O. Gellich.
Paramaribo, D. Guiana, S. A.	.....	.....	30.00	762.0	84	28.9	71	E	.....	.....	2	4c	5k	E	.....	0	0	Fair	C. J. Hering.
Batavia, Dutch Guiana, S. A.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Dr. H. Groot.
Medellin, Colombia, S. A.	25.23	640.8	.....	.....	63.5	17.5	87	NW	.....	.....	2	.....	10s;ks	.....	.....	0.02	0.5	Light rain	Thomas Herran.
Honolulu, Oahu, H. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Daniel Smith.
Makawao, Maui, H. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters: Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,893 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,152 ft., or 1,578.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.: Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.: Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.: Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Poche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,680 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.57 in.; Cheyenne, 6.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.86 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard Mare Island, Cal.	30.29	769.4	54	12.2	54	12.2	87	ESE	9	4.0	....	.....	10	.....	Calm	0.01	0.3	.....	.....	Threatening	
Navy Yard, Pensacola, Fla.	30.34	770.6	.....	.....	63	17.2	89	NNE	4	1.8	....	.....	10	.....	.....	0	0	.....	.....	D. clouds	
Navy Yard, Portsmouth, N.H	30.20	767.1	64	17.8	45	7.2	84	SW	5	2.2	.....	.....	.....	.....	.....	0	0	.....	.....	Clear	
Naval Hospital, Yokohama, Japan	30.16	766.1	54	12.2	46	7.8	62	NNW	.....	.....	2	.....	10ks	.....	SW	0	0	.....	.....	Cloudy	
Adams. Punta Arenas, Patagonia.	29.69	754.1	44	6.7	44	6.7	68	W	.....	.....	3	.....	1	.....	W	Light	Light	None	.....	D. clouds.	
Alert, Yokohama, Japan	30.32†	770 1†	52	11.1	52	11.1	100	N	.....	.....	2	.....	10	.....	N	.....	.....	Smooth	.....	D. clouds	
Alliance, Constantinople, Turkey.	30.52	775 2	65	18.3	59	15.0	88	NE	.....	.....	2–3	.....	10	.....	NE	.....	.....	.....	.....	Overcast	
Ashuelot. Tientsin, China	30.03	762.7	51	10.6	43	6.1	92	NNE	.....	.....	1–2	.....	10	.....	Calm	.....	.....	Smooth	.....	D. clouds	
Canonicus, New Orleans, La	30.16	766.1	48	8.9	61	16.1	88	SE	.....	.....	1	.....	6	.....	.....	.....	.....	.....	.....	Cloudy	
Colorado, New York, N. Y.	30.34	770.6	48	8.9	48	8.9	85	S	2	0.9	.....	.....	8	.....	S	.....	.....	.....	.....	Cloudy	
Despatch, Constantinople, Turkey.	30.57	776.5	67	19.4	56	13.3	81	NE	.....	.	3	.....	8	.....	N&E	.....	.....	.....	.....	Cloudy	
Franklin, Norfolk, Va	30.47	773.9	51	10.6	54	12.2	80	S	6	2.7	.....	.....	2	.....	S	0	0	.....	.....	Clear	
Gettysburg, Malta	29.77‡	756.1‡	.....	.....	67	19.4	100	SE	.....	.....	3	.....	9	.....	.....	Blank	Blank	.....	.....	D. clouds	
Guard, N. 35° 32′, W. 39° 00′	30.51	774.9	67	19.4	65	18.3	84	NNE	.....	.....	5	.....	10	.....	N	.....	.....	Moderate.	S	D. clouds	
Lackawana, San Francisco, Cal	30.24	768.1	.....	.....	60	15.6	88	Calm	.....	....	0	.....	10	.....	.....	.....	.....	.....	.....	Drizzling	
Marion, Smyrna, Turkey	30.30	769.6	64	17.8	66	18.9	40	NNE	.....	.....	2	.....	3	.....	Calm	0	0	Smooth	NE	D. clouds	
Michigan, Erie, Pa	29.59	751.6	57	13.9	55	12.8	87	S	.....	....	4	.....	10	.....	S	.....	.....	.....	.....	Raining	
Monocacy, Yokohama, Japan	30.18	766.6	63	17.2	50	10.0	58	N	.....	.....	2–3	.....	7	.....	N	Blank	Blank	.....	.....	D. clouds	
Monongahela, N. 36° 50, W. 11° 12′	29.89	759.2	64	17.8	64	17.8	73	ESE	.....	.....	4–5	.....	kn	.....	.....	.....	.....	Moderate.	.....	Raining	
New Hampshire, Port Royal, S.C.	30.50	774.7	.....	.....	64	17.8	94	NNE	5	2.2	.....	.....	6	.....	SSE	0	0	.....	.....	D. clouds	
Omaha, Callao, Peru	30.11	764.8	73.5	23.1	71	21.7	90	SE	2	0.9	.....	.....	10	.....	Calm	0	0	Smooth	.....	Dull	
Onward, Callao, Peru	30.02	762.5	72	22 2	69	20.6	82	SSE	.....	.....	2	.....	10	.....	.....	.....	.....	Long	W	Hazy	
Ossipee, Norfolk, Va	30.47	773.9	75	23.9	55	12.8	80	SSE	.....	.....	1	.....	3	.....	W	.....	.....	.....	.....	D. clouds	
Palos, Shanghai, China	29.96	761.0	65	18.3	61	16.1	94	SW	.....	.....	2	.....	9	.....	W	.....	.....	.....	.....	Coudy	
Pensacola, San Francisco, Cal	30.27	768.8	.....	.....	58	14.4	94	Calm	.....	.....	0	.....	10	.....	.....	.....	.....	.....	.....	Drizzling	
Plymouth, Norfolk, Va	30.42	772.7	60	15.6	56	13.3	94	S	.....	.....	2	.....	6	.....	S	.....	.....	.....	.....	Pleasant	
Ranger, Shanghai, China	30.12	765.0	.....	.....	61	16.1	88	N	.....	.....	2	.....	6	.....	Calm	.....	.....	.....	.....	Cloudy	
Rio Bravo, Brownsville, Texas	30.03	762.7	.....	.....	64	17.8	94	NW	.....	.....	2	.....	6	.....	NW	.....	.....	.....	.....	D. clouds	
Santee, Annapolis, Md	30.10	764.5	66	18.9	52	11 1	79	SW	.....	.....	2	.....	9	.....	SW	0	0	.....	.....	Cloudy	
Saratoga, Hampton Roads, Va	30.76†	781.3†	.....	.....	60	15.6	94	SW	.....	.....	2	.....	3	.....	Calm	0	0	.....	.....	Clear	
St. Louis, League Island, Pa	30.15	765.8	48	8.9	47	8.3	85	SSW	2	0.9	.....	.....	4	.....	SW	0	0	.....	.....	Clear	
Swatara, Hampton Roads, Va	30.45	773.4	.....	.....	58	14.4	76	S	.....	.....	3	.....	10	.....	S	.....	.....	.....	.....	D. clouds	
Tennessee, Yokohama, Japan	30.30	769.6	63	17.2	49	9.4	57	NNW	6	2.7	.....	.....	10	.....	Calm	.....	.....	None	.....	Showery	
Trenton, Villefranche, France	30.28	769.1	72	22.2	70	21.1	51	W	5	2.2	.....	.....	2	.....	W	0	0	.....	.....	D. clouds	
Vandalia, Villefranche, France.	30.29	769.4	71	21.7	71	21.7	53	E	.....	.....	1	.....	2	.....	Calm	.....	.....	.....	.....	D. clouds	
Wabash, Boston, Mass	30.31	769.9	59	15.0	49	9.4	85	SW	11	4.9	.....	.....	7	.....	Calm	0	0	.....	.....	D. clouds	
Wyoming, Washington, D. C.	30.45†	773.4†	.....	.....	52	11.1	.....	WSW	.....	.....	3	.....	8	.....	N&E	.....	.....	.....	.....	D. clouds	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. ‡ Barometer corrected for instrumental error and reduced to sea-level.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.	Character.	Direction from—		
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—				
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama, N. 7° 20′, W. 80° 05′			29.68	753.9	81	27.2	66	N			3		7		NNW	Light	ENE	D. clouds	Capt. Howard.
S. S. City of Peking, N. 30° 51′, W. 164° 35′			30.09*	764.3*	54	12.2	93	SW			5		10		SW	Mod'ate	WNW	Overcast	Lt. Z. L. Tanner, U.S.N
S. S. City of Sydney																Long			Capt. Dearborn.
S. S. City of Tokio, N. 30° 05′, E. 177° 02′			30.18	766.6	73	22.8		S			6		2		SSE	Short	SSW	D clouds	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

NOTE.—The originals give the wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. *Aneroid.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson.
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.

S. S. Belgic																			Capt. John Metcalf.
S. S. Gaelic																			Capt. W. H. Kidley
S. S. Oceanic, Yokohama, Japan			29.75	755.6	54	12.2	74	Var.			4		6		Var.			D. clouds	Capt. H. Parsell.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig																			Capt. K. Undütsch.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio, N. 45° 41′, W. 42° 51′			30.39	771.9	44.0	6.7	72	W			6		k		W	High	W	D. clouds	Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, nor distinguish between upper and lower clouds.

UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Lo'wr	Upper.	Lower.	Character	Direction From—		
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second	0—10.	0—10.	0—10.	From—	From—				
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana. N. 44° 37′, W. 42° 43′			30.20*	767.1*	46	7.8	??	N			4		7		NNE	Heavy	NNW	Cloudy	Captain Sargent.
S. S. Ohio. Liverpool			30.04	763.0	65	18.3	89	S			1		8?		S			Clear?	Captain Morrison.
S. S. Pennsylvania. N. 39° 42′, W. 73° 50′			30.28†	769.1†	67	19.4	100	SW			4		4		NE	Smooth		Clear	Captain Harris.

NOTE.—The originals give the barometer as read off; the wind-force by the scale 0 to 12. *Aneroid; correction for elevation applied, instrumental error not known.
†Corrected for temperature and elevation, instrumental error not known.

RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

S. S. Nederland	Capt. Randle.
S. S. Switzerland	Capt. Jackson.
S. S. Vaderland	Capt. Nichols.

ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

S. S. Hibernian	Capt. W. Richardson.
S. S. Scandinavian	

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller. Kennebunk, Maine			30.25	768.3	46	7.8	92	SW	6	2.7			8ck		SW			Cloudy	Capt. James Jorgensen.

NOTE.—The originals for the schooner Addie Fuller give the amount of cloudiness by the scale 0 to 4; the barometer as read off.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer. U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON NOVEMBER 16, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:48 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.

1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.

1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:28 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours	.....	.....	30.24	768.1	58.6	14.8	91	Calm	.....	.....	0	.....	9	.....	.....	1.740	44.2	Covered	Michel.
Algiers	.....	.....	30.04	762.9	62.2	16.8	81	SE	.....	.....	1	.....	10	.....	.....	0.650	16.5	Covered	Peter.
La Calle	.....	.....	30.00	762.0	61.5	16.4	79	ENE	.....	.....	3	.....	6	.....	.....	0.031	0.8	Cloudy.....	Fleury.
Tunis	.....	.....	29.99	761.7	60.4	15.8	79	NE	.....	.....	3	.....	7	.....	.....	0.209	5.3	Very cloudy	Jacques.
Sfax	.....	.....	29.93	760.1	57.2	14.0	.....	SSE	.....	.....	2	.....	10	.....	.....	1.068	27.0	Covered	Husson.
Saida	.....	.....	30.14	765.5	51.8	11.0	76	NNW	.....	.....	3	.....	7	.....	.....	1.378	35.0	Very cloudy	Millot.
Tebessa	.....	.....	29.94	760.4	.....	.....	.....	E	.....	.....	1	.....	9	.....	.....	.....	.....	Covered	Bourgeois.
Geriville	.....	.....	30.00	762.1	49.6	9.8	94	N	.....	.....	4	.....	8	.....	.....	0.28	7.	Very cloudy	Lemaillot.
Laghouat	.....	.....	30.00	762.1	53.6	12.0	76	W	.....	.....	4	.....	8	.....	.....	0	0	Very cloudy	Guyot.
Biskra	.....	.....	29.88	759.0	66.9	19.4	51	SE	.....	.....	2	.....	10	.....	.....	0	0	Covered.....	Kuntz.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890 ? meters, or 2,919.9 ? feet; Tebessa, 1,088 ? m., or 3,569.4 ? ft.; Geriville, 1,380 ? m.; or 4,461.7 ? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

Agram	29.84	757.9	30.40	772.1	52.5	11.4	61	Calm	.....	.....	0	.....	2	.....	.....	0	0	.....	Prof. Ivan Stozir
Cracow, I. R. Observatory	29.60	751.8	30.39	771.8	46.0	7.8	92	NE	.....	.....	1	.....	0	.....	.....	0.004	0.1	.....	Dr. Wierzbiski.
Eperies	29.51	749.5	30.41	772.5	46.8	8.2	81	N	.....	.....	1	.....	0	.....	.....	0	0	.....	Julius Mikolik.
Gratz	29.13	740.0	30.42	772.7	47.1	8.4	80	SSW	.....	.....	2	.....	10	.....	.....	0	0	.....	Andreas Rospini.
Hermannstadt	28.95	735.4	30.42	772.7	44.8	7.1	64	ESE	.....	.....	3	.....	3	.....	.....	0	0	.....	Prof. Reissenberger.
Kremsmünster	28.95	735.3	30.34	770.6	41.7	5.4	94	Calm	.....	.....	0	.....	10	.....	.....	0	0	.....	Prof. C. Wagner.
Lemberg	29.39	746.5	30.42	772.6	41.4	5.2	93	SW	.....	.....	1	.....	10	.....	.....	0	0	.....	Dr. T. Stanecki.
Pola	30.19	766.7	30.30	769.5	58.5	14.7	50	E	.....	.....	2	.....	1cs	.....	.....	0	0	.....	I.R.Hydrographic Office.
Szathmar	30.06	763.5	30.54	775.7	44.2	6.8	78	NW	.....	.....	2	.....	10	.....	.....	0	0	.....	Johann Tamas, S. J.
Szegedin	30.19	766.8	30.48	774.2	44.6	7.0	85	S	.....	.....	1	.....	10	.....	.....	0	0	.....	Karl Stancel.
Trieste	30.21	767.4	30.32	770.0	57.6	14.2	68	E	.....	.....	1	.....	0	.....	.....	0	0	Clear	P. Busin.
Vienna	29.65	753.0	30.37	771.3	46.0	7.2	91	S	.....	.....	2	.....	.....	.....	.....	0	0	.....	I. R. Central Met. Obs'y.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time, and at Trieste at 7 a. m. of the following day. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

Arlon	28.85	732.9	30.42	772.6	41.9	5.5	90	Calm	.....	.....	0	.....	10	.....	.....	0.008	0.2	.....	Prof. M. Passau.
Brussels	30.12	765.1	30.37	771.3	46.0	7.8	91	SW	.....	.....	5	.....	10	.....	SW	0.059	1.50	Light rain...	Royal Observatory.
Furnes	30.24	768.2	30.27	768.8	50.5	10.3	95	SSW	.....	.....	2	.....	10	.....	.....	0	0	Foggy	M. E. de Cae.
Maeseyck	30.21	767.3	30.34	770.6	50.9	10.5	79	SW	.....	.....	6	.....	10	.....	.....	0.079	2.0	.....	M. Pierrot.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer
Aberdeen	29.82	757.4	29.92	760.0	47.9	8.8	.....	SW	25	11.2	.....	.....	1	.....	.....	0	0	Blue sky.....	W. Boswell.
Ardrossan	30.07	763.8	30.09	764.3	50	10.0	.....	SW	.....	.....	4	.....	6	.....	.....	.....	.....	D. clouds.....	William McNeil.
Armagh, Observatory	.....	.....	30.22	767.6	48.4	9.1	.....	SW	15	6.7	.....	.....	8	.....	.....	.....	.....	D. clouds.....	S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)	.....	.....	30.27	768.8	51.0	10.6	.....	WSW	31	13.9	.....	.....	2	.....	.....	.....	.....	Blue sky.....	John Hartnup.
Birr Castle, (Parsonstown)	.....	.....	30.31	769.9	50.2	10.1	.....	SW	.....	.....	2-3	.....	1	.....	.....	.....	.....	Blue sky.....	J. L. E. Dreyer.
Bradford, Yorkshire	29.85	758.2	30.25	768.3	50.1	10.1	.....	N	.....	.....	3	.....	3	.....	.....	0.07	1.8	D. clouds.....	J. McLandsborough.
Bridgetown, (Barbados)	29.88	758.9	29.92	760.0	80.0	26.7	.....	E	.....	.....	1	.....	3	.....	.....	.....	.....	D. clouds.....	Pvt. G. W. Roberts, A.
Cambridge, Observatory	.....	.....	30.30	769.6	56.9	13.8	.....	SW	.....	.....	1	.....	10	.....	.....	.....	.....	Overcast.....	H. Todd. [H. C.
Cardington	.....	.....	30.29	769.4	52.0	11.1	.....	W	.....	.....	1	.....	6	.....	.....	.....	.....	D. clouds.....	John McLaren.
Chatham, School M. E	30.15	765.8	30.28	769.1	52.7	11.5	.....	SW	.....	.....	1	.....	8	.....	.....	.....	.....	Hazy.....	Lt. W. G. Morris, R. E.
Dartmoor	28.89	733.8	30.39	771.9	49.0	9.4	.....	NW	.....	.....	2	.....	4	.....	.....	.....	.....	Fine.....	Alexander Watt.
Davos Platz (Switzerland)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Francis Redford, M. A.
Donaghadee	30.16	766.1	30.19	766.8	46	7.8	.....	W	.....	.....	4	.....	8	.....	.....	.....	.....	D. clouds.....	J. Mac Gowan.
Dover	30.27	768.8	30.29	769.4	56	13.3	.....	WSW	.....	.....	3	.....	7	.....	.....	.....	.....	¾ clouded...	J. Costello.
Eccles, (near Manchester)	.....	.....	30.17	766.3	53.0	11.7	.....	WSW	7.6	3.4	.....	.....	7	.....	.....	.....	.....	D clouds....	Thomas Mackereth.
Falmouth, Observatory	30.18	766.6	30.41	772.4	53.9	12.2	.....	NW	.....	.....	3	.....	5	.....	.....	.....	.....	D. clouds.....	The Staff.
Fort Napier, (Natal)	27.37	695.2	29.57	751.1	83.4	28.6	.....	NW	.....	.....	4	.....	10	.....	.....	.....	.....	Overcast.....	Pvt. G. Salmon, A.H. C.
Free Town, (Sierra Leone)	.....	.....	29.91	759.7	76.0	24.4	.....	SE	.....	.....	1	.....	5	.....	.....	.....	.....	D. clouds.....	
Galway, Queen's College	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	30.13	765.3	30.18	766.6	66.4	19.1	.....	NE	.....	.....	4	.....	0	.....	.....	.....	.....	Blue sky.....	Corpl. C. Aitken, A.H.C.
Glasgow, Observatory	29.86	758.4	30.07	763.8	47.0	8.3	.....	SSW	.....	.....	8	.....	9	.....	.....	.....	.....	Squally.....	D. G. Maclean.
Great Yarmouth	30.25	768.3	30.25	768.3	53	11.7	.....	NW	.....	.....	3	.....	3	.....	.....	.....	.....	Hazy.....	G. T. Watson.
Greenwich, Royal Obs'y	30.14	765.5	30.31	769.9	54.0	12.2	.....	NW	.....	.....	2	.....	4	.....	.....	.....	.....	D. clouds.....	The Staff, for G. B. Airy.
Guernsey	30.14	765.5	30.36	771.1	57	13.9	.....	NW	.....	.....	2	.....	7	.....	.....	.....	.....	D. clouds.....	Dr. S. E. Hoskins, F.R.S.
Helston	.....	.....	30.39	771.9	56	13.3	.....	N	.....	.....	4	.....	2	.....	.....	0.07	1.8	D. clouds.....	M. P. Moyle.
Holyhead	30.25	768.3	30.30	769.6	50	10.0	.....	WSW	.....	.....	4	.....	1	.....	.....	.....	.....	Blue sky.....	John Tilston.
Jersey	30.10	764.5	30.39	771.9	56.5	13.6	.....	NW	.....	.....	8	.....	10	.....	.....	.....	.....	Rain and fog	J. Fisher.
Kew, Observatory	.....	.....	30.32	770.1	55.7	13.2	.....	WNW	12	5.4	.....	.....	3	.....	.....	.....	.....	D. clouds.....	The Staff.
Kingstown	30.27	768.8	30.30	769.6	50	10.0	.....	W	.....	.....	4	.....	1	.....	.....	.....	.....	Blue sky.....	George Mitchell.
Leicester, Museum	.....	.....	30.29	769.4	53.2	11.8	.....	W	.....	.....	1	.....	1	.....	.....	.....	.....	Blue sky.....	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.92	760.0	30.00	762.0	65.8	18.8	.....	E	.....	.....	5	.....	6	.....	.....	.....	.....	D. clouds....	Sgt. C. Arbeiter, A.H.C.
Nairn	29.76	755.9	29.85	758.2	42	5.6	.....	W	.....	.....	1	.....	10	.....	.....	.....	.....	Overcast.....	W. D. Penny.
Nassau, (Bahamas)	.....	.....	30.05	763.3	77.8	25.4	.....	N	.....	.....	3	.....	4	.....	.....	.....	.....	D. clouds.....	C. S. Duncombe.
Nottingham, Observatory	30.11	764.8	30.30	769.6	53.7	12.1	.....	SW	.....	.....	2	.....	4c;k	.....	SW	0	0	D. clouds.....	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.77	756.1	30.30	769.6	52.0	11.1	.....	W	.....	.....	3	.....	8	.....	.....	.....	.....	D. clouds.....	Rev. Stephen Whitty
Oxford, Radcliffe Obs'y	.....	.....	30.32	770.1	54	12.2	.....	WNW	.....	.....	1	.....	7	.....	.....	.....	.....	D. clouds.....	F. Lucas
Plymouth	30.30	769.6	30.38	771.6	54.0	12.2	.....	NW	.....	.....	2	.....	2	.....	.....	.....	.....	D. clouds.. ..	John Merrifield.
Roche's Point	30.32	770.1	30.36	771.1	50	10.0	.....	WNW	.....	.....	3	.....	5	.....	.....	.....	.....	Fine.....	W. Kennedy.
Saint Ann's Head	30.20	767.1	30.37	771.4	53	11.7	.....	WNW	.....	.....	2	.....	1	.....	.....	.....	.....	Blue sky.....	John C. Walker.
Sandwick Manse, (Orkneys)	.....	.....	29.66	753.4	45	7.2	.....	SW	35	15.6	.....	.....	8	.....	.....	.....	.....	Showery.. ..	Sergt. W. H. Lyne.
Scutari, Cemetery, (Turkey)	.....	.....	30.37	771.4	55.8	13.2	.....	NNE	.....	.....	2	.....	5	.....	.....	Blank	Blank	D. clouds.....	W. F. Cooper.
Sheffield	30.02	762.5	30.27	768.8	50.9	10.5	.....	WNW	.....	.....	2	.....	3	.....	.....	0	0	Blue sky.....	Rev. F. Redford, M. A.
Silloth Rectory	30.14	765.5	30.17	766.3	50.8	10.4	70	NW	.....	.....	4	.....	0	.....	.....	0	0	Blue sky.....	Rev. S. J. Perry.
Stonyhurst, Observatory	.....	.....	.....	.....	49.0	9.4	.....	W	.....	.....	4	.....	7	.....	.....	.....	.....	D. clouds.....	John Smith.
Stornoway, Lews C. (Hebr.)	.....	.....	29.78	755.1	44	6.7	.....	WSW	.....	.....	6	.....	8	.....	.....	.....	.....	D. clouds.....	Rev. C. H. Griffith, F.M.S.
Stratfield Turgiss	30.11	764.8	30.33	770.4	55.0	12.8	.....	W	.....	.....	1	.....	2	.....	.....	.....	.....	Blue sky.....	John Trotter.
Thurso	.....	.....	29.72	754.9	42	5.6	.....	SW	.....	.....	2	.....	5	.....	.....	.....	.....	D. clouds.....	W. Newcombe.
Truro, Royal Institution	.....	.....	30.42	772.7	55	12.8	.....	NW	.....	.....	4	.....	4	.....	.....	.....	.....	D. clouds.....	The Staff.
Valencia, Observatory	.....	.....	30.26	768.6	51.4	10.8	.....	W	24	10.7	.....	.....	3	.....	.....	.....	.....	D. clouds.....	
Sub-Series.																			
Calf of Man, (Isle of Man)	.....	.....	.....	.....	48	8.9	.....	W	.....	.....	1	.....	5	.....	.....	0	0	.....	Henry Mercer.
Cape Good Hope, Obs'y	29.95	760.7	29.99	761.7	66.0	18.9	49	SSW	11	4.9	.....	2	4	.....	.....	.....	.....	.....	The Staff, for E. J. Stone.
Hobart Town, (Tasmania)	.....	.....	29.81	757.2	49.0	9.4	86	S	.....	.....	2	.....	10kn	.....	.....	0.02	0.5	Light rain...	Francis Abbott, F.R.A.S.
Leith, Restalrig Park	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Andrew Gibb.
Mauritius, Observatory	29.82	757.4	30.01	762.2	75.7	24.3	57	SE	19.5	8.7	.....	0	0	.....	.....	0	0	Squally.....	C. Meldrum.
Melbourne, Observatory	29.90	759.4	29.99	761.7	52.0	11.1	72	SE	5	2.2	.....	.....	1	.....	.....	0	0	Very fine.....	R. L. J. Ellery.
Monach L't-house, (Hebrides)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Youngclause.
North Unst, (Shetland Is.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Robert Burnet.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m.

Marine Series. Vessels.															Sea or swell. Height scale 0—9	Sea or swell. Direction from—		
S. S. Algeria. N. 49° 55', W. 61° 45'	.....	.....	30.47	773.9	62	16.7	.....	SW	.....	.....	4	.....	8	WSW	.....	0*	.....	D. clouds.. ..	Capt. W. Watson.
S. S. Batavia, N. 46° 35', W. 38° 55'	.....	.....	30.34	770.6	54	12.2	.....	W	.....	.....	5	.....	8	.....	.....	4	W	Showery.....	Capt. J. E. Mouland.
Ship Camperdown	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. A. T. Miller.
Brig Catherine	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. Adam Smith.
Barque Celeste	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. D. F. McKechnie
S. S. Hibernia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. W. R. Cato
Barque Maroon	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. A. T. Brown.
Ship Mikado	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. C. C. Prehn.
S. S. Seine	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. H. Manning.
Barque Sorata	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. Jas. J. Price.
Schooner Traveller	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. Alex Simpson
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
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.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation The barometers and thermometers used by these observers have been generally carefully compared and corrected. *Feet.

Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
San José	26.20	665.5			67.1	19.5	98	SE			2		10n			0.7	18		Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	30.00	761.9	30.04	763.1	46.2	7.9	100	SW			4		10					Rain & fog	
Farõe	30.00	762.1	30.02	762.6	51.6	10.9	98	WSW			4		9						
Godthaab, (Greenland)	29 49	749.1	29.54	750.2	19.6	— 6.9	65	NNW			2		10						
Stykkisholm, (Iceland)	29.24	742.7	29.28	743.8	33.3	0.7	96	SE			6		8						
Thorshavn, (Farõe)	29.29	743.9	29.32	744.8	42.6	5.9	72	WNW			6		5						
Vestervig	29.79	756.7	29.96	761.0	48.2	9.0	89	W			6		6					Raining	

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the cooperation of the Director of the Paris Observatory, and the respective observers.

Alençon, Normal School	29.93	760.2	30.48	774.2	50.0	10	93	SW			1		10			0	0	Covered	Collignon, Director.
Amiens, Normal School	30.29	769.3	30.40	772.2	45.7	7.6	92	SSE			2		10			0	0	Covered	Bonvarne, Director.
Avignon, Normal School	30.17	766.2	30.24	768.2	55.4	13	66	N			2		0			0	0	Very clear	Mr. Giraud, Director.
Bar-sur-Seine	29.84	758.0	30.43	773.0	42.6	5.9	91	W			1		10			0	0	Covered	C. Saillard.
Beaumette Obs'y (Angers)	30.23	767.8	30.39	772.0	46.8	8.2	86	S	0	0					NW	0.051	1.3		Albert Cheux.
Beauvais	30.11	764.7	30.40	772.2	45.5	7.5	90	SSE			1		10			0	0	Covered	Normal School.
Besançon	29.52	749.8	30.45	773 4	43.5	6.4	88	E			2		10			0	0	Covered	Normal School.
Bourg-en-Bresse	29.50	749.4	30.43	772.0	42.3	5.7	94	N			2					0	0	Foggy	Normal School.
Bourges, Normal School	29.91	759.8	30.49	774 5	43.7	6.5	94	ESE			1		10		SW	0	0	Covered	A. Wagner, Director.
Brest, Naval Observatory	30.11	764.7	30.33	770.3	55.9	13.3	95	N			2		10		N	0.276	7.00	Foggy	The Staff.
Carcassonne, Normal School	29.92	760.0	30.34	770.7	55.4	13	88	W			2		1		W	0	0	Clear	Vateau, Director.
Caen	30.29	769.3	30.36	771.2	55.8	13.2	95	E			1		10		E	0	0	Covered	Normal School.
Chartres, Normal School	29.80	756.9	30.38	771.7	48.9	9.4	84	SSW			1		8		E	0	0		Lequin, Director.
Châlons-sur-Marne, N. Sch'l	30.10	764.6	30.44	773.1	38.3	3.5	100	SE			2		10			0	0	Foggy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	29.02	737.1	30.43	773.0	40.8	4.9	90	S			1		10					Misty	Alluard, Director.
Commercy, Normal School	29.51	749.6	30.43	773.0	42.4	5.8	94	WSW			1		10			0	0	Covered	Dr. Goulet, Director.
Commune de Gréasque*	29.13	739.8	30.27	768.8	67.5	19.7	36	NW			1		2		NW	0	0	¼ covered	Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	30.19	766.8	30.41	772.5	48.2	9.0	86	N			1		10			0	0	Covered	Mouillot, Director.
Le Mans, Normal School	30.10	764.6	30.42	772.6	42.8	6	97	SSW			2		8		W	0	0	Very cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.48	748.7	30.43	772.9	42.6	5.9	91	NNW			1		10			0	0	Covered	Pin, Director.
Lorient, Naval Observatory	30.32	770.1	30.42	772.6	61.5	16.4	85	W			3		10			0.028	0.7	Covered	T. Carré, Director.
Mâcon, Normal School	29.67	753.7	30.39	771.8	45.0	7.2	88	Calm			0		10			0	0	Covered	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	29.31	744.5	30.40	772.1	42.4	5.8	83	SSW					10		NNE	0	0	Covered	Normal School.
Nismes, Normal School	30.06	763 5	30.26	768.7	57.6	14.2	67	N			4		0			0	0	Clear	Boyer, Director.
Orleans, Normal School	30.02	762.5	30.41	772.5	42.4	5.8	94	N			2		10			0	0	Covered	Bernard, Director.
Paris, Observatory	30.17	766.2	30.41	772.5	43.3	6.3	91	S			1		10k	N	S	0.006	0.16	Covered	National Observatory.
Privas	29.21	741.8	30.29	769.4	50 4	10.2	81	NW			2		10		NW	0	0	Covered	Normal School
Rochefort, Naval Obs'y	30.39	771.9	30.42	772.7	43.5	6.4	91	ENE			2		8			0	0	¾ covered	Lt. Decante, Director.
Rouen, Normal School	30.30	769.6	30.39	771.8	47.3	8.5	83	SW			2		10			0	0	Covered	F. Lucard, Director.
Tarbes, Normal School																			T. Hugues, Director.
Villefranche	29.67	753.6	30.40	772.2	44.4	6.9	94	NE			2					0	0	Misty	Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.80	756.8	29.82	757.5	75.9	24.4										2.84	72.		L'Abbé Marchési.
Marseilles, Observatory			30.21	767.3	63.7	17.6	54	WNW			1		1			0	0	Clear	The Staff.
Mont-Louis	25.11	637.7	30.42	772.7	50.9	10.5	32	N	14.9	6.66			0			0	0		Mr. Falguère.
Nice			30.18	766.5	62.1	16.7	71	SW					1		NE	0	0	Clear	Dr. A. Niepce.
Paris, Montsouris Obs'y	30.12	765.1	30.40	772.1	42.6	5.9	95	SSW			2–3		10		W	Inap.	Inap.		Marié Davy, Director.
Perpignan			30.27	768.8	63.7	17.6	42	S	1.9	0.83			1		NE	0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.	21.43	544.2			33.1	0.6		N			1		0					Clear	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.75	577.8			42.4	5.8		N			2		0			0	0	Clear	Gen'l de Nansouty.
Saint Maur, (near Paris)	30.24	768 2	30.41	772.4	43.2	6.2	92	SSW			1		10			0.035	0.9		E. Renou.
Toulouse, Observatory	29.69	754.2	30.43	772.8	43.7	6.5	100	N			1					0	0	Dense fog	The Staff.
Tours	30.22	767.6	30.42	772.6	43.5	6.4	86	E			1		8		NW	0.016	0.4		C. Marquet.
Versailles, (near Paris)			30.39	771.9	46.8	8.2	78	S			1		10			0.006	0.16	Covered	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.04	763 1	30.07	763.7	49.3	9.6	93	SE	5.1	2.3			0			0	0	Clear	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; for Montsouris, the barometer reduced to freezing but not to sea-level. At Mirecourt the cloud direction is apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet: Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,368 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg																			Prof. Dr. Hoh.
Berlin	30.12	765.0	30.29	769.4	51.4	10.8	77	S			2		1			0	0		Prof. Arndt.
Breslau	29.85	758.1	30.39	771.8	47.5	8.6	88	SSE			2		2			0	0		Royal University Obs'y.
Carlsruhe	29.95	760.7	30.39	772.0	44.2	6.8	88	NE			1		10			0	0		Albert Senz.
Cassel	29.73	755.2	30.35	770.8	46.0	7.8	84	S			2		5	SW		0	0		Dr. H. Möhl.
Crefeld	30.14	765.6	30.30	769.7	51.8	11.0	68	S			3		9			0	0		Director Lose.
Emden	30.22	767.6	30.26	768.5	47.7	8.7	95	WSW			3		10			0	0		Prof. Prestel.
Frankfort on the Main	30.07	763.7	30.45	773.4	43.2	6.2		S			1		10			0	0	Foggy	Physical Society.
Friedrichshafen	28.93	734.9	30.41	772.5	45.5	7.5	91	WNW			3		10	NW		0	0		M. Wilhelm.
Hamburg	30.14	765.5	30.21	767.3	48.0	8.9	95	WSW			4		10			0	0		Captain F. Hegemann.
Kiel	30.13	765.3	30.15	765.7	47.5	8.6	95	SW			5		10			0.012	0.31		Prof. G. Karsten.
Königsberg, (Prussia)	30.17	766.3	30.24	768.1	47.8	8.8	97	S								Blank	Blank	Covered	Prof. E. Luther.
Köslin			30.24	768.2	45.5	7.5		S			4		1			0.016	0.4		H. Müller.
Leipsic, Observatory	29.96	760.9	30.39	771.9	47.1	8.4	97	SW			1		10	WSW		0	0		Prof. Bruhns.
Memel, Naval School	30.23	767.7	30.27	768.9	44.6	7.0	94	SSW			2		10cs					Foggy	Reinbrecht von Skalweit.
Neufahrwasser	30.24	768.1	30.26	768.5	48.7	9.3	76	SSW			3		4			0	0		A. Lothes.
Posen	30.06	763.5	30.35	770.9	49.1	9.5	93	S			5		10					Covered	Dr. Magener.
Strassburg Obs., (in Alsace	29.87	758.6	30.44	773.1	43.9	6.6	85	NE			2		10			0	0		Dr. Schur.
Stuttgart	29.41	747.0	30.39	771.8	42.7	6.5	83	NW			1		10			0	0		Prof. Schoder.
Treves, (Trier)	29.75	755.6	30.28	769.0	43.9	6.6	85	NW			1		10			0.009	0.23	Dense fog	Prof. Flesch.
Weissenburg, (Bavaria)	28.84	732.4	30.39	771.8	42.3	5.7	94	Calm	0	0			10			0	0	Dense fog	Dr. Von Bebber.
Wustrow, Naval School	30.19	766.8	30.23	767.8	48.6	9.2	75	SSW			6		10					Foggy	E. F. Schütz.
German Naval Series.																			

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4, Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.95	760.8	30.35	770.8	56.3	13.5		NE			Strong							Covered	Dr. J. F. J. Schmidt.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and wind-force; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.86	758.5	29.91	759.8	80.1	26.7	64	WSW	15.0?	6.7?			0			0	0	Blue sky	
Deesa	29.48	748.8	29.96	760.8	85.2	29.6	44	Calm					0			0	0	Blue sky	
Bombay	29.87	758.7	29.91	759.7	82.0	27.8	72	NW	11.0	4.9			0			0	0	Misty	
Poona	27.80	708.3	29.88	759.0	81.6	27.6	43	ENE					1			0	0	D. clouds	
Lahore	29.20	741.6	29.95	760.7	74.8	23.8	56	NE	1.6	0.7			6			0	0	Cloudy	
Belgaum	27.39	695.7	29.94	760.4	76.0	24.4	54	Calm					1			0	0	D. clouds	
Bangalore																			
Roorkee	29.00	736.6	29.91	759.8	75.2	24.0	38	NW	1.5	0.7			0			0	0		
Agra	29.40	746.8	29.97	761.2	79.7	26.5	51	W								0	0		
Trichinopoly																			
Nagpur	28.91	734.2	29.96	761.0	77.9	25.5	45	Calm	2.0	0.9			0			0	0	Blue sky	
Madras																			
Lucknow	29.55	750.7	29.94	760.3	73.3	22.9	55	W	1.5	0.7			0			0	0	Blue sky	
Allahabad	29.61	752.0	29.92	760.0	72.7	22.6	59	Calm	1.4	0.6			0			0	0	Blue sky	
Patna	29.76	755.8	29.94	760.5	79.9	26.6	50	W	0.4	0.2			0			0	0	Blue sky	
Hazaribagh	27.91	708.8	29.96	760.8	70.3	21.3	52	W	4.4	2.0			0			0	0	Blue sky	
Cuttack	29.87	758.7	29.96	760.8	76.7	24.8	68	W	1.5	0.7			0			0	0	Blue sky	
Calcutta (Alipore)	29.93	760.1	29.95	760.6	73.6	23.1	72	Calm					0			0	0	Blue sky	
Goalpara	29.53	750.0	29.92	760.0	75.2	24.0	61	Calm	1.0	0.4			0			0	0	Blue sky	
Chittagong	29.86	758.4	29.95	760.8	69.8	21.0	77	Calm	1.0	0.4			0			0	0	Blue sky	
Sibsagar	29.58	751.3	29.93	760.1	67.2	19.6	84	ENE	0.5	0.2			5			0	0	D. clouds	
Rangoon																			
Jubbulpore	28.61	726.6	29.98	761.6	77.0	25.0	58	NE	1.9	0.8			0			0	0	Blue sky	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer, corrected for instru-m'tal error and temperature. Inches.	Barometer, corrected for instru-m'tal error and temperature. Millimeters.	Barometer, reduced to sea-level. Inches.	Barometer, reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 1—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	22.44	570.1	30.33	770.3	38.7	3.8	22	WSW	.....	.....	1	.....	0	.....	.....	0	0	.....	Ab. Dom. Mongini.
Stelvio	22.42	569.4	30.32	770.1	36.7	2.6	.....	ESE	.....	.....	1	.....	0	.....	.....	0	0	.....	Signora Ernesta Manfredi.
Udine	29.88	758.9	30.29	769.4	57.0	13.9	63	NE	3.1	1.4	.....	.....	2	.....	.....	0	0	.....	Prof. Giovanni Clodig.
Padua	30.19	766.8	30.30	769.6	57.0	13.9	58	ENE	7.4	3.3	.....	.....	1	.....	.....	0	0	.....	Prof. Dott. Lorenzoni.
Vicenza	30.10	764.6	30.30	769.6	57.2	14.0	59	E	1.3	0.6	.....	.....	1	.....	.....	0	0	.....	Conte Alm. Da Schio.
Verona	30.07	763.8	30.30	769.5	62.4	16.9	80	SE	0	0	.....	.....	0	.....	.....	0	0	.....	Dott. B. Bertoncelli.
Bergamo	28.98	736.2	30.32	770.1	55.8	13.2	71	SE	.....	.....	2	.....	0	.....	.....	0	0	.....	Prof. Trionfini Carlo.
Domodossola	29.28	743.6	30.33	770.3	54.7	12.6	72	Calm	.....	.....	0	.....	0	.....	.....	0	0	.....	Prof. Giuseppe Calza.
Milan	29.80	757.0	30.33	770.4	57.7	14.3	.....	ENE	.....	.....	1	.....	1	NNW	.....	0	0	.....	Ab. Gio. Capelli.
Pavia	29.97	761.3	30.33	770.3	56.3	13.5	73	E	.....	.....	2	.....	0	.....	.....	0	0	.....	Prof. Gio. Cantoni.
Moncalieri	29.41	747.0	30.33	770.4	55.4	13.0	81	SSE	0	0	.....	.....	5	NE	.....	0	0	.....	Prof. P. F. Denza.
Mondovi	28.39	721.2	30.34	770.5	52.7	11.5	78	NW	.....	.....	4	.....	1	.....	.....	0	0	.....	Prof. D. C. Bruno.
Porto Maurizio	30.00	762.0	30.22	767.6	65.8	18.8	45	SW	.....	.....	2	.....	0	.....	.....	0	0	.....	Prof. L. Vassallo.
Genoa	30.05	763.2	30.22	767.5	65.5	18.6	44	N	4.3	1.9	.....	.....	0	.....	.....	0	0	.....	Prof. G. M. Garibaldi.
Piacenza	30.06	763.5	30.32	770.1	56.5	13.6	65	E	6.3	2.8	.....	.....	0	.....	.....	0	0	.....	Dott. G Manzi.
Parma	30.00	762.0	30.32	770.2	56.5	13.6	75	SE	.....	.....	4	.....	1	.....	.....	0	0	.....	Prof. P. Pigorini.
Florence	29.99	761.8	30.25	768.4	60.8	16.0	51	NE	.....	.....	4	.....	0	.....	.....	0	0	.....	Cav. F Meucci.
Leghorn	30.13	765.3	30.22	767.5	63.0	17.2	48	ENE	9.8	4.4	.....	.....	0	.....	.....	0	0	.....	Prof. P. Monte.
Siena	29.00	736.7	30.22	767.5	59.5	15.3	52	ENE	.....	.....	4	.....	0	.....	.....	0	0	.....	Prof. L. Toscani.
Urbino	28.74	730.1	30.31	769.9	50.4	10.2	88	NNE	.....	.....	4	.....	10	.....	.....	0	0	.....	Prof. P. Serpieri.
Pesaro	30.26	768.7	30.32	770.0	56.3	13.5	85	N	29.3	13.1	.....	.....	5	N	.....	0	0	.....	Prof. Luigi Guidi.
Ancona	30.19	766.9	30.30	769.6	58.3	14.6	75	NW	.....	.....	6	.....	2	.....	.....	0	0	.....	Prof. F. DeBosis.
Grosseto	30.09	764.2	30.20	767.0	66.6	19.2	51	NE	.....	.....	2	.....	3	SE	.....	0	0	.....	Avv. P. Ponticelli.
Rome	29.98	761.4	30.15	765.9	68.0	20.0	38	N	.....	.....	.....	.....	0	.....	.....	0	0	.....	Prof. P. A Secchi.
Naples, O. U	29.97	761.2	30.17	766.2	66.2	19.0	46	NE	.....	.....	4	.....	8	NE	.....	0	0	.....	Prof. L. Palmieri.
Lecce	.....	.....	.....	.....	61.5	16.4	76	SSW	2.5	1.1	.....	.....	10	.....	.....	0	0	.....	Prof. C. De Giorgi.
Cosenza	.....	.....	.....	.....	55.6	13.1	68	N	0	0	.....	.....	10	.....	.....	0.642	16.3	.....	Prof. F. D. Conti.
Cagliari	29.81	757.1	30.00	761.9	66.2	19.0	68	SE	.....	.....	2	.....	9	E	.....	1.161	29.5	.....	Prof. A. Pacinotti.
Riposto, (Sicily)	29.97	761.2	30.02?	762.4?	63.0	17.2	87	E	.....	.....	6	.....	7	N	.....	0.941	23.9	.....	Prof. F. Cafiero.
Palermo	29.74	755.4	29.99	761.8	63.0	17.2	62	E	1.8	0.8	.....	.....	1	.....	.....	0.169	4.3	.....	Prof. G. Cacciatore.
Caltanissetta	28.04	712.2	29.98	761.6	56.5	13.6	72	E	.....	.....	6	.....	7	SW	.....	0	0	.....	Prof. A. Pagani.
Syracuse	29.93	760.1	30.00	762.0	62.6	17.0	80	SW	.....	.....	1	.....	8	SW	.....	0	0	.....	Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.62	752.3	30.17	766.4	63.0	17.2	49	NNE	9.8	4.4	.....	.....	5	.....	.....	0	0	.....	Prof. F. Brioschi.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,543.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Siena, 348.5 m., or 1,143.3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Tokei (Yeddo)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	The Observatory.
Tokei (Yeddo) University	29.98	761.5	30.08	763.9	48.8	9.3	77	.....	.....	.....	.....	.....	10s	.....	.....	0.08	2.0	Cloudy	Prof P. V. Veeder.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Aguascalientes	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	I. N. Marin, M. D.
Córdoba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	C. Peña, M. D.
Cuernavaca	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	L. Castillo, A. E.
Guadalajara	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. L. Perez.
Guanajuato	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. V. Fernandez.
Leon	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. M. Leal.
Mexico	23.21	589.6	30.34	770.6	50.0	10.0	78	Calm	0	0	.....	0	3ks	.....	.....	0	0	Clear	Central Observatory.
Orizaba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	N. N.
Orizaba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	I. Orozco, M. D.
Pabellon, (Aguascalts)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. V. de Leon, M. E.
Puebla	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. B. Gonzalez.
Toluca	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. C. Velazquez.
Tlacotalpam	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. F. R. Bayly.
San Luis Potosi	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	G. Barroeta, M. D.
Vera-Cruz	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. J. Rossell.
Zacatecas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. A. Bonilla, M. E.
Puebla, (Catholic Institute)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	P. Spina. [M. M. D. D.
Morelia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Tena, F. L. Páramo.

NOTE.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,290 m., or 7,512.9 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabell m, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m,, or 8,611.8 ft.; San Luis Potosi, 1,893 m. or 6,210.4 ft.; Zacatecas, 2,498 m., or 8,198.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	30.30	769.6	30.30	769.6	47.8	8.8	.....	SSW	.....	.....	4	.....	.....	.....	.....	0	0	.....	.....
Groningen	30.15	765.8	30.21	767.2	47.7	8.7	.....	SW	.....	.....	3	.....	.....	.....	.....	0.028	0.7	.....	.....
Helder	30.19	766.9	30.19	766.9	53.1	11.7	.....	W	.....	.....	4	.....	.....	.....	.....	0.035	0.9	.....	.....
Hellevoetsluis	.....	.....	30.28	769.1	47.1	8.4	97	SW	.....	.....	4	.....	.....	.....	.....	.....	.....	.....	.....
Utrecht	30.23	767.0	30.28	769.1	47.1	8.4	97	SSW	.....	.....	4	.....	10	.....	.....	0.024	0.6	Dull	H. v d Brink.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instru'm'tal error and temperature. Inches.	Barometer. Corrected for instru'm'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	29.57	751.0	29.62	752.4	44.6	7.0	79	SW	24.8	11.1	.....	.....	8	.....	.....	0.126	3.2	Graupelnd...	
Brönö	28.76	730.6	28.80	731.6	42.8	6.0	85	S	15	8	.....	.....	10	.....	.....	.....	.....	Raining.....	
Christiania	29.44	747.8	29.59	751.5	50.2	10.1	53	WSW	25	11	.....	.....	1	.....	.....	0.094	2.4	.....	
Tromsö	28.79	731.2	28.83	732.3	41.0	5.0	60	SW	9	4	.....	.....	10	.....	.....	0.071	1.8	.....	

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	30.23	767.9	30.43	772.8	61.2	16.2	83	ENE	16.8	7.5	.....	.....	8	.....	.....	0	0	.....	Dr. J. A. Sampaio
Campo Major	29.28	743.6	30.30	769.7	61.5	16.4	46	NNE	7.4	3.3	.....	.....	0	.....	.....	0	0	.....	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.07	763.8	30.08	764.0	71.8	22.1	46	E	11.9	5.3	.....	.....	1	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.94	760.4	30.30	769.5	58.5	14.7	56	NE	17.4	7.8	.....	.....	0	.....	.....	0	0	.....	The Staff.
Ponta Delgada, (Azores)	30.34	770.5	30.37*	771.3*	70.2	21.2	73	SSE	0.7	0.3	.....	.....	4	.....	.....	0.283	7.2	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m. *Probably 30.41 in., and 772.3 mm.

Naval Series. Vessels.	Sea or swell. Height scale 0–9	Sea or swell. Direction from—		
S. S. India.			.....	{ A. D. Pedroso, Com'd't. Lt. S. A. P. de Mirando.
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.93	760.3	30.37	771.5	40.6	4.8	98	SE	9	4	.....	.....	10	.....	.....	.....	.....	Foggy	Astronomical Obs.
Wilna	29.93	760.3	30.37	771.4	41.0	5.0	100	S	4	2	.....	.....	10	.....	.....	.....	.....	.....	Astronomical Obs.
Dorpat	29.91	759.7	30.16	766.1	40.3	4.6	90	SSW	11	5	.....	.....	10	.....	.....	.....	.....	.....	Prof. Dr. Weihrauch
St. Petersburg	30.04	763.0	30.08	763 4	39.7	4.3	84	SSW	18	8	.....	.....	10	.....	.....	.....	.....	.....	Central Physical Obs.
Kuopio	29.18	741.1	29.50	749.2	44.6	7.0	89	S	47	21	.....	.....	10	.....	.....	.....	.....	Raining.....	Ch. Forsten.
Kieff	29.82	757.4	30.49	774.5	30.9	— 0.6	88	S	9	4	.....	.....	9	.....	.....	.....	.....	.....	Physical Cabinet.
Nikolaiev	30.54	775.8	30.61	777.6	37.9	3.3	71	E	4	2	.....	.....	6	.....	.....	.....	.....	.....	Kurdakof.
Kertch	30.55	776.0	30.58	776.5	40.1	4.5	78	NNE	9	4	.....	.....	0	.....	.....	.....	.....	.....	Lagorio.
Moscow	29.87	758.8	30.46	773.7	28.0	— 2.2	92	S	4	2	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Lugan	30.41	772.3	30.62	777.8	29.8	— 1.2	69	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Meteorological Obs.
Archangel	29.69	754.1	29.71	754.6	39.2	4.0	90	SSW	34	15	.....	.....	10	.....	.....	.....	.....	.....	Ogorodnikof.
Tiflis	29.03	737.4	30.51	775.0	40.3	4.6	81	E	4	2	.....	.....	10	.....	.....	.....	.....	.....	Physical Observatory..
Astrakhan	30.76	781.3	30.68	779.2	31.3	— 0.4	78	NNE	2	1	.....	.....	3	.....	.....	.....	.....	.....	Sebastianof.
Kasan	30.22	767.6	30.51	774.9	26.4	— 3.1	72	SW	7	3	.....	.....	10	.....	.....	.....	.....	.....	Physical Cabinet.
Orenburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Tschernischef.
Ekaterinburg	29.37	746.0	30.39	771.8	20.7	— 6.3	90	WNW	22	10	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Nukuss	30.34	770.5	30.58	776.8	31.6	— 0.2	92	SSW	.....	.....	.....	.....	3	.....	.....	.....	.....	.....	
Kasaly	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Bobrof.
Tashkend	28.91	734.3	30.76	781.3	25.2	— 3.8	95	Calm	0	0	.....	.....	5	.....	.....	.....	.....	.....	Michelson.
Barnaul	30.09	764.3	30.69	779.6	— 4.5	—20.3	86	Calm	0	0	.....	.....	9	.....	.....	.....	.....	.....	Meteorological Obs.
Yeniseisk	30.18	766.5	30.53	775.5	7.9	—13.4	87	SW	2	1	.....	.....	10	.....	.....	.....	.....	.....	Marks.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Usolzef.
Oorga	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Mossin.
Peking, (China)	30.01	762.2	30.15	765.8	37.8	3.2	37	NW	22	10	.....	.....	2	.....	.....	.....	.....	.....	Physical Observatory.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nikolaievsk, on the Amoor	.....	.....	.....	.....	4.6	—15.2	86	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Ekaterinburg, 306.4? m., or 1,005.2? ft.; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft. *Published as given—reason for asterisk unknown.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Ac.tonio Rave, Director.
Bilbao, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Manuel de Naveran
Burgos, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Domingo Martin y Perez.
Madrid, Royal Observatory	28.06	712.6	30.30	769.6	58.6	14.8	54	NE	2.6	1.17	.....	0	0	.....	.....	0	0	Clear.....	The Staff.
Murcia, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Olayo Diaz, Director.
Santiago, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	30.01	762.3	30.08	763.9	76.1	24.5	81	E	8.1	3.6	.....	7c	1k	.....	E	Inap.	Inap.	Fair	Benito Vines, S. J.
San Fernando, Naval Obs'y.	30.13	765.2	30.22	767.7	69.6	20.9	48	E	18.0	8.1	.....	0	0	.....	.....	0	0	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W.I.	.....	.....	29.82	757.2	79.2	26.2	89	SE	7.3	3.24	.....	3cs	2k	Calm	Calm	0.256	6.50	Clear	Leonardo de Tejeda, Chief of Engineers.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the cöoperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Low'r 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.10	739.2	29.14	740.2	39.6	4.2	.....	S	.....	.....	7	.....	5	.....	.....	0.236	6.0	.....	
Umea	29.02	737.2	29.08	738.7	42.8	6.0	98	SW	.....	.....	8	.....	10	.....	.....	0.087	2.2	.....	
Hernosand	29.04	737.6	29.09	738.9	52.5	11.4	59	SW	.....	.....	7	.....	6	.....	.....	0.020	0.5	Raining	
Stockholm	29.50	749.2	29.67	753.7	47.1	8.4	81	SW	.....	.....	6	.....	10	.....	.....	0	0	.....	
Wisby	29.88	758.9	29.94	760.4	47.1	8.4	81	WSW	.....	.....	7	.....	5	.....	.....	0	0	.....	
Sub-Series.																			
Upsala	29.54	750.4	29.62	752.3	49.6	9.8	80	SW	26.4	11.8	.....	.....	10	.....	SW	0	0	....	Dr. Hildebrandsson.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the cooperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.93	734.7	30.38	771.7	43.9	6.6	85	NNE	.....	.....	1	.....	10	.....	.....	0	0	Covered	The Observatory.
Zurich	28.72	729.5	30.40	772.1	42.4	5.8	90	N	.....	.....	1	.....	10	.....	.....	0.020	0.5	Foggy	The Observatory.
.....																			
.....																			
.....																			

Note.—For Geneva the corresponding departures from the normal values are: Barometer, +8.3 mm; Thermometer, —0.1 cent.; Relative Humidity, +8 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	30.44	773.2	54.1	12.3	76	N	13	6.0	.....	.....	7	.....	NE	0	0	....	The Observatory.
Fao, (Persian Gulf)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salonica	.....	.....	30.47	773.8	60.3	15.7	.....	SE	.....	.....	1	.....	10	.....	.....	.....	.....	.....	B. Stefanidès.
Valona	.....	.....	30.26	768.5	64.2	17.9	.....	W	.....	.....	1	.....	2	.....	.....	0	0	Slightly cl'dy	A. Bertrand.
Varna	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Imperial Observatory.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.99	761.7	30.11	764.7	70.0	21.1	58	N	.....	.....	2	.....	2k	.....	NE	0	0	D. clouds	Prof. C. V. A. Van Dyck

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the cooperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	29.97	761.2	30.04	763.0	38.6	3.7	98	Calm	0	0	.....	10	.....	.....	.....	0	0	Foggy	Hon. J. Ferguson.
Brockville, Ontario	.....	.....	29.96	761.0	48	8.9	.....	SW	4	1.8	.....	.....	10s	.....	SW	0.11	2.8	Cloudy	W. R. Bigg.
*Chatham, N. B	.....	.....	30.05	763.3	41	5.0	95	Calm	0	0	.....	.....	Fog	.....	Calm	0.20	5.1	Foggy	G. A. Blair.
Charlottetown, P. E. Island	.....	.....	30.18	766.3	46	7.8	96	Calm	0	0	.....	.....	10n	.....	Calm	0.030	0.76	Cloudy	H. J. Cundall, C. E.
Cornwall, Ontario	29.70	754.4	29.89	759.2	51.1	10.6	91	SW	.....	.....	2	.....	10s	.....	.....	0.079	2.01	Cloudy	James Smith, M. A.
Dalhousie, N. B	30.02	762.5	30.05	763.3	36 9	2.7	98	SE	.....	.....	1	.....	.....	.....	.....	0.41	10.4	Raining	H. A. Johnson.
Esquimault, B. C	29.52	749.8	29.57	751.1	48.3	9.1	100	N	...	.....	.....	.....	10	.....	.....	0.55	14.0	Rainy	W. H. Bevis.
*Father Point, Quebec	.....	.....	29 95	760.7	34	1.1	98	NE	8	3.6	.....	.....	10n	.....	S	0.15	3.8	Cloudy	J. McWilliams.
Fredericton, N. B	30.04	763.0	30.10	764.5	43.2	6.2	99	S	1.0	0.4	.....	.....	Fog	.....	.....	0.17	4.3	Fog & rain	Prof. Harrison.
*Fort Garry, Manitoba	.....	.....	30.00	762.0	19	— 7.2	94	W	2	0.9	.....	Haze	Sm'e	.....	.....	0	0	Fair	James Stewart.
Goderich, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	H. J. Strang, M. A.
Granton, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
*Halifax, N. S	29.96	736.6	30.07	763.8	41	5.0	91	W	.....	.....	1	0	0	.....	.....	0.11	2.8	Clear	James Grant.
Hamilton, Ontario	30.07	763.8	30.21	767.3	52	11.1	97	SW	12	5.4	.....	.....	10n	.....	.....	0	0	Cloudy	F. Allison, M. A.
Heart's Content, N. F	29.61	752.1	29.99	761.7	47.5	8.6	86	SW	.....	.....	1	2c	.....	SW	.....	0.10	2.5	Clear	Geo. Dickson, M. A
*Kingston, Ontario	30.16	766.1	30.18	766.6	43	6.1	92	SW	.....	.....	2	.....	10	.....	.....	1.05	26.7	Overcast	E. Weedon.
Little Glace Bay, N. S	29.65	753.1	29.99	761.7	48	8.9	93	SW	3	1.3	.....	.....	10ks	.....	Calm	0.19	4.8	Threatening	S. Woods, M. A.
*Montreal, Quebec	30.16	766.1	30.20	767.1	49.4	9.7	94	SW	4	1.8	.....	6s	.....	SW	.....	0	0	Fair	C. H. Rigby.
*Parry Sound, Ontario	29.70	754.4	29.90	759.4	50	10.0	86	SW	14	6.3	.....	.....	10s	.....	S	0.30	7.6	Cloudy	C. H. McLeod, C. E.
Peterboro, Ontario	29.27	743.4	29.97	761.2	41	5.0	83	W	14	6.3	.....	0	2ks	.....	W	0.55	14.0	Fair	Rev. R. Mosley.
Port Dover, Ontario	29.23	742.4	29.98	761.5	48.3	9.1	88	W	.....	.....	1	0	6ks	.....	.....	0.16	4.1	Mild	J. F. Jeffers, B. A.
Port Hastings, N. S	29.38	746.2	30.08	764.0	46	7.8	94	SW	6	2.7	.....	5k	0	SW	.....	0.04	1.0	Fair	H. Morgan.
Port Stanley, Ontario	30.16	766.1	30.21	767 3	55.3	12.9	.....	S	3	1.3	.....	.....	.....	.....	.....	0	0	Fine	Peter Grant.
*Quebec, Quebec	29.44	747.8	30.09	764.3	44	6.7	91	W	4	1.8	.....	5k	0	W	.....	Inap.	Inap.	Clear	M. Payne.
*Rockliffe, Ontario	29.62	752.3	29.95	760.7	37	2.8	90	E	18	8.0	.....	.....	10n	.....	NE	0.30	7.6	Dense fog	Capt. Ashe, R. N
St. John, N. B	29.43	747.5	29.90	759.4	39	3.9	100	Calm	0	0	.....	.....	10s	.....	NW	0.41	10.4	Light rain	W. H. McIntyre.
*Saugeen, Ontario	29.98	761.5	30.16	765.8	47	8.3	92	S	1	0.4	.....	.....	10n	.....	.....	0.36	9.1	Overcast	G. Murdock, C. E.
Stayner, Ontario	29.30	744.2	30.01	762.2	42	5.6	91	W	5	2.2	.....	5k	0	W	.....	0.41	10.4	Fair	K. Stewart.
Stratford, Ontario	.....	.....	30.01	762.2	41	5.0	91	NW	3	1.3	.....	0	0	.....	.....	0	0	Clear	R. J. Cole.
*Sydney, C. B	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0	.....	C. J. MacGregor, M. A.
*Toronto, Ontario	30.18	766.6	30.21	767.3	48	8.9	95	S	6	2.7	.....	8c	2s	.....	.....	0	0	Hazy	T. C. Hill.
Windsor, N. S	29.65	753.1	30.04	763.0	46	7.8	87	W	4	1.8	.....	0	0	.....	.....	0.01	0.3	Clear	Magnetic Observatory.
Woodstock, Ontario	30.09	764.3	30.18	766.6	58.5	14.7	88	SW	12	5.4	.....	4ck	0	.....	.....	0	0	Clear	Prof. John E. Oram.
Sub-Series.																			J. Montgomery.
St. Johns, Newfoundland	.....	.....	.....	.....	39.0	3.9	100	S	.....	.....	.....	10k	10sn	.....	.....	0	0	Cloudy	John Delany.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.80	756.9	30.02	762.5	55	12.8	100	S	8	3.6	.....	.....	10n	.....	Calm	0.11	2.8	Light rain...	
Alpena, Michigan	29.32	744.7	29.99	761.7	37	2.8	90	W	4	1.8	.....	0	0	.....	.....	0.07	1.8	Clear.	
Atlantic City, New Jersey	30.13	765.3	30.15	765.8	55	12.8	93	SW	4	1.8	.....	2ck	5s	W	W	0	0	Cloudy.....	
Augusta, Georgia	30.08	764.0	30.26	768.6	54	12.2	97	NW	4	1.8	.....	2c	2ks;fg	NW	NW	0	0	Fair	
Baltimore, Maryland	30.09	764.3	30.14	765.5	58	14.4	87	SW	2	0.9	.....	2ck	5s	SW	SW	0.04	1.0	Fair	
Barnegat, New Jersey	30.13	765.3	30.15	765.8	56	13.3	93	SW	10	4.5	.....	5ck	2s	SW	SW	0.01	0.3	Fair	
Bismarck, Dakota	28.18	715.8	29.85	758.2	39	3.9	91	NW	14	6.3	.....	0	1s	.....	Calm	Inap.	Inap.	Clear.	
Boise City, Idaho	27.17	690.1	29.72	754.9	58	14.4	57	E	12	5.4	.....	.....	10s	.....	Calm	0.04	1.0	Cloudy.....	
Boston, Massachusetts	29.95	760.7	30.10	764.5	57.5	14.2	85	S	12	5.4	.....	5c	1s;hz	SW	S	0	0	Fair.....	
Brackettville, Texas	29.04	737.6	30.08	764.0	55	12.8	43	Calm	0	0	.....	8cs	0	Calm	.....	0	0	Fair.....	
Breckenridge, Minnesota	28.78	731.0	29.80	756.9	33	0.6	89	W	3	1.3	.....	.....	10ks	.....	Calm	0	0	Cloudy	
Brownsville, Texas	30.12	765.0	30.19	766.8	62	16.7	88	Calm	0	0	.....	.....	10s	.....	Calm	0	0	Cloudy.....	
Buffalo, New York	29.32	744.7	30.02	762.5	48.5	9.2	96	SW	14	6.3	.....	.....	10s	.....	W	0.13	3.3	Cloudy.....	
Burlington, Vermont	29.92	760.0	29.97	761.2	56	13.3	87	S	10	4.5	.....	.....	10n	.....	S	0.03	0.8	Light rain...	
Cairo, Illinois	29.83	757.7	30.23	767.8	44	6.7	84	S	7	3.1	.....	0	0	.....	.....	0	0	Clear	
Camp Grant, Arizona	25.35	643.9	30.15	765.8	43	6.1	21	N	.....	.....	1	0	0	.....	.....	0	0	Clear	
Camp Verde, Arizona	26.97	685.0	30.46	773.7	35	1.7	61	NW	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Campo, California	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Cape Hatteras, N. Carolina	30.15	765.8	30.16	766.1	63	17.2	94	SW	4	1.8	.....	.....	10n	.....	SW	0.60	15.2	Heavy rain..	
Cape Henry, Virginia	30.16	766.1	30.19	766.8	61	16.1	88	SW	11	4.9	.....	.....	10s	.....	SW	Inap.	Inap.	Threatening	
Cape Lookout, N. Carolina	30.24	768.1	30.26	768.6	62	16.7	100	NW	14	6.3	.....	.....	10n	.....	NW	0.57	14.5	Light rain...	
Cape May, New Jersey	30.12	765.0	30.14	765.5	60	15.6	82	S	9	4.0	.....	.....	10s	.....	W	0	0	Cloudy	
Charleston, South Carolina	30.18	766.6	30.25	768.3	60	15.6	94	N	3	1.3	.....	2cs	Sm'e	W	Calm	0.06	1.5	Fair	
Cheyenne, Wyoming	24.18	614.2	30.12	765.0	30	2.2	71	NW	12	5.4	.....	0	0	.....	.....	0	0	Clear.	
Chicago, Illinois	29.38	746.2	30.09	764.3	41	5.0	82	W	8	3.6	.....	.....	Fog	.....	Calm	Inap.	Inap.	Foggy	
Cincinnati, Ohio	29.52	749.8	30.17	766.3	51	10.6	79	W	3	1.3	.....	2k	7s	W	W	0.10	2.5	Cloudy.....	
Cleveland, Ohio	29.43	747.5	30.16	766.1	47	8.3	77	SW	12	5.4	.....	.....	10s	.....	SW	0.07	1.8	Cloudy.....	
Concho, Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Corsicana, Texas	29.77	756.1	30.26	768.6	45	7.2	84	Calm	0	0	.....	2cs	0	Calm	.....	0	0	Clear.....	
Davenport, Iowa	29.43	747.5	30.08	764.0	42	5.6	83	Calm	0	0	.....	Haze	4s	Calm	Calm	0	0	Fair...	
Denison, Texas	29.43	747.5	30.25	768.3	49	9.4	71	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.	
Denver, Colorado	24.93	633.2	30.15	765.8	49	9.4	26	SW	8	3.6	.....	0	0	.....	.....	0	0	Clear.	
Detroit, Michigan	29.41	747.0	30.10	764.5	42	5.6	83	SW	4	1.8	.....	5cs	0	Calm	.....	0.02	0.5	Fair	
Dodge City, Kansas	27.54	699.5	29.93	760.2	33	0.6	79	W	4	1.8	.....	0	Haze	.....	Calm	0	0	Clear	
Dubuque, Iowa	29.33	745.0	30.05	763.3	37	2.8	80	W	1	0.4	.....	5cs	0	Calm	.....	0	0	Fair	
Duluth, Minnesota	29.24	742.7	29.94	760.5	36	2.2	90	Calm	0	0	.....	.....	10s	.....	Calm	0.03	0.8	Cloudy.....	
Eagle Pass, Texas	29.43	747.5	30.18	766.6	55	12.8	68	Calm	0	0	.....	.....	10s	.....	Calm	0	0	Cloudy.....	
Eastport, Maine	30.03	762.7	30.10	764.5	52	11.1	86	S	12	5.4	.....	.....	10s	.....	SW	0	0	Cloudy.....	
Erie, Pennsylvania	29.36	745.7	30.08	764.0	50	10.0	86	W	9	4.0	.....	.....	10n	.....	W	0.23	5.8	Light rain...	
Escanaba, Michigan	29.31	744.5	29.98	761.5	35	1.7	70	SW	4	1.8	.....	0	0	.....	.....	0	0	Clear.....	
Florence, Arizona	28.53	724.6	30.13	765.3	40	4.4	56	N	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Fort Bayard, New Mexico	24.21	614.9	30.21	767.3	35	1.7	52	NW	14	6.3	.....	0	0	.....	.....	0	0	Clear	
Fort Craig, New Mexico	25.75	654.0	.....	.....	28	— 2.2	54	NW	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Fort Gibson, Indian Ter	29.64	752.8	30.20	767.1	40	4.4	82	E	3	1.3	.....	0	Sm'e	.....	.....	0	0	Clear	
Fort Griffin, Texas	28.94	735.1	30.26	768.6	43	6.1	66	N	1	0.4	.....	0	0	.....	.....	0	0	Clear.....	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	28.97	735.8	30.12	765.0	41	5.0	82	SE	.....	.....	1	0	0	.....	.....	0	0	Clear	
Galveston, Texas	30.18	766.6	30.23	767.8	59	15.0	87	NE	4	1.8	.....	2c	0	Calm	.....	0	0	Fair	
Grand Haven, Michigan	29.37	746.0	30.02	762.5	49	9.4	81	SW	11	4.9	.....	2c	0	Calm	.....	0.02	0.5	Clear.	
Indianapolis, Indiana	29.39	746.5	30.18	766.6	47	8.3	92	SW	1	0.4	.....	.....	Fog	.....	.....	Inap.	Inap.	Foggy	
Indianola, Texas	30.20	767.1	30.23	767.8	60	15.6	88	NE	10	4.5	.....	.....	10s	.....	Calm	0	0	Cloudy.....	
Jacksboro, Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Jacksonville, Florida	30.18	766.6	30.21	767.3	63	17.2	89	Calm	0	0	.....	5c	0	Calm	.....	0.02	0.5	Fair	
Keokuk, Iowa	29.44	747.8	30.07	763.8	43	6.1	83	Calm	0	0	.....	4ck	0	Calm	.....	0	0	Fair	
Key West, Florida	30.07	763.8	30.11	764.8	72.5	22.5	88	NE	10	4.5	.....	5cs	1ks	W	Calm	0.20	5.1	Fair.....	
Kittyhawk, North Carolina	30.19	766.8	30.21	767.3	59	15.0	100	W	6	2.7	.....	.....	10ks	.....	W	0.08	2.0	Cloudy.....	
Knoxville, Tennessee	29.24	742.7	30.26	768.6	53	11.7	93	Calm	0	0	.....	.....	10ks	.....	SW	0.10	2.5	Cloudy.....	
La Crosse, Wisconsin	29.23	742.4	29.98	761.5	39	3.9	73	S	6	2.7	.....	10c	0	Calm	.....	0	0	Cloudy.....	
La Mesilla, New Mexico	26.28	667.5	30.43	772.9	31	— 0.6	68	N	1	0.4	.....	0	0	.....	.....	0	0	Clear.....	
Laredo, Texas	.....	.....	.....	.....	55	12.8	81	Calm	0	0	.....	10cs	0	Calm	.....	0	0	Cloudy	
Leavenworth, Kansas	29.22	742.2	30.08	764.0	40	4.4	93	SE	2	0.9	.....	2k	0	Calm	.....	0	0	Fair.....	
Los Angeles, California	29.71	754.6	30.04	763.0	60	15.6	26	N	7	3.1	.....	0	0	.....	.....	0	0	Clear	
Louisville, Kentucky	29.63	752.6	30.20	767.1	49	9.4	92	Calm	0	0	.....	1c	Fog	N	Calm	0.07	1.8	Dense fog....	
Lynchburg, Virginia	29.49	749.0	30.17	766.3	58	14.4	82	Calm	0	0	.....	.....	10s	.....	Calm	0.05	1.3	Cloudy.....	
Maricopa Wells, Arizona	.....	.....	.....	.....	33	0.6	42	N	.....	.....	.....	0	0	.....	.....	0	0	Clear.	
Marquette, Michigan	29.22	742.2	29.93	760.2	36	2.2	70	W	3	1.3	.....	0	0	.....	.....	0	0	Clear.	
Mason, Texas	28.59	726.2	30.44	773.2	38	3.3	80	W	4	1.8	.....	2c	2s	Calm	.....	0	0	Fair.....	
Memphis, Tennessee	29.93	760.2	30.26	768.6	46	7.8	92	SW	2	0.9	.....	0	Fog	.....	Calm	0	0	Clear	
Milwaukee, Wisconsin	29.34	745.2	30.04	763.0	38	3.3	90	SW	10	4.5	.....	2cs	Sm'e	.....	Calm	Inap.	Inap.	Fair	
Mobile, Alabama	30.20	767.1	30.25	768.3	62	16.7	100	S	3	1.3	.....	.....	Fog	.....	Calm	0	0	Dense fog	
Montgomery, Alabama	30.02	762.5	30.26	768.6	58	14.4	97	N	2	0.9	.....	.....	Fog	.....	Calm	0.58	14.7	Foggy	
Morgantown, West Virginia	29.11	739.4	30.17	766.3	52	11.1	72	SW	7	3.1	.....	0	8s	.....	SW	0.15	3.8	Fair.....	
Mt. Washington, N. H.	23.78	604.0	30.14	765.5	37	2.8	100	W	54	24.1	.....	.....	10n	.....	W	1.61	40.9	Heavy rain..	
Nashville, Tennessee	29.70	754.4	30.26	768.6	42	5.6	91	W	1	0.4	.....	0	Fog	.....	Calm	0	0	Foggy	
New Haven, Connecticut	29.99	761.7	30.10	764.5	57	13.9	93	SW	6	2.7	.....	.....	10n	.....	Calm	0.08	2.0	Light rain ..	
New London, Connecticut	30.08	764.0	30.12	765.0	56	13.3	94	SW	18	8.0	.....	.....	10n	.....	SW	Inap.	Inap.	Light rain...	
New Orleans, Louisiana	30.15	765.8	30.21	767.3	61	16.1	100	N	3	1.3	.....	2c	Fog	W	Calm	Inap.	Inap.	Foggy	
Newport, Rhode Island	30.10	764.5	30.15	765.8	56	13.3	93	S	15	6.7	.....	.....	10ks	.....	SW	0	0	Threatening	
New York, New York	29.93	760.2	30.11	764.8	56	13.3	93	S	6	2.7	.....	.....	10ks	.....	S	0.11	2.8	Cloudy.....	
Norfolk, Virginia	30.13	765.3	30.19	766.8	59	15.0	100	S	7	3.1	.....	.....	10s;hz.	.....	sw;calm	0.05	1.3	Cloudy	
North Platte, Nebraska	27.18	690.4	29.84	757.9	35	1.7	85	W	16	7.2	.....	0	0	.....	.....	0	0	Clear	
Olympia, Washington Ter.	29.73	755.1	29.77	756.1	49	9.4	96	S	1	0.4	.....	.....	10n	.....	Calm	0.89	22.6	Heavy rain..	
Omaha, Nebraska	28.85	732.8	29.94	760.5	43	6.1	75	S	4	1.8	.....	2c	2s	Calm	Calm	0	0	Fair	
Oswego, New York	29.69	754.1	30.01	762.2	55	12.8	73	SW	6	2.7	.....	.....	10s	.....	W	0.03	0.8	Cloudy.....	
Pembina, Dakota	29.08	738.6	29.94	760.5	28	— 2.2	78	NW	1	0.4	.....	10ck	0	Calm	.....	0	0	Cloudy.....	
Philadelphia, Pennsylvania	30.10	764.5	30.15	765.8	58	14.4	93	SW	9	4.0	.....	.....	10s	.....	SW	0.25	6.3	Cloudy.....	
Phœnix, Arizona	.....	.....	.....	.....	41	5.0	57	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Pike's Peak, Colorado	17.89	454.4	30.10	764.5	16	— 8.9	49	N	22	9.8	.....	8k	0	N	.....	0	0	Fair	
Pioche, Nevada	24.21	614.9	29.98	761.5	38	3.3	54	S	3	1.3	.....	0	0	.....	.....	0	0	Clear.....	
Pittsburg, Pennsylvania	29.31	744.5	30.12	765.0	52	11.1	86	W	8	3.6	.....	2k	0	W	.....	0.34	8.6	Fair.....	
Port Huron, Michigan	29.39	746.5	30.06	763.5	42	5.6	83	SW	5	2.2	.....	8cs	0	W	.....	Inap.	Inap.	Clearing.....	
Portland, Maine	30.01	762.2	30.06	763.5	53	11.7	93	S	10	4.5	.....	.....	10n	.....	SW	0.01	0.3	Light rain...	
Portland, Oregon	29.66	753.4	29.76	755.9	53	11.7	100	S	2	0.9	.....	.....	10n	.....	Calm	0.54	13.7	Light rain...	
Prescott, Arizona	24.95	633.7	30.31	769.9	30	— 1.1	68	SW	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Punta Rassa, Florida	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Red Bluff, California	29.61	752.1	29.96	761.0	54	12.2	93	S	16	7.2	.....	.....	10s	.....	Calm	0.16	4.1	Cloudy.....	
Rochester, New York	29.39	746.5	30.00	762.0	52	11.1	86	W	6	2.7	.....	.....	10s	.....	W	0.03	0.8	Cloudy.....	
Roseburg, Oregon	29.25	742.9	29.80	756.9	54	12.2	90	SW	8	3.6	.....	.....	10n	.....	Calm	0.42	10.7	Light rain ...	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instru-m'tal error and tem-perature. Inches.	Barometer. Corrected for instru-m'tal error and tem-perature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Sacramento, California	29.98	761.5	30.06	763.5	53	11.7	86	SE	8	3.6	.....	.....	10ks	.....	Calm	0	0	Cloudy	
St. Louis, Missouri	29.58	751.3	30.16	766.1	44	6.7	76	SW	8	3.6	.....	0	Sm'e	.....	.....	0.01	0.3	Clear	
St. Marks, Florida	30.20	767.1	30.22	767.6	55	12.8	97	N	2	0.9	.....	0	5s	.....	Calm	0	0	Fair	
St. Paul, Minnesota	29.00	736.6	29.83	757.7	44	6.7	59	E	5	2.2	.....	.....	10s	.....	SE	0	0	Cloudy	
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salt Lake City, Utah	25.85	656.6	30.18	766.6	41	5.0	65	E	4	1.8	.....	0	0	.....	.....	0	0	Clear	
San Antonio, Texas	29.53	750.0	30.13	765.3	48	8.9	93	NE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
San Diego, California	30.02	762.5	30.09	764.3	53	11.7	79	N	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Sandusky, Ohio	29.47	748.6	30.16	766.1	46	7.8	85	SW	8	3.6	.....	4c	Fog	Calm	Calm	0.04	1.0	Fair	
Sandy Hook, New Jersey	30.09	764.3	30.11	764.8	57	13.9	93	S	16	7.2	.....	.....	10ks	.....	SW	0.06	1.5	Cloudy	
San Francisco, California	30.03	762.7	30.10	764.5	59	15.0	84	S	4	1.8	.....	.....	10s	.....	Calm	0.02	0.5	Cloudy	
Santa Fé, New Mexico	23.44	595.4	29.98	761.5	32.5	0.3	69	NE	12	5.4	.....	Haze	0	.....	.....	0	0	Clear	
Savannah, Georgia	30.14	765.5	30.24	768.1	59	15.0	94	NW	4	1.8	.....	5c	Fog	SW	.....	0	0	Fair	
Shreveport, Louisiana	30.06	763.5	30.29	769.4	47	8.3	92	Calm	0	0	.....	.....	Fog	.....	.....	0	0	Foggy	
Smithville, North Carolina	30.21	767.3	30.25	768.3	61	16.1	94	NE	4	1.8	.....	8cs	0	SW	.....	0.04	1.0	Cloudy	
Springfield, Massachusetts	29.87	758.7	30.00	762.0	55	12.8	93	S	4	1.8	.....	.....	10n	.....	S	0.08	2.0	Light rain	
Stanwix, Arizona	.....	.....	.....	.....	41	5.0	41	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Stockton, Texas	27 14	689.3	30.14	765.5	33	0.6	69	SW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Thatcher's Island, Mass	30.04	763.0	30.10	764.5	53	11.7	86	SW	12	5.4	.....	5k	5s	SW	SW	0	0	Cloudy	
Toledo, Ohio	29.44	747.8	30.12	765.0	45	7.2	84	SW	4	1.8	.....	5c	0	Calm	.....	0.10	2.5	Fair	
Tucson, Arizona	27.70	703.6	30.25	768.3	56	13.3	10	SE	.....	.....	.....	2cs	0	E	.....	0	0	Fair	
Tybee Island, Georgia	30.20	767.1	30.23	767.8	60	15.6	100	NW	4	1.8	.....	5ck	Fog	W	Calm	0	0	Fair	
Umatilla, Oregon	29.32	744.7	.....	.....	53	11.7	79	E	4	1.8	.....	.....	8s	.....	E	0.05	1.3	Cloudy	
Vicksburg, Mississippi	30.02	762.5	30.20	769.4	52	11.1	86	E	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Virginia City, Montana	24.35	618.5	29.83	757.7	33	0.6	50	SE	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Visalia, California	29.76	755.9	30.14	765.5	43	6.1	100	Calm	0	0	.....	0	Fog	.....	Calm	0	0	Clear	
Washington, D. C.	30.06	763.5	30.16	766.1	58.5	14.7	91	Calm	0	0	.....	0	Sm'e	.....	Calm	0.02	0.5	Clear	
Wickenburg, Arizona	.....	.....	.....	.....	36	2.2	21	NW	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Wilmington, N. Carolina	30.15	765.8	30.23	767.8	59	15.0	94	Calm	0	0	.....	8cs	Fog	SW	Calm	0	0	Fair	
Winnemucca, Nevada	25.66	651.8	30.02	762.5	38	3.3	80	NE	10	4.5	.....	2cs	0	W	.....	0	0	Fair	
Wood's Holl, Mass	30.11	764.8	30.16	766.1	57	13.9	87	SW	15	6.7	.....	.....	10s	.....	SW	0	0	Cloudy	
Yankton, Dakota	28.67	728.2	29.97	761.2	41	5.0	65	W	14	6.3	.....	2cs	0	W	.....	0	0	Fair	
Yuma, Arizona	29.95	760.7	30.12	765.0	47	8.3	30	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Sub-Series.																			
York Factory, B. A.	29.95	760.7	30.01	762.2	8.0	—13.3	100	W	6	2.7	.....	.....	10n	.....	.....	.....	.....	Snowing	J. Fortescue, W. Wood.
Havana, Cuba, W. I.	29.99	761.7	30.01	762.2	76	24.4	76	E	2.4	1.1	.....	8c	4ks	Calm	E	0	0	Fair	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.05	763.3	30.06	763.5	79	26.1	86	Calm	0	0	.....	5c	5n	NE	NE	0	0	.....	James Gall.
Navassa, W. I.	29.80	756.4	29.88	758.9	81.5	27.5	.....	NE	10	4.5	.....	.....	.....	.....	.....	0.03	0.8	Clear	F. M Everett.
St. Thomas, W. I.	.....	.....	.....	.....	79	26.1	91	SE	4	1.8	.....	.....	8n	.....	NE	0.2	5.	Cloudy	G. O. Gellich.
Paramaribo, D. Guiana, S. A.	.....	.....	30.00	762.0	83	28.3	79	E	.....	.....	2	0	4k	.....	.....	0	0	Clear	C. J. Hering.
Batavia, Dutch Guiana, S. A	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Dr. H. Groot.
Medellin, Colombia, S. A.	25.18	639.6	.....	.....	70.1	21.4	81	E	.....	.....	1	6ck	2s	.....	.....	0	0	Cloudy	Thomas Herran.
Honolulu, Oahu, H. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Daniel Smith.
Makawao, Maui, H. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,660 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,916.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.468 inches; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.6 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard Mare Island, Cal.	30.07	763.8	56	13.3	57	13.9	94	SSW	11	4.9	.....	.....	7ks	.....	W	0.02	0.5	.....	.....	Cloudy.....	
Navy Yard, Pensacola, Fla.	30.34	770.6	.....	.....	63	17.2	94	NE	2	0.9	.....	.....	10	.....	.....	0.05	1.3	.....	.....	Foggy.....	
Navy Yard, Portsmouth, N.H	30.10	764.5	59	15.0	33	0.6	80	SW	2	0.9	.....	.....	.....	.....	.....	0	0	.....	.....	Threatening	
Naval Hospital, Yokohama, Japan.....	29.93	760.2	54	12.2	46	7.8	92	Calm	.....	.....	0	.....	10s	.....	NE	0.09	2.3	.....	.....	Overcast.....	
Adams. Punta Arenas, Patagonia.	29.90	759.4	46	7.8	46	7.8	61	SW	.....	.....	2	.....	4	.....	SW	Light	Light	None	.....	D. clouds.....	
Alert. Yokohama, Japan.....	30.40†	772.1†	52	11 1	52	11.1	79	Calm	.....	.....	0	.....	10	.....	Calm	.....	.....	.....	.....	Raining.....	
Alliance, Constantinople, Turkey.	30.54	775.7	64	17.8	57	13.9	94	NE	.....	.....	5	.....	7	.....	NE	.....	.....	.....	.....	Overcast.....	
Ashuelot. Tientsin, China.....	30.10	764.5	44	6.7	37	2.8	48	NNW	.....	.....	4	.....	4	.....	N&W	.....	.....	.....	.....	D. clouds.....	
Canonicus, New Orleans, La.....	30.18	766.6	47	8.3	60	15.6	94	SE	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	Foggy	
Colorado, New York, N. Y.....	30.14	765.5	59	15.0	58	14.4	94	SW	12	5.4	.....	.....	9	.....	WSW	0.08	2.0	.....	.....	Drizzling.....	
Despatch, Constantinople, Turkey.	30.55	776 0	73	22.8	55	12.8	80	NE	.....	.....	3	.....	5	.....	NE	.....	.....	.....	.....	Cloudy.....	
Essex, Cape Palmas, Guinea....	29.85	758 2	80	26.7	82	27.8	??	ENE	.....	.....	0–1	.....	10	.....	.....	.....	.....	Long	SW	Overcast.....	
Franklin, Norfolk, Va.....	30.28	769.1	60	15.6	60	15.6	94	S	3.5	1.6	.....	.....	8	.....	S	0.5	13.	.....	.....	Cloudy.....	
Guard, N. 34° 12′, W. 36° 35′.....	30.66	778.7	68	20.0	67	19.4	79	NE	.....	.....	3–6	.....	6	.....	N&E	.....	.....	Rough	N&E	Showery.....	
Lackawana, San Francisco, Cal.....	30.15	765.8	.....	.....	62	16.7	77	S	.....	.....	2–3	.....	10	.....	N	.....	.....	.....	.....	D. clouds.....	
Marion, Smyrna, Turkey.....	30.29	769.4	63	17.2	63	17.2	52	NE	.....	.....	2	.....	2	.....	Calm	0	0	Smooth	NE	D. clouds.....	
Michigan, Erie, Pa.....	29.55	750.6	59	15.0	50	10.0	86	W	.....	.....	4	.....	10	.....	W	.....	.....	.....	.....	Raining.....	
Monongahela, N. 36° 17′, E. 13° 56′.....	30.10	764.5	67	19.4	67	19.4	.....	ESE	.....	.....	4–5	.....	ck	.....	.....	Moderate.	Moderate.	Long	S&E	D. clouds.....	
New Hampshire, Port Royal, S.C.....	30.38	771.6	.....	.....	61	16.1	100	NE	2	0.9	.....	.....	4	.....	SW	0	0	.....	.....	D. clouds.....	
Omaha, Callao, Peru.....	30.06	763.5	73	22.8	72	22.2	85	SE	3	1.3	.....	.....	2	.....	Calm	0	0	Smooth	.....	Clear.....	
Onward, Callao, Peru.....	30.02†	762.5†	72	22.2	71	21.7	95	SE	.....	.....	1	.....	8	.....	.....	.....	.....	Long	W	D. clouds.....	
Ossipee, Norfolk, Va.....	30.26	768.6	71	21.7	63	17.2	83	SSW	.....	.....	2	.....	9	.....	SSW	.....	.....	.....	.....	D. clouds.....	
Palos, Shanghai, China.....	30.10	764.5	60	15.6	54	12.2	93	ESE	.....	.....	1–2	.....	0	.....	.....	.....	.....	.....	.....	Clear.....	
Plymouth. Norfolk, Va.....	30.23	767.8	64	17.8	60	15.6	100	SSW	.....	.....	1	.....	1	.....	.....	.....	.....	.....	.....	Clear	
Powhatan, Hampton Roads, Va.....	.....	.....	58	14.4	59	15.0	100	S	3.6	1.6	.....	.....	9	.....	.....	0	0	.....	.....	Overcast.....	
Ranger, Shanghai, China.....	30.16	766.1	66	18.9	62	16.7	77	NNW	.....	.....	1	.....	4	.....	Calm	.....	.....	.....	.....	Pleasant.....	
Rio Bravo, Brownsville, Texas.....	30.07	763.8	.....	.....	64	17.8	94	NNW	.....	.....	1	.....	10	.....	Calm	.....	.....	.....	.....	D. clouds.....	
Santee, Annapolis, Md.....	30.22	767.6	66	18.9	59	15.0	94	SW	.....	.....	1	.....	4	.....	SW	0.25	6.3	.....	.....	Hazy.....	
Saratoga, Hampton Roads, Va.....	.....	.....	.....	.....	67	19.4	79	SW	.....	.....	1	.....	4	.....	Calm	Light	Light	.....	.....	Clear	
St. Louis, League Island, Pa	30.03	762.7	54	12.2	54	12.2	93	SW	9	4.0	.....	.....	10	.....	SW	0.3	S.	.....	.....	Overcast.....	
Swatara, Hampton Roads, Va.....	30.24	768.1	.....	.....	61	16.1	94	SSW	.....	.....	1	.....	5	.....	S&W	.....	.....	.....	.....	Foggy	
Tennessee, Yokohama, Japan.....	30.06	763.5	58	14.4	47	8.3	92	NE	2	0.9	.....	.....	10	.....	NE	0.01	0.3	Smooth	.....	D clouds....	
Trenton, Villefranche, France.....	30.26	768.6	.....	.....	68	20.0	60	W	4	1.8	.....	.....	1	.....	W	0	0	.....	.....	D. clouds.....	
Vandalia, Villefranche, France,....	30.25	768.3	70	21.1	70	21.1	48	WSW	.....	.....	2	.....	0	.....	.....	.....	.....	.....	.....	Blue sky.....	
Wabash, Boston, Mass.....	30.12	765.0	62	16.7	58	14.4	88	SSW	10	4.5	.....	.....	6	.....	SSW	0	0	.....	.....	D. clouds....	
Wyoming, Washington, D. C.....	30.37†	771.4†	.....	.....	57	13.9	.....	Var.	.....	.....	0–1	.....	4	.....	.....	.....	.....	.....	.....	D. clouds.....	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. ‡ Barometer corrected for instrumental error and reduced to sea-level. The position given for the Plymouth is that at noon, local time, instead of that at 7:35 a. m., Washington time.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.	Character.	Direction from—		
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—				
PACIFIC MAIL S. S. CO. MARINE SERIES. Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama, Panama Bay			29.66	753.4	81	27.2	87	NW			2		6		NW	Light	None	D. clouds	Capt. Howard.
S. S. City of Peking, N. 40° 06′, W. 158° 34′			29.90*	759.4*	59	15.0	100	SW			6		10		SW	Rough long.	SW	Raining	Lt. Z. L. Tanner, U.S.N
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio, N. 30° 05′, E. 171° 18′			30.21	767.3	68	20.0		WNW			6		8		WNW	Short	N	D clouds	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

NOTE.—The originals give the wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. *Aneroid.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson.
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.

S. S. Belgic																			Capt. John Metcalf.
S. S. Gaelic																			Capt. W. H. Kidley
S. S. Oceanic																			Capt. H. Parsell.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig																			Capt. K. Undütsch.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio, N. 46° 11′, W. 47° 30′			30.42	772.7	46.0	7.8	92	WSW			3		10			Smooth		Overcast	Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, nor distinguish between upper and lower clouds

UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell		Weather.	Observer
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Lo'wr	Upper.	Lower.	Character.	Direction From—		
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second	0—10.	0—10.	0—10.	From—	From—				
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, N. 47° 02′, W. 35° 44′			30.30*	769.6*	58	14.4	100	W		2		8		W		Slight	NNW	Overcast	Captain Sargent.
S. S. Ohio. Liverpool			30.26	768.6	49	9.4	89	W		3		3		W				Fair	Captain Morrison. Captain Harris.
S. S. Pennsylvania																			
RED STAR LINE MARINE SERIES.																			
Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.																			
S. S. Nederland																			Capt. Randle.
S. S. Switzerland																			Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.
ALLAN LINE MARINE SERIES.																			
Furnished by the coöperation of A. Schumacher, & Co., Agents.																			
S. S. Hibernian																			Capt. W. Richardson.
S. S. Scandinavian																			
MARINE SERIES. (Miscellaneous.)																			
Furnished by the coöperation of the Observer named.																			
Schooner Addie Fuller Kennebunk, Maine			30.10	764.5	51	10.6	100	SSW	10	4.5			10n		S			Raining	Capt. James Jorgensen.

NOTE.—The originals give the barometer as read off; the wind-force by the scale 0 to 12. *Aneroid; correction for elevation applied, instrumental error not known.

NOTE.—The originals for the schooner Addie Fuller give the amount of cloudiness by the scale 0 to 4; the barometer as read off.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer. U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON NOVEMBER 17, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:48 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:18 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:38 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:28 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours	.....	.....	30.19	766.8	58.6	14.8	74	E	.....	.....	1	.....	9	.....	.....	0.346	8.8	Covered.....	Michel.
Algiers	.....	.....	30.02	762.5	63.7	17.6	88	NW	.....	.....	1	.....	10	.....	.....	0.547	13.9	Covered	Peter.
La Calle	.....	.....	30.02	762.5	60.3	15.7	83	NW	.....	.....	2	.....	8	.....	.....	0.008	0.2	Very cloudy	Fleury.
Tunis	.....	.....	29.98	761.6	60.8	16.0	87	E	.....	.....	2	.....	9	.....	.....	0.555	14.1	Covered	Jacques.
Sfax	.....	.....	29.99	761.8	62.6	17.0	.....	S	.....	.....	2	.....	8	.....	.....	0.551	14.0	Very cloudy	Husson.
Saida	.....	.....	30.10	764.5	51.3	10.7	85	NNE	.....	.....	2	.....	7	.....	.....	0.437	11.1	Very cloudy	Millot.
Tebessa	.....	.....	30.00	761.9	.....	.....	.....	Calm	.....	.....	0	.....	9	.....	.....	.....	.....	Covered	Bourgeois.
Geriville	.....	.....	30.01	762.2	47.8	8.8	86	NW	.....	.....	3	.....	8	.....	.....	0.31	8.	Very cloudy	Lemaillot.
Laghouat	.....	.....	30.04	763.1	55.4	13.0	66	W	.....	.....	2	.....	6	.....	.....	0	0	Cloudy.....	Guyot.
Biskra	.....	.....	29.98	761.6	71.2	21.8	28	SE	.....	.....	1	.....	8	.....	.....	.....	.....	Very cloudy	Kuntz.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890 ? meters, or 2,919.9 ? feet; Tebessa, 1,088 ? m., or 3,569.4 ? ft.; Geriville, 1,360 ? m.; or 4,461.7 ? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

Agram	29.80	757.0	30.38	771.6	41.9	5.5	79	Calm	.....	.....	0	.....	10	.....	.....	0	0	.....	Prof. Ivan Stozir
Cracow, I. R. Observatory	29.60	751.7	30.38	771.7	45.0	7.2	83	W	.....	.....	2	.....	10	.....	.....	0.020	0.5	.....	Dr. Wierzbiski.
Eperies	29.45	747.9	30.35	771.0	41.9	5.5	89	Calm	.....	.....	0	.....	10	.....	.....	0.020	0.50	.....	Julius Mikolik.
Gratz	29.10	739.0	30.39	771.9	42.6	5.9	70	E	.....	.....	2	.....	10	.....	.....	0	0	.....	Andreas Rospini.
Hermannstadt	28.89	733.7	30.39	771.8	35.2	1.8	84	ESE	.....	.....	1	.....	10	.....	.....	Inap.	Inap.	.....	Prof. Reissenberger.
Kremsmünster	28.96	735.3	30.34	770.6	41.0	5.0	84	NE	.....	.....	2	.....	10	.....	.....	0.177	4.5	.....	Prof. C. Wagner.
Lemberg	29.28	743.8	30.30	769.7	43.2	6.2	91	SW	.....	.....	1	.....	10	.....	.....	0	0	.....	Dr. T. Stanecki.
Pola	30.10	764.5	30.21	767.4	57.2	14.0	42	SE	.....	.....	2	.....	0	.....	.....	0	0	.....	I.R.Hydrographic Office.
Szathmar	29.95	760.7	30.43	773.0	40.8	4.9	94	NW	.....	.....	2	.....	10	.....	.....	0	0	.....	Johann Tamas, S. J.
Szegedin	30.08	763.9	30.37	771.3	45.1	7.3	73	SE	.....	.....	2	.....	0	.....	.....	0	0	.....	Karl Stancel.
Trieste	30.14	765.5	30.24	768.1	56.1	13.4	69	E	.....	.....	2	.....	0	.....	.....	0	0	Clear....	P. Busin.
Vienna	29.65	753.2	30.38	771.7	38.8	3.8	100	NE	.....	.....	1	.....	.....	.....	.....	0.035	0.9	.....	I. R. Central Met. Obs'y.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time, and at Trieste at 7 a. m. of the following day. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 388.6 m., or 1,275.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

Arlon	28.82	732.1	30.37	771.5	44.6	7.0	92	NE	.....	.....	1	.....	10	.....	.....	0.024	0.6	Light rain...	Prof. M. Passau.
Brussels	30.20	767.0	30.41	772.3	44.8	7.1	92	SW	.....	.....	2	.....	10	.....	E	0	0	Foggy	Royal Observatory.
Furnes	30.39	771.9	30.41	772.5	50.0	10.0	82	NNE	.....	.....	2	.....	4	.....	.....	0	0	.....	M. E. de Cae.
Maeseyck	30.28	769.1	30.41	772.4	45.9	7.7	88	S	.....	.....	2	.....	10	.....	.....	0	0	Foggy	M. Pierrot.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	29.98	761.5	30.08	764.0	47.4	8.6		SSW	17	7.6			2			0.005	0.13	Blue sky	W. Boswell.
Ardrossan	30.13	765.3	30.15	765.8	50	10.0		SSW			5		5					D. clouds	William McNeil.
Armagh, Observatory			30.19	766.8	48.0	8.9		S	15	6.7			0					Blue sky	S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)			30.30	769.6	49.3	9.6		SSW	10	4.5			8					Overcast	John Hartnup.
Birr Castle, (Parsonstown)			30.22	767.6	50.6	10.3		SSW			3		1					Blue sky	J. L. E. Dreyer.
Bradford, Yorkshire	29.90	759.4	30.30	769.6	44.5	6.9		S			1		4			0.03	0.8	D. clouds	J. McLandsborough.
Bridgetown, (Barbados)	29.88	758.9	29.91	759.7	80.0	26.7		E			1		3					Overcast	Pvt. G. W. Roberts, A.
Cambridge, Observatory			30.37	771.4	49.0	9.4		SSW			1		5					D. clouds	H. Todd. [H. C.
Cardington			30.38	771.6	45.0	7.2		W			1		1					Blue sky	John McLaren.
Chatham, School M. E	30.26	768.6	30.39	771.9	47.2	8.4		Calm			0		6					Hazy	Lt. W. G. Morris, R. E.
Dartmoor	28.64	727.4	30.13	765.3	50.4	10.2		NW			2		3					Fine	Alexander Watt.
Davos Platz (Switzerland)																			Francis Redford, M. A.
Donaghadee	30.16	766.1	30.19	766.8	48	8.9		SSW			2		10					Overcast	J. Mac Gowan.
Dover	30.36	771.1	30.38	771.6	51	10.6		E			1		2					⅛ clouded	J. Costello.
Eccles, (near Manchester)			30.30	769.6	49.7	9.8		SW	0.8	0.4			6					D. clouds	Thomas Mackereth.
Falmouth, Observatory	30.13	765.3	30.36	771.1	51.1	10.6		NW			0		3					Hazy	The Staff.
Fort Napier, (Natal)	27.60	701.0	29.84	757.9	60.0	15.6		S			4		10					Overcast	Pvt. G. Salmon, A. H. C.
Free Town, (Sierra Leone)			29.95	760.7	88.0	31.1		Calm			0		3					D. clouds	
Galway, Queen's College																			Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	30.05	763.3	30.11	764.8	65.8	18.8		E			3		1					Blue sky	Corpl. C. Aitken, A. H. C.
Glasgow, Observatory	29.93	760.2	30.13	765.3	48.1	8.9		SSW			3		9					Gloomy	D. G. Maclean.
Great Yarmouth	30.37	771.4	30.38	771.6	44	6.7		W			1		3					Foggy	G. T. Watson.
Greenwich, Royal Obs'y	30.20	767.1	30.37	771.4	47.7	8.7		N			1		10					Misty	The Staff, for G. B. Airy.
Guernsey	30.11	764.8	30.34	770.6	52	11.1		ENE			2		3					D. clouds	Dr. S. E. Hoskins, F. R. S.
Helston			30.38	771.6	52	11.1		E			2		2			0	0	D. clouds	M. P. Moyle.
Holyhead	30.19	766.8	30.24	768.1	49	9.4		SW			3		3					D. clouds	John Tilston.
Jersey	30.08	764.0	30.38	771.6	50.0	10.0		ESE			3		7					Hazy	J. Fisher.
Kew, Observatory			30.38	771.6	45.9	7.7		WNW	1	0.4			8					Hazy	The Staff.
Kingstown	30.22	767.6	30.25	768.3	50	10.0		SSW			3		3					Blue sky	George Mitchell.
Leicester, Museum			30.33	770.4	49.1	9.5		SW			1		1					Blue sky	Wm. J. Harrison, F. G. S.
Malta, (Mediterranean)	29.85	758.2	29.92	760.0	67.2	19.6		E			5		8					Overcast	Sgt. C. Arbeiter, A. H. C.
Nairn	29.90	759.4	29.99	761.7	47	8.3		SW			1		5					½ clouded	W. D. Penny.
Nassau, (Bahamas)			30.00	762.0	78.0	25.6		NE			3		2					Blue sky	C. S. Duncombe.
Nottingham, Observatory	30.14	765.5	30.34	770.6	44.0	6.7		SW			1		5c;k		SW	0	0	D. clouds	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.80	756.9	30.33	770.4	49.1	9.5		SSW			2		10					Misty	Rev. Stephen Whitty
Oxford, Radcliffe Obs'y			30.36	771.1	48	8.9		W			1		0					Blue sky	F. Lucas
Plymouth	30.28	769.1	30.36	771.1	50.0	10.0		NNE			1		0					Blue sky	John Merrifield.
Roche's Point	30.24	768.1	30.29	769.4	50	10.0		WSW			3		5			Blank	Blank	Fine	W. Kennedy.
Saint Ann's Head	30.16	766.1	30.32	770.1	53	11.7		SSW			1		2					Blue sky	John C. Walker.
Sandwick Manse, (Orkneys.)			29.94	760.5	46.2	7.9		SSW	20	8.9			8					D. clouds	Rev. C. Clouston, LL. D
Scutari, Cemetery, (Turkey)			30.22	767.6	66.6	18.7		NE			2		1					D. clouds	Sergt. W. H. Lyne.
Sheffield	30.09	764.3	30.34	770.6	49.0	9.4		SW			1		3			0	0	Blue sky	W. F. Cooper.
Silloth Rectory	30.18	766.6	30.21	767.3	52.1	11.2	74	W			2		2			0.110	2.79	D. clouds	Rev. F. Redford, M. A.
Stonyhurst, Observatory					47.8	8.8		SW			1		4					Hazy	Rev. S. J. Perry.
Stornoway, Lews C. (Hebr.)			29.86	758.4	48	8.9		SW			5		3					D. clouds	John Smith.
Stratfield Turgiss	30.16	766.1	30.38	771.6	49.5	9.7		SW			1		0					Blue sky	Rev. C. H. Griffith, F. M. S.
Thurso			29.94	760.5	48	8.9		SSW			2		6					D. clouds	John Trotter.
Truro, Royal Institution			30.36	771.1	55	12.8		W			3		6					Gloomy	W. Newcombe.
Valencia, Observatory			30.23	767.8	50.8	10.4		SSW	29	13.0			6					D. clouds	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)																			Henry Mercer.
Cape Good Hope, Obs'y	30.17	766.3	30.21	767.3	72.2	22.3	42	S	12	5.4		0	2						The Staff, for E. J. Stone.
Hobart Town, (Tasmania)			29.78	756.4	52.0	11.1	74	NW			2		5k			0.08	2.0		Francis Abbott, F. R. A. S.
Leith, Restalrig Park																			Andrew Gibb.
Mauritius, Observatory	29.83	757.7	30.02	762.4	76.4	24.7	81	ESE	17.5	7.8		0	8		ESE	0	0	Squally	C. Meldrum.
Melbourne, Observatory	30.05	763.3	30.14	765.5	50.0	10.0	77	WSW	4	1.8			7		E	0.03	0.8	Fine	R. L. J. Ellery.
Monach L't-house, (Hebrides)																			J. Youngclause.
North Unst, (Shetland Is.)																			Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m.

Marine Series. Vessels.	Wind. Direction. From—	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea or swell. Height scale 0—9	Sea or swell. Direction from—	Weather.	Observer.
S. S. Algeria, N. 42° 0′, W. 54° 35′	SSW	3		8		SW	0*		D. clouds	Capt. W. Watson.
S. S. Batavia, N. 44° 50′, W. 43° 45′	W	4		8			4	WNW	D. clouds	Capt. J. E. Mouland.
Ship Camperdown										Capt. A. T. Miller.
Brig Catherine										Capt. Adam Smith.
Barque Celeste										Capt. D. F. McKechnie.
S. S. Hibernia										Capt. W. R. Cato.
Barque Maroon										Capt. A. T. Brown.
Ship Mikado										Capt. C. C. Prehn.
S. S. Seine										Capt. H. Manning.
Barque Sorata										Capt. Jas. J. Price.
Schooner Traveller										Capt. Alex Simpson.

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation The barometers and thermo meters used by these observers have been generally carefully compared and corrected. *Feet.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	OBSERVER
San José	26.17	664.7			69.4	20.8	92	NE			1	3cs	1k	NE	NE	0.2	5.		Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	30.22	767.5	30.26	768.7	46.9	8.3	82	W			2		0						
Fanöe	30.26	768.5	30.28	769.0	46.9	8.3	81	W			4		7						
Godthaab, (Greenland)	29.88	759.0	29.93	760.1	15.4	—9.2	84	ENE			2		1						
Stykkisholm, (Iceland)	29.35	745.6	29.40	746.7	32.2	0.1	96	SE			4		5						
Thorshavn, (Faröe)	29.60	751.9	29.64	752.8	46.8	8.2	81	SSW			5		7						
Vestervig	30.01	762.2	30.18	766.5	46.0	7.8	86	W			4		4						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

Alençon, Normal School	29.88	759.0	30.43	773.0	50.0	10	86	NE			1		10			0	0	Covered	Collignon, Director.
Amiens, Normal School	30.36	771.2	30.48	774.1	42.8	6.0	91	ESE			2		10			0.094	2.4	Covered	Bonvarne, Director.
Avignon, Normal School	30.13	765.3	30.21	767.3	52.3	11.3	63	N			3		0			0	0	Very clear.	Mr. Giraud, Director.
Bar-sur-Seine	29.77	756.1	30.35	770 9	45.9	7.7	90	N			1		10			0	0	Covered	C. Saillard.
Beaumette Obs'y (Angers)	30.15	765.9	30.32	770.0	49.8	9.9	95	E	4.0	1.8					E	0.020	0.5		Albert Cheux.
Beauvais	30.11	764.7	30.40	772.2	43.5	6.4	92	NNE			1		10			0	0	Covered	Normal School.
Besançon	29.43	747.5	30.35	771.0	45.5	7.5	81	ENE			3		8		E	0	0	Very cloudy	Normal School.
Bourg-en-Bresse	29.42	747.2	30.35	770.8	41.9	5.5	85	NNW			2		10n		N	0	0	Covered	Normal School.
Bourges, Normal School	29.79	756.6	30.35	771.0	45.1	7.3	97	ESE			2		5		W	0	0	Cloudy	A. Wagner, Director.
Brest, Naval Observatory	30.04	763.0	30.26	768.3	55.2	12.9	81	E			1	4c		Calm		0.089	2.25		The Staff.
Carcassonne, Normal School	29.84	757.8	30.26	768.7	46.9	8.3	94	W			2		2		W	0	0	Slightly cl'dy	Vateau, Director.
Caen	30.31	769.9	30.39	771.8	49.6	9.8	89	SW			1		8		W	0.024	0.6	Very cloudy	Normal School.
Chartres, Normal School	29.79	756.6	30.37	771.3	49.6	9.8	79	NE			2		10			0.134	3.4	Covered	Lequin, Director.
Châlons-sur-Marne, N. Sch'l	30.10	764.5	30.43	772.8	48.2	9.0	89	NE			2		8cn		E	0	0	Very cloudy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.93	734.8	30.34	770.6	41.9	5.5	73	N			1		5			0	0	Foggy	Alluard, Director.
Commercy, Normal School	29.45	747.9	30.36	771.2	46.0	7.8	94	ENE			2		8		NE	0	0	Very cloudy	Dr. Goulet, Director.
Commune de Gréasque*	29.08	738.6	30.22	767.6	60.3	15.7	56	NW			2		2		NW	0	0	¼ covered	... Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	30.07	763.8	30.29	769 4	50.0	10.0	92	SW			2		10			0.059	1.5	Covered	Mouillot, Director.
Le Mans, Normal School	30.04	762.9	30.35	770.9	48.7	9.3	89	NE			2		8		NE	0.075	1.9	Very cloudy	Poirrier, Director.
Lons-Le-Saulnier, N.School	29.38	746.2	30.32	770.2	41.2	5.1	97	SE			1		10			0	0	Covered	Pin, Director.
Lorient, Naval Observatory	30.24	768.1	30.34	770.7	53.6	12.0	76	E			1		10			0	0	Covered	T. Carré, Director.
Mâcon, Normal School	29.59	751.6	30.30	769.7	42.1	5.6	88	Calm			0		10			0	0	Covered	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	29.21	741.9	30.29	769.4	44.1	6.7	85	NNW					10		SSE	0	0	Covered	Normal School.
Nismes, Normal School	29.97	761.1	30.17	766.4	53.6	12	57	N			4		0			0	0	Clear	Boyer, Director.
Orleans, Normal School	29.95	760.7	30.34	770.6	46.4	8	94	NE			2		10			0	0	Covered	Bernard, Director.
Paris, Observatory	30.12	765.0	30.37	771.3	46.6	8.1	96	NE			1		10			0.033	0.84	Foggy	National Observatory.
Privas	29.21	741.8	30.30	769.5	50.0	10	70	N			2		10		N	0	0	Covered	Normal School
Rochefort, Naval Obs'y	30.27	768.8	30.30	769.6	51.8	11.0	97	NE			4		10		NE	0	0	Misty	Lt. Decante, Director.
Rouen, Normal School	30.30	769.7	30.39	771.9	47.7	8.7	89	SW			1		10			0	0	Covered	F. Lucard, Director.
Tarbes, Normal School																			T. Hugues, Director.
Villefranche	29.59	750.9	30.30	769.7	42.6	5.9	93	NNW			1					0	0	Misty	Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.78	756.4	29.81	757.1	80.6	27										0.79	20.		L'Abbé Marchési.
Marseilles, Observatory			30.17	766.2	64.4	18.0	51	NW			1		0			0	0	Clear	The Staff.
Mont-Louis	24.99	634.8	30.31	769.8	50.2	10.1	19	NE	7.4	3.33			0			0	0		Mr. Falguère.
Nice			30.15	765.9	60.4	15.8	69	SE					1		NE	0	0	Clear	Dr. A. Niepce.
Paris, Montsouris Obs'y	30.07	763.8	30.35	770.8	46.0	7.8	100	NE			2		10			0.031	0.8		Marié Davy, Director.
Perpignan			30.22	767.5	55.4	13.0	59	SE	3.7	1.67			0			0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.	21.36	542.6			36.5	2.5		NE			1		0					Clear	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.61	574.3			53.6	12.0		Calm			0		0			0	0	Clear	Gen'l de Nansouty.
Saint Maur, (near Paris)	30.19	766.8	30.35	771.0	48.0	8.9	90	NNE			1		10		NE	0.620	0.5		E. Renou.
Toulouse, Observatory	29.56	750.9	30.29	769.4	37.8	3.2	89	NNW			1		9			0	0		The Staff.
Tours	30.12	765.1	30.32	770.1	48.9	9.4	84	E			1		10			0	0		C. Marquet.
Versailles, (near Paris)			30.35	771.0	46.0	7.8	100	ESE			1		10			0	0	Foggy	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.17	766.2	30.19	766.8	52.5	11.4	99	NE	11.9	5.3			10n			0.041	1.05	Drizzling	Marc Dechevrens, S. J.
																0.287	7.3	Raining	

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; for Montsouris, the barometer reduced to freezing but not to sea-level. At Mirecourt the cloud direction is apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 186 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	30.24	768.1	30.41	772.4	46.8	8.2	80	W	.....	.....	1	.....	7	.....	.....	0	0	.....	Prof. Dr. Hoh.
Berlin	29.86	758.4	30.40	772.1	44.6	7.0	100	NNW	.....	.....	3	.....	10	.....	.....	0.118	0.45	Raining.....	Prof. Arndt.
Breslau	29.89	759.2	30.32	770.2	46.0	7.8	80	NE	.....	.....	1	.....	10	.....	.....	0	0	.....	Royal University Obs'y
Carlsruhe	29.82	757.5	30.44	773.1	41.4	5.2	98	N	.....	.....	1	.....	Fog	.....	.....	0	0	.....	Albert Senz.
Cassel	30.23	767.9	30.40	772.1	43.7	6.5	92	SW	.....	.....	3	.....	10	.....	.....	0.08	2.	Foggy.....	Dr. H. Möhl.
Crefeld	30.39	771.9	30.43	772.8	43.3	6.3	93	SW	.....	.....	1	.....	10	.....	.....	0.036	0.9	.....	Director Lose.
Emden	30.07	763.6	30.44	773.2	47.8	8.8	.....	NNE	.....	.....	2	.....	10	.....	.....	0	0	.....	Prof. Prestel.
Frankfort on the Main	28.86	733.1	30.35	770.9	41.7	5.4	85	NE	.....	.....	6	.....	10	NNE	.....	0	0	.....	Physical Society.
Friedrichshafen	30.32	770.2	30.39	772.0	45.9	7.7	90	WSW	.....	.....	1	.....	6k	.....	.....	0.055	1.4	Fine	M. Wilhelm.
Hamburg	30.32	770.2	30.34	770.6	48.4	9.1	75	WSW	.....	.....	2	.....	10	.....	.....	0.064	1.62	.....	Captain F. Hegemann.
Kiel	30.18	766.6	30.25	768.3	46.8	8.2	76	W	.....	.....	.....	.....	.....	.....	.....	.....	.....	Fair	Prof. G. Karsten.
Königsberg, (Prussia)	.....	.....	30.31	769.8	46.6	8.1	.....	W	.....	.....	4	.....	3	.....	.....	0	0	.....	Prof. E. Luther.
Köslin	30.03	762.7	30.46	773.7	46.0	7.8	75	N	.....	.....	1	.....	7	N	.....	0.035	0.9	....	H. Müller.
Leipsic, Observatory	30.15	765.8	30.20	767.0	46.0	7.8	83	WNW	.....	.....	6	.....	1ks	.....	.....	.....	.....	....	Prof. Bruhns.
Memel, Naval School	30.29	769.4	30.31	769.8	47.5	8.6	70	W	.....	.....	4	.....	4	.....	.....	0	0	.....	Reinbrecht von Skalweit.
Neufahrwasser	30.11	764.8	30.41	772.4	45.3	7.4	80	NW	.....	.....	2	.....	3	.....	.....	.....	.....	Fair	A. Lothes.
Posen	29.79	756.7	30.36	771.2	46.2	7.9	79	NE	.....	.....	1	.....	10	.....	.....	0	0	....	Dr. Magener.
Strassburg Obs., (in Alsace	29.36	745.7	30.33	770.3	44.6	7.0	81	NE	.....	.....	1	.....	10	....	.....	6	0	.....	Dr. Schur.
Stuttgart	29.71	754.6	30.24	768.0	47.3	8.5	88	NE	.....	.....	2	.....	10	.....	.....	0	0	Dense fog....	Prof. Schoder.
Treves, (Trier)	28.81	731.8	30.36	771.2	42.1	5.6	93	NE	2	1	.....	.....	10	....	.....	0	0	Light fog....	Prof. Flesch.
Weissenburg, (Bavaria)	30.37	771.4	30.41	772.4	46.0	7.8	91	SW	.....	.....	2	.....	10	.....	.....	.....	.....	Covered	Dr. Von Bebber.
Wustrow, Naval School																			E. F. Schütz.
German Naval Series.																			

NOTE.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet: Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4, Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.85	758.1	30.24	768.1	54.5	12.5	.....	NE	.....	.....	.....	.....	.....	.....	.....	.....	.....	Covered.....	Dr. J. F. J. Schmidt.

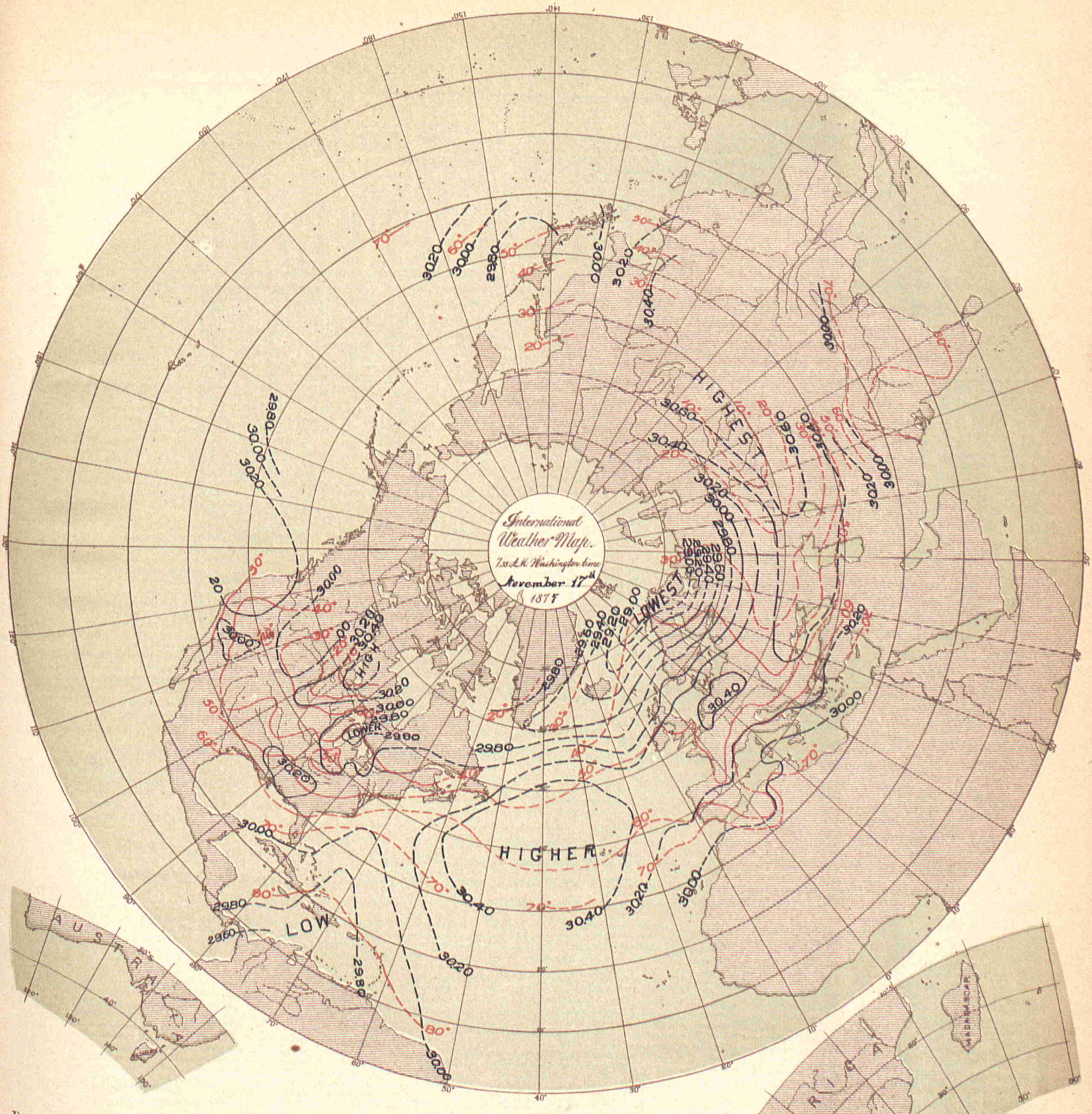
NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and wind-force; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.89	759.1	29.94	760.4	79.8	26.6	68	SW	17.07	7.67	.....	.....	0	.....	.....	0	0	Blue sky.....	
Deesa	29.50	749.3	29.98	761.4	85.2	29.6	45	Calm	.....	.....	.....	.....	0	.....	.....	0	0	Blue sky.....	
Bombay	29.88	759.0	29.92	759.9	82.9	28.3	71	NW	17.0	7.6	.....	.....	2	.....	WNW	0	0	D. clouds.....	
Poona	27.91	708.8	29.91	759.6	81.0	27.2	49	E	.....	.....	.....	.....	7	.....	.....	0	0	D. clouds....	
Lahore	29.17	740.9	29.92	760.0	75.9	24.4	56	Calm	2.1	0.9	.....	.....	7	.....	.....	0	0	Cloudy.....	
Belgaum	27.41	696.1	29.95	760.8	75.8	24.3	55	E	3.0	1.3	.....	.....	4	W	.....	0	0	D. clouds.....	
Bangalore																			
Roorkee	29.04	737.6	29.95	760.8	74.8	23.8	48	Calm	1.2	0.5	.....	.....	0	.....	.....	0	0	....	
Agra	29.38	746.3	29.95	760.7	80.1	26.7	45	W	.....	.....	.....	.....	.....	.....	.....	0	0	....	
Trichinopoly																			
Nagpur	28.94	734.9	29.96	761.7	77.6	25.3	47	Calm	2.6	1.2	.....	.....	0	.....	.....	0	0	Blue sky.....	
Madras																			
Lucknow	29.57	751.1	29.95	760.7	78.3	25.7	48	NW	1.3	0.6	.....	.....	0	.....	.....	0	0	Blue sky.....	
Allahabad	29.64	752.9	29.96	761.0	74.7	23.7	60	Calm	0.7	0.3	.....	.....	0	.....	.....	0	0	Blue sky.....	
Patna	29.77	756.1	29.95	760.8	79.1	26.2	41	W	0.9	0.4	.....	.....	0	.....	.....	0	0	Blue sky.....	
Hazaribagh	27.95	709.8	30.00	762.1	68.8	20.4	50	W	4.7	2.1	.....	.....	0	.....	.....	0	0	Blue sky.....	
Cuttack	29.89	759.3	29.98	761.4	77.5	25.3	66	Calm	0.7	0.3	.....	.....	0	.....	.....	0	0	Blue sky.....	
Calcutta (Alipore)	29.96	760.9	29.98	761.4	73.8	23.2	76	NNW	1.0	0.4	.....	.....	0	.....	.....	0	0	Blue sky.....	
Goalpara	29.56	750.9	29.96	761.0	76.1	24.5	60	Calm	0.3	0.1	.....	.....	0	.....	.....	0	0	Blue sky.....	
Chittagong																0	0		
Sibsagar	29.64	752.9	29.99	761.7	67.0	19.4	87	ENE	0.5	0.2	.....	.....	0	.....	.....	0	0	Blue sky.....	
Rangoon																			
Jubbulpore	28.61	726.8	30.00	761.9	76.0	24.4	61	NE	1.7	0.8	.....	.....	0	.....	.....	0	0	Blue sky.....	

NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 1—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	22.37	568.2	30.25	768.4	37.4	3.0	33	E			1		0			0	0		Ab. Dom. Morgini.
Stelvio	22.35	567.6	30.25	768.4	33.8	1.0		SSW			1		0			0	0		Signora Ernesta Manfredi.
Udine	29.80	756.8	30.21	767.3	55.8	13.2	42	E	3.1	1.4			0			0	0		Prof. Giovanni Clodig.
Padua	30.11	764.8	30.22	767.6	53.1	11.7	57	N	3.1	1.4			0			0	0		Prof. Dott. Lorenzoni.
Vicenza	30.02	762.6	30.22	767.6	53.6	12.0	62	N	0	0			0			0	0		Conte Alm. Da Schio.
Verona	30.00	761.9	30.22	767.6	62.4	16.9	76	SW	0	0			0			0	0		Dott. B. Bertoncelli.
Bergamo	28.93	734.8	30.26	768.7	53.6	12.0	74	S			2		2			0	0		Prof. Trionfini Carlo.
Domodossola	29.24	742.7	30.29?	769.4?	51.4	10.8	76	Calm			0		0			0	0		Prof. Giuseppe Calza.
Milan	29.72	754.9	30.25	768.3	54.0	12.2		WNW			1		7	ENE		0	0		Ab. Gio. Capelli.
Pavia	29.90	759.4	30.25	768.4	48.0	8.9	97	S			1		10			0	0		Prof. Gio. Cantoni.
Moncalleri	29.33	745.0	30.25	768.4	51.8	11.0	85	ESE	0.7	0.3			4			0	0		Prof. P. F. Denza.
Mondovi	28.80	718.9	30.24	768.2	48.7	9.3	84	N			2		0			0	0		Prof. D. C. Bruno.
Porto Maurizio	29.94	760.5	30.18	766.6	61.3	16.3	67	SW			2		0			0	0		Prof. L. Vassallo.
Genoa	29.98	761.5	30.15	765.8	59.2	15.1	51	N	10.5	4.7			0			0	0		Prof. G. M. Garibaldi.
Piacenza	29.99	761.8	30.25	768.4	48.0	8.9	90	NW	1.8	0.8			2			0	0		Dott. G Manzi.
Parma	29.92	759.9	30.24	768.1	53.6	12.0	76	NNE			2		1			0	0		Prof. P. Pigorini.
Florence	29.91	759.8	30.17	766.4	59.0	15.0	62	NE			2		0			0	0		Cav. F Meucci.
Leghorn	30.05	763.2	30.13	765.4	60.6	15.9	53	E	11.2	5.0			0			0	0		Prof. P. Monte.
Siena	28.93	734.9	30.15	765.7	56.8	13.8	61	E	4.9	2.2			0			0	0		Prof. L. Toscani.
Urbino	28.67	728.2	30.24	768.0	47.7	8.7	96	NNE			2		10			0	0		Prof. P. Serpieri.
Pesaro	30.20	767.0	30.25	768.3	52.9	11.6	82	N	32.2	14.4			10			0	0		Prof. Luigi Guidi.
Ancona	30.12	765.0	30.23	767.7	55.8	13.2	74	NW			4		10			0	0		Prof. F. DeBosis.
Grosseto	30.04	763.1	30.15	765.9	64.0	17.8	52	NE			2		3	SE		0	0		Avv. P. Ponticelli.
Rome	29.95	760.6	30.12	765.1	65.1	18.4	52	N	4.3	1.9			0			0	0		Prof. P. A. Secchi.
Naples, O. U.	29.84	757.9	30.04	763.0	66.9	19.4	48	ENE			6		2	SSE		0	0		Prof. L. Palmieri.
Lecce					63.1	17.3	61	WSW	4.3	1.9			9			0	0		Prof. C. De Giorgi.
Cosenza					55.9	13.3	71	NW	3.8	1.7			10			0.008	0.2		Prof. F. D. Conti.
Cagliari	29.79	756.6	29.98	761.4	66.7	19.3	69	SE			2		4	E		0.224	5.7		Prof. A. Pacinotti.
Riposto, (Sicily)	29.97	761.1	30.01?	762.3?	61.9	16.6	93	E			4		10	N		0.827	21.0		Prof. F. Caflero.
Palermo	29.71	754.6	29.96	761.0	62.2	16.8	69	Calm	0	0			10			0	0		Prof. G. Cacciatore.
Caltanissetta	28.00	711.3	29.95	760.7	55.9	13.3	90	E			6		10			0.043	1.1		Prof. A. Pagani.
Syracuse	29.89	759.3	29.97	761.2	66.2	19.0	90	ESE			4		10	SE		0.346	8.8		Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.58	751 3	30.13	765.4	63.9	17.7	56	ENE	6.9	2.8			2			0	0		Prof. F. Brioschi.

Note.—The originals give the wind-force on the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,542.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Siena, 348.5 m., or 1,143.3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Tokei (Yeddo)																			
Tokei (Yeddo) University	29.74	755.3	29.84	757.8	53.5	11.9	97									0	0	Clear	The Observatory. Prof P. V. Veeder.

MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Aguascallentes																			I. N. Marin, M. D.
Córdoba																			C. Peña, M. D.
Cuernavaca																			L. Castillo, A. E.
Guadalajara																			Prof. L. Perez.
Guanajuato																			Prof. V. Fernandez.
Leon																			Prof. M. Leal.
Mexico	28.16	388.2	30.27	768 9	59.0	10.0	80	Calm	0	0			10k			0	0	Covered	Central Observatory.
Orizaba																			N. N.
Orizaba																			I. Orozco, M. D.
Pabellon, (Aguascalts)																			M. V. de Leon, M. E.
Puebla																			Prof. B. Gonzalez.
Toluca																			Prof. C. Velazquez.
Tlacotalpam																			Prof. F. R. Bayly.
San Luis Potosi																			G. Barroeta, M. D.
Vera-Cruz																			Prof. J. Rossell.
Zacatecas																			J. A. Bonilla, M. E.
Puebla, (Catholic Institute)																			P. Spina. [M. M. D. D.
Morelia																			M. Tena, F. L. Páramo.

Note.—The elevation of Aguascallentes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,293 m., or 7,522.9 ft.; Orizaba, 1,323 m., or 4,012.4 ft.; Pabell m, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m,, or 8,611.8 ft.; San Luis Potosí, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

Furnished by the cooperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing																			
Groningen	30.42	772.6	30.42	772.6	48.2	9.0		S			1					0.008	0.2		
Helder	30.39	770.4	30.39	771.8	45.7	7.6		SW			1					0.008	0.2		
Hellevoetsluis	30.37	771.5	30.37	771.5	50.9	10.5		WSW			1					0	0		
Utrecht			30.40	772.1	53.2	11.8	86	SSW			2								
	30.37	771.4	30.42	772.6	43.0	6.1	92	WSW			1		5			0	0	Cloudy	H. v d Brink.

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	29.94	760.5	30.00	761.9	45.3	7.4	89	SSW	15.4	6.9	.....	.....	5	.....	.....	0.472	12.0	Light rain....	
Brönö	29.40	746.8	29.44	747.8	42.8	6.0	56	W	27	12	.....	.....	8	.....	.....	1.165	29.6	Raining.....	
Christiania	29.80	757.0	29.95	760 8	44.6	7.0	59	SSW	7	3	.....	.....	10	.....	.....	0	0	.....	
Tromsö	28.95	735.4	29.00	736.5	39.9	4 4	80	SW	7	3	.....	.....	9	.....	.....	0.480	12.2	.....	
.....																			

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	30.31	769.9	30.50	774.8	58.6	14.8	82	NNE	8.7	3.9	.....	.....	3	.....	.....	0.079	2.0	.....	Dr. J. A. Sampaio
Campo Major	29.16	740.7	30.19	766.7	63.1	17.3	52	E	3.8	1.7	.....	.....	0	.....	.....	0	0	.....	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.00	762.1	30.09	764.3	71.6	22.0	44	NE	14.3	6.4	.....	.....	1	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.82	757.5	30.18	766.6	59.5	15.3	54	NE	6.3	2.8	.....	.....	0	.....	.....	0	0	.....	The Staff.
Ponta Delgada, (Azores)	30.34	770.6	30.41	772.4	59.4	15.2	80	NNE	11.9	5.3	.....	.....	4	W	.....	0.484	12.3	.....	
.....																			
.....																			

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 9 h. 6 m., p. m. *Probably 30.41 in., and 772.3 mm

Naval Series. Vessels.	Sea or swell. Height scale 0–9	Sea or swell. Direction from—		
S. S. India.				A. D. Pedroso, Com'd't. Lt. S. A. P. de Mirando
.....				.....
.....				.....

Note.—The originals give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.89	759.3	30.33	770.4	45.7	7.6	80	WNW	7	3	.....	.....	10	.....	.....	.....	.....	.....	Astronomical Obs.
Wilna	29.76	756.0	30.20	767.0	45.0	7.2	82	W	2	1	.....	.....	5	.....	.....	.....	.....	.....	Astronomical Obs.
Dorpat	29.62	752.3	29.87	758.6	43.5	6.4	81	WSW	11	5	.....	.....	10	.....	.....	.....	.....	.....	Prof. Dr. Weihrauch
St. Petersburg	29.66	753.3	29.67	753.7	40.5	4.7	88	WSW	22	10	.....	.....	4	.....	.....	.....	.....	.....	Central Physical Obs.
Kuopio	29.06	738.2	29.39	746.4	38.5	3.6	80	WSW	27	12	.....	.....	10	.....	.....	Blank	Blank	.....	Ch. Forsten.
Kieff	29.63	752.5	30.30	769.5	31.3	— 0.4	100	SSW	7	3	.....	.....	10	.....	.....	.....	.....	Foggy	Physical Cabinet.
Nikolaiev	30.39	772.0	30.47	773.8	34.2	1.2	85	NW	0	0	.....	.....	0	.....	.....	.....	.....	... .	Kurdukof.
Kertch	30.40	772.2	30.42	772.7	38.5	3.6	78	NNE	7	3	.....	.....	4	.....	.....	.....	.....	.....	Lagorio.
Moscow	29.48	748.9	30.06	763.5	33.4	0.8	90	S	9	4	.....	.....	10	.....	.....	.....	.....	Snowing.....	Meteorological Obs.
Lugan	30.24	768.1	30.46	773.6	25.5	— 3.6	78	SSW	2	1	.....	.....	9	.....	.....	.....	.....	.....	Meteorological Obs.
Archangel	29.00	736 5	29.02	737.0	37.0	2.8	96	SW	29	13	.....	.....	10	.....	.....	.....	.....	.....	Ogorodnikof.
Tiflis	28.99	736.3	29.46	773.7	42.6	5.9	62	Calm	0	0	.....	.....	10	.....	.....	.....	.....	.....	Physical Observatory.
Astrakhan	30.65	778.6	30.57	776.5	32.0	0.0	78	Calm	0	0	.....	.....	10	.....	.....	.....	.....	.....	Sebastianof.
Kasan	29.80	756.9	30.08	764.1	26.8	— 2.9	87	SSW	9	4	.....	.....	7	.....	.....	.....	.....	.....	Physical Cabinet.
Orenburg	29.96	761.0	30.37	771.3	19.6	— 6.9	54	E	13	6	.....	.....	0	.....	.....	.....	.....	.....	Tschernischef.
Ekaterinburg	29.13	739.9	30.13	765.4	22.6	— 5.2	88	WSW	18	8	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Nukuss	30.25	768.4	30.50	774.8	28.8	— 1.8	88	NE	4	2	.....	.....	0	.....	.....	.....	.....	.....	
Kasaly	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Bobrof.
Tashkend	28.69	728.8	30.52	775.2	29.3	— 1.5	82	SW	2	1	.....	.....	5	.....	.....	.....	.....	.....	Michelson.
Barnaul	30.14	765.5	30.73	780.5	3.7	—15.7	85	Calm	0	0	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Yeniseisk	30.10	764.4	30.45	773.3	18.7	— 7.4	90	SW	2	1	.....	.....	9	.....	.....	Blank	Blank	.....	Marks.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Usolzef.
Oorga	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Mossin.
Peking, (China)	30.34	770.5	30.48	774.1	33.1	0.6	31	NNW	22	10	.....	.....	3	.....	.....	.....	.....	.....	Physical Observatory.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nikolaievsk, on the Amoor	.....	.....	.....	.....	26.6	— 3.0	96	Calm	0	0	.....	.....	10n	.....	.....	.....	.....	Snowing.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Ekaterinburg, 306.4? m., or 1,005.2? ft.; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft. *Published as given—reason for asterisk unknown.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Rave, Director.
Bilbao, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Manuel de Naveran
Burgos, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Domingo Martin y Perez.
Madrid, Royal Observatory	27.95	709.9	30.19	766.9	56.3	13.5	53	NE	0	0	.....	0	0	.....	.....	0	0	Clear.....	The Staff.
Murcia, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Olayo Diaz, Director.
Santiago, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.98	761.3	30.04	763.0	76.2	24.6	80	NNE	11.9	5.3	.....	0	5k;n	.....	NNE	0.012	0.3	Fair.....	Benito Vines, S. J.
San Fernando, Naval Obs'y.	30.05	763.3	30.15	765.8	70.0	21.1	49	E	14.0	6.3	.....	0	0	.....	.....	0	0	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.	.....	.....	29.80	757.0	80.2	26.8	84	S.	0	0	.....	7s	2k	.....	.....	0	0	D. clouds....	Leonardo de Tejeda, Chief of Engineers.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Low'r 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.16	740.7	29.20	741.7	35 2	1.8	.....	W	.....	.....	2	.....	5	.....	.....	0.354	9.0	.....	
Umea	29.40	746.8	29.45	748.1	41.0	5.0	63	NW	.....	.....	4	.....	8	.....	.....	0	0	.....	
Hernosand	29.59	751.5	29.64	752.8	44.2	6.8	52	WSW	.....	.....	2	.....	4	.....	.....	0	0	.....	
Stockholm	29.75	755.7	29.93	760.2	45.0	7.2	58	WSW	.....	.....	4	.....	0	.....	.....	0	0	.....	
Wisby	30.00	761.9	30.06	763.4	45.7	7.6	74	WNW	.....	.....	6	.....	0	.....	.....	0.047	1.2	.....	
Sub-Series.																			
Upsala	29.80	757.0	29.88	758.9	43.9	6.6	63	WSW	10.7	4.8	.....	.....	1	W	.....	0	0	.....	Dr. Hildebrandsson.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.87	733.3	30.34	770.5	41.9	5.5	80	NNE	.....	.....	1	.....	10	.....	.....	0	0	Covered	The Observatory.
Zurich	28.67	728.2	30.36	771.1	39.2	4.0	89	N	.....	.....	1	.....	10	.....	.....	0	0	Foggy	The Observatory.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—For Geneva the corresponding departures from the normal values are: Barometer, +6.9 mm; Thermometer, —1.0 cent.; Relative Humidity, +3 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	30.27	768.8	55.0	12.8	62	N	14	6.5	.....	.....	3	.....	NE	0	0	.....	The Observatory.
Fao, (Persian Gulf)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salonica	.....	.....	30.34	770.6	59.0	15	.....	NE	.....	.....	2	.....	10	.....	.....	.....	.....	.....	B. Stefanides.
Valona	.....	.....	30.22	767.5	63.7	17.6	.....	W	.....	.....	1	.....	10	.....	.....	.....	.....	.....	A. Bertrand.
Varna	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0	Covered	Imperial Observatory.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.99	761.7	30.11	764.7	71.6	22.0	48	W	.....	.....	2	.....	0	.....	.....	0	0	Blue sky	Prof. C. V. A. Van Dyck

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	30.01	762.2	30.08	764.0	35.9	2.2	99	Calm	0	0	.....	0	.....	.....	.....	.....	.....	.....	Hon. J. Ferguson.
Brockville, Ontario	.....	.....	30.09	764.3	39	3.9	.....	Calm	0	0	.....	.....	10s	.....	.....	0	0	Cloudy	W. R. Bigg.
*Chatham, N. B	.....	.....	30.08	764.0	35	1.7	96	Calm	0	0	.....	0	Haze	.....	SW	0.02	0.5	Cloudy	G. A. Blair.
Charlottetown, P. E. Island	.....	.....	30.10	764.5	48	8.9	93	Calm	0	0	.....	.....	10ks	.....	Calm	0.25	6.3	Fair	H. J. Cundall, C. E.
Cornwall, Ontario	29.87	758.7	30.06	763.5	36.3	2.4	94	W	.....	.....	1	.....	10s	.....	.....	0.090	2.29	Cloudy	James Smith, M. A.
Dalhousie, N. B	30.06	763.5	30.09	764.3	36.2	2.3	88	W	.....	.....	1	.....	.....	.....	.....	0	0	Cloudy	H. A. Johnson.
Esquimault, B. C	30.06	763.5	30.11	764.8	46 8	8.2	88	Calm	.....	.....	.....	0	0	.....	.....	0.66	16.8	Clear	W. H. Bevis.
*Father Point, Quebec	.....	.....	30.10	764.5	35	1.7	83	SW	7	3.1	.....	.....	10s	.....	.....	0.25	6.3	Clear	J. McWilliams.
Fredericton, N. B	30.09	764.3	30.16	766.1	38.2	3.4	90	NW	2.0	0.9	.....	0	0	.....	SW	0.10	2.5	Cloudy	Prof. Harrison.
*Fort Garry, Manitoba	.....	.....	30.42	772.7	4	—15.6	92	NW	10	4.5	.....	5k	5ks	NW	NW	0.19	4.8	Clear	James Stewart.
Goderich, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Inap.	Inap.	Cloudy	H. J. Strang, M. A
Granton, Ontario	28.83	732.3	29.94	760.5	43	6.1	100	SE	.....	.....	1	.....	10n	.....	.....	.....	.....	.....	
*Halifax, N. S	29.94	760.5	30.08	764.0	51	10.6	97	SW	1	0.4	.....	.....	10n	.....	.....	0	0	Cloudy	James Grant.
Hamilton, Ontario	29.64	752.8	30.01	762 2	46.2	7.9	86	SW	.....	.....	1	10cs	.....	S	.....	3.42	86.9	Light rain	F. Allison, M. A.
Heart's Content, N. F	30.14	765.5	30.16	766.1	51	10.6	93	SW	.....	.....	1	.....	10	.....	.....	0.10	2.5	Cloudy	Geo. Dickson, M. A
*Kingston, Ontario	29.73	755.1	30.07	763.8	43	6.1	87	SE	2	0.9	.....	.....	10ks	.....	Calm	1.95	49.5	Overcast	E. Weedon.
Little Glace Bay, N. S	30.09	764.3	30.13	765.3	51.8	11.0	94	NW	10	4.5	.....	.....	10n	.....	.....	0.06	1.5	Overcast	C. H. Rigby.
*Montreal, Quebec	29.90	759.4	30.11	764.8	39	3.9	89	S	4	1.8	.....	.....	10n	.....	.....	0.16	4.1	Hazy	S. Woods, M. A.
*Parry Sound, Ontario	29.24	742.7	29.94	760.5	40	4.4	91	SE	12	5.4	.....	2c	2ks	S	S	0	0	Cloudy	C. H. McLeod, C. E.
Peterboro, Ontario	29.27	743.4	30.04	763.0	40.7	4.8	99	Calm	.....	.....	0	0	Fog	.....	.....	0	0	Cloudy	Rev. R. Mosley.
Port Dover, Ontario	29.30	744.2	29.99	761.7	46	7.8	92	S	10	4.5	.....	.....	10n	.....	.....	0.02	0.5	Fine	C. H. McLeod, C. E.
Port Hastings, N. S	30.07	763.8	30.12	765.0	53.5	11.9	.....	S	2	0.9	.....	.....	.....	.....	.....	0.55	14.0	Light rain	J. F. Jeffers, B. A.
Port Stanley, Ontario	29.33	745.0	29.98	761.5	48	8.9	94	SE	4	1.8	.....	.....	10n	.....	SW	0.02	0.5	Raining	H. Morgan.
*Quebec, Quebec	29.84	757.9	30.17	766.3	34	1.1	80	Calm	0	0	.....	.....	Fog	.....	Calm	0.09	2.3	Foggy	Peter Grant.
*Rockliffe, Ontario	29.55	750.6	30.02	762.5	36	2.2	90	E	5	2.2	.....	.....	8s	.....	W	0	0	Cloudy	M. Payne.
St. John, N. B	29.96	761 0	30.13	765.3	46	7.8	92	Calm	0	0	.....	0	9k	.....	.....	0	0	Cloudy	Capt. Ashe, R. N
*Saugeen, Ontario	29.18	741.2	29.88	758.9	43	6.1	91	SE	2	0.9	.....	.....	10ks	.....	.....	0	0	Cloudy	W. H. McIntyre.
Stayner, Ontario	.....	.....	29.97	761.2	41	5.0	87	SE	5	2.2	.....	10k	0	W	.....	0	0	Cloudy	G. Murdock, C. E.
Stratford, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0	Cloudy	K. Stewart.
*Sydney, C. B	30.10	764.5	30.13	765.3	53	11.7	97	SW	7	3.1	.....	10cs	2n	.....	SW	0	0	Cloudy	R. J. Cole.
*Toronto, Ontario	29.61	752.1	30.00	762.0	43	6.1	94	SE	2	0.9	.....	.....	10n	.....	.....	0.07	1.8	Cloudy	C. J. MacGregor, M. A.
Windsor, N. S	30.00	762.0	30.09	764.3	50.0	10.0	100	N	6	2.7	.....	.....	10n	.....	.....	0	0	Cloudy	T. C. Hill.
Woodstock, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.08	2.0	Foggy	Magnetic Observatory.
Sub-Series.																			Prof. John E. Oram.
St. Johns, Newfoundland	.....	.....	.....	.....	45.0	7.2	92	SW	.....	.....	.....	10k	10s;n	.....	.....	0.03	0.8	Cloudy	J. Montgomery.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	John Delany
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rainfall or melted snow in the past 24 hours. Inches.	Rainfall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.92	760.0	30.16	766.1	34	1.1	100	NW	2	0.9	.....	.....	Fog	.....	Calm	Inap.	Inap.	Dense fog	
Alpena, Michigan	29.16	740.7	29.81	757.2	42	5.6	83	S	11	4.9	.....	.....	10s	.....	S	0.02	0.5	Cloudy	
Atlantic City, New Jersey	30.12	765.0	30.14	765.5	60	10.0	100	NE	4	1.8	.....	8ck	0	W	.....	0	0	Cloudy	
Augusta, Georgia	29.98	761.5	30.16	766.1	52	11.1	96	Calm	0	0	.....	.....	Fog	.....	NW	0	0	Foggy	
Baltimore, Maryland	30.08	764 0	30.13	765.3	51	10.6	72	NW	1	0.4	.....	2ck	Sm'e	NW	Calm	0	0	Fair	
Barnegat, New Jersey	30.11	764.8	30.14	765.5	53	11.7	93	N	8	3.6	.....	5ck	Haze	SW	Calm	0	0	Fair	
Bismarck, Dakota	28.33	719.6	30.09	764.3	26	— 3.3	88	E	15	6.7	.....	.....	10s; sm	.....	Calm	0	0	Cloudy	
Boise City, Idaho	27.37	695.2	30.06	763.5	39	3.9	81	W	4	1.8	.....	0	8s	.....	Calm	0.12	3.0	Fair	
Boston, Massachusetts	29.98	761.5	30.13	765.3	45	7.2	69	N	6	2.7	.....	4c	Haze	W	.....	0.06	1.5	Fair	
Brackettville, Texas	28.98	736.1	30.01	762.2	56	13.3	62	E	1	0.4	.....	8k	0	S	.....	0	0	Fair	
Breckenridge, Minnesota	29.20	741.7	30.29	769.4	17	— 8.3	90	N	8	3.6	.....	.....	10ks	.....	Calm	0	0	Cloudy	
Brownsville, Texas	30.10	764.5	30.17	766.3	58	14.4	93	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.	
Buffalo, New York	29.27	743.4	29.97	761.2	47.0	8.3	76	SE	4	1.8	.....	2c	8s	W	SW	0	0	Cloudy	
Burlington, Vermont	29.87	758.7	30.14	765.5	41	5.0	83	S	1	0.4	.....	2c	0	Calm	.....	Inap.	Inap.	Fair	
Cairo, Illinois	29.74	755.4	30.14	765.5	48	8.9	78	SW	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Camp Grant, Arizona	25.22	640.6	30.02	762.5	54	12.2	15	NE	.....	.....	1	0	0	.....	.....	0	0	Clear	
Camp Verde, Arizona	26.78	680.2	30.27	768.8	35	1.7	61	NW	.....	.....	.....	0	0	.....	.....	0	0	Clear.	
Campo, California	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Cape Hatteras, N. Carolina	30.06	763.5	30.06	763.5	56	13.3	93	W	2	0.9	.....	0	Fog	.....	Calm	1.45	36.8	Foggy	
Cape Henry, Virginia	30.09	764.3	30.12	765.0	54	12.2	80	SW	3	1.3	.....	0	Fog	.....	Calm	0	0	Clear	
Cape Lookout, N. Carolina	30.11	764.8	30.13	765.3	57	13.9	100	NE	2	0.9	.....	.....	Fog	.....	NE	1.04	26.4	Foggy	
Cape May, New Jersey	30.10	764.5	30.12	765.0	54	12.2	86	NE	6	2.7	.....	.....	8s	.....	NE	0	0	Fair	
Charleston, South Carolina	30.10	764.5	30.17	766.3	58	14.4	100	Calm	0	0	.....	.....	Fog	.....	Calm	0	0	Foggy	
Cheyenne, Wyoming	23.94	608.1	29.88	758.9	36	2.2	71	W	4	1.8	.....	5ck	8s	W	W	0	0	Cloudy	
Chicago, Illinois	29.22	742.2	29.92	760.0	40	4.4	82	SW	7	3.1	.....	0	Fog	.....	Calm	0	0	Foggy	
Cincinnati, Ohio	29.32	744.7	29.95	760.7	53	11.7	67	S	2	0.9	.....	0	8s	.....	W	Inap.	Inap.	Fair	
Cleveland, Ohio	29.27	743.4	30.00	762.0	46	7.8	85	SE	8	3.6	.....	0	8n	.....	S	0.02	0.5	Light rain	
Concho, Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Corsicana, Texas	29.70	754.4	30.18	766.6	46	7.8	85	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Davenport, Iowa	29.41	747.0	30.06	763.5	37	2.8	80	NW	5	2.2	.....	Haze	0	Calm	.....	0	0	Clear	
Denison, Texas	29.35	745.5	30.17	766.3	48	8.9	78	SW	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Denver, Colorado	24.70	627.4	29.92	760.0	35	1.7	61	S	4	1.8	.....	0	8s	.....	Calm	0	0	Fair	
Detroit, Michigan	29.23	742.4	29.90	759.4	45	7.2	84	S	2	0.9	.....	.....	10s	.....	S	Inap.	Inap.	Cloudy	
Dodge City, Kansas	27.46	697.5	29.79	756.7	41	5.0	65	SE	4	1.8	.....	Haze	2s	Calm	Calm	0	0	Fair	
Dubuque, Iowa	29.50	744.2	30.02	762.5	37	2.8	90	NW	7	3.1	.....	0	Haze	.....	Calm	0	0	Clear	
Duluth, Minnesota	29.40	746.7	30.11	764.8	29	— 1.7	89	NE	9	4.0	.....	.....	10s	.....	NE	0.14	3.6	Cloudy	
Eagle Pass, Texas	29.35	745.5	30.10	764.5	56	13.3	75	Calm	0	0	.....	0	5s	.....	S	0	0	Fair	
Eastport, Maine	30.04	763.0	30.11	764.8	44	6.7	84	NW	2	0.9	.....	5ck	0	SW	.....	0.32	8.1	Fair	
Erie, Pennsylvania	29.25	742.9	29.95	761.0	48	8.9	85	S	7	3.1	.....	.....	10s	.....	SW	0.07	1.8	Cloudy	
Escanaba, Michigan	29.15	740.4	29.80	756.9	39	3.9	91	W	6	2.7	.....	.....	10s	.....	W	0.32	8.1	Cloudy	
Florence, Arizona	28.38	720.8	29.95	761.5	45	7.2	24	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Fort Bayard, New Mexico	24.09	611.9	30.09	764.3	38	3.3	38	NE	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Fort Craig, New Mexico	25.55	650.0	.....	.....	26	— 3.3	63	W	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Fort Gibson, Indian Ter	29.59	751.6	30.15	765.8	36	2.2	90	E	1	0.4	.....	2c	Fog	Calm	.....	0	0	Fair	
Fort Griffin, Texas	28.87	733.3	30.19	766.8	41	5.0	73	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	28.90	734.0	30.05	763.3	40	4.4	82	NW	.....	.....	1	0	0	.....	.....	0	0	Clear	
Galveston, Texas	30.13	765.3	30.17	766.3	60	15.6	88	NE	3	1.3	.....	0	1s	Calm	0	0	Cloudy		
Grand Haven, Michigan	29.20	741.7	29.84	757.9	49	9.4	86	SW	10	4.5	.....	.....	10s	.....	SW	0	0	Clear	
Indianapolis, Indiana	29.17	740.9	29.95	760.7	50	10.0	78	S	1	0.4	.....	0	0	.....	.....	Inap.	Inap.	Clear	
Indianola, Texas	30.16	766.1	30.18	766.6	58	14.4	94	NE	9	4.0	.....	0	0	.....	.....	0	0	Clear	
Jacksboro, Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Jacksonville, Florida	30.12	765.0	30.15	765.8	59	15.0	87	NE	1	0.4	.....	0	Sm'e	.....	Calm	0	0	Clear	
Keokuk, Iowa	29.44	747.8	30.07	763.8	41	5.0	76	NW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Key West, Florida	30.01	762.2	30.04	763.0	72.5	22.5	85	N	15	6.7	.....	5cs	0	E	.....	0	0	Fair	
Kittyhawk, North Carolina	30.11	764.8	30.14	765.5	53	11.7	100	E	2	0.9	.....	.....	Fog	.....	.....	0.02	0.5	Foggy	
Knoxville, Tennessee	29.15	740.4	30.19	766.8	38	3.3	99	Calm	0	0	.....	.....	Fog	.....	Calm	0	0	Dense fog	
La Crosse, Wisconsin	29.30	744.2	30.06	763.5	36	2.2	71	NW	5	2.2	.....	10k	0	NW	.....	0	0	Cloudy	
La Mesilla, New Mexico	26.15	664.2	30.30	769.6	32	0.0	59	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Laredo, Texas	.....	.....	.....	.....	54	12.2	87	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Leavenworth, Kansas	29.30	744.2	30.17	766.3	38	3.3	90	S	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Los Angeles, California	29.67	753.6	30.00	762.0	55	11.7	79	NE	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Louisville, Kentucky	29.45	748.0	30.00	762.0	53	11.7	79	SW	7	3.1	.....	0	Fog	.....	Calm	0	0	Foggy	
Lynchburg, Virginia	29.44	747.8	30.12	765.0	49	9.4	57	Calm	0	0	.....	1c	Haze	W	Calm	0	0	Fair	
Maricopa Wells, Arizona	.....	.....	.....	.....	34	1.1	61	N	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Marquette, Michigan	29.11	739.4	29.81	757.2	40	4.4	82	W	6	2.7	.....	.....	10s	.....	W	0.22	5.6	Threatening	
Mason, Texas	28.51	724.1	30.32	770.1	45	7.2	68	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Memphis, Tennessee	29.83	757.7	30.15	765.8	51	10.6	71	SW	4	1.8	.....	0	Sm'e	.....	Calm	0	0	Clear	
Milwaukee, Wisconsin	29.19	741.4	29.89	759.2	38	3.3	90	NW	14	6.3	.....	0	Fog	.....	.....	0	0	Dense fog	
Mobile, Alabama	30.15	765.8	30.20	767.1	56	13.3	100	Calm	6	2.7	.....	.....	Fog	.....	Calm	0	0	Cloudy	
Montgomery, Alabama	29.99	761.7	30.23	767.8	55.5	13.1	90	N	4	1.8	.....	.....	10s	.....	Calm	0	0	Fair	
Morgantown, West Virginia	28.98	736.1	30.05	763.3	44	6.7	75	Calm	0	0	.....	0	8s	.....	W	0	0	Clear	
Mt. Washington, N. H.	23.80	604.5	30.16	766.1	24	— 4.4	61	NW	18	8.0	.....	2c	Haze	NE	NW	0.66	16.8	Clear	
Nashville, Tennessee	29.57	751.1	30.12	765.0	44	6.7	92	Calm	0	0	.....	0	Fog	.....	Calm	0	0	Clear	
New Haven, Connecticut	30.03	762.7	30.15	765.8	44	6.7	75	N	5	2.2	.....	2cs	0	.....	.....	0	0	Clear	
New London, Connecticut	30.10	764.5	30.15	765.8	46	7.8	77	Calm	0	0	.....	2c	2s; hz	NW	Calm	0.10	2.5	Fair	
New Orleans, Louisiana	30.12	765.0	30.18	766.6	58	14.4	94	N	5	2.2	.....	.....	Fog	.....	Calm	0	0	Foggy	
Newport, Rhode Island	30.09	764.3	30.14	765.5	47	8.3	77	N	5	2.2	.....	2c	0	SW	.....	0.27	6.9	Clear	
New York, New York	29.98	761.5	30.16	766.1	59	10.0	78	Calm	0	0	.....	5cs	Fog	Calm	.....	0	0	Fair	
Norfolk, Virginia	30.09	764.3	30.15	765.8	50	10.0	93	S	4	1.8	.....	8k	Sm'e	SW	Calm	0	0	Cloudy	
North Platte, Nebraska	27.11	688.6	29.77	756.1	31	— 0.6	79	NE	4	1.8	.....	.....	10s	.....	Calm	0	0	Cloudy	
Olympia, Washington Ter.	30.16	766.1	30.20	767.1	43	6.1	91	S	5	2.2	.....	0	0	.....	.....	0.92	23.4	Clear	
Omaha, Nebraska	29.03	737.3	30.15	765.8	35	1.7	90	NW	2	0.9	.....	0	Fog	.....	NW	0	0	Clear	
Oswego, New York	29.75	755.6	30.08	764.0	44	6.7	84	SE	7	3.1	.....	10cs	Haze	SW	.....	0	0	Cloudy	
Pembina, Dakota	29.49	749.0	30.30	771.9	17	— 8.3	83	N	12	5.4	.....	.....	10s	.....	N	0	0	Cloudy	
Philadelphia, Pennsylvania	30.10	764.5	30.16	766.1	47	8.3	85	NE	8	3.6	.....	2c	5ks	E	E	0	0	Fair	
Phœnix, Arizona	.....	.....	.....	.....	41	5.0	41	Calm	.....	.....	.....	2c	0	W	.....	0	0	Clear	
Pike's Peak, Colorado	17.81	452.4	30.02	762.5	14	—10.0	46	W	16	7.2	.....	5c	0	W	.....	0	0	Fair	
Pioche, Nevada	24.06	611.1	29.83	757.7	37	2.8	62	N	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Pittsburg, Pennsylvania	29.21	741.9	30.03	762.7	46	7 8	92	E	2	0.9	.....	.....	10s; fg	.....	W; Calm	0.02	0.5	Cloudy	
Port Huron, Michigan	29.24	742.7	29.90	759.4	44	6.7	84	S	8	3.6	.....	0	8ks	.....	Calm	0	0	Fair	
Portland, Maine	30.09	764.5	30.14	765.5	47	8.3	70	N	6	2.7	.....	8ck	Fog	SW	.....	0.09	2.3	Cloudy	
Portland, Oregon	30.22	767.6	30.32	770.1	48	8.9	85	S	4	1.8	.....	.....	8s	.....	S	0.21	5.3	Cloudy	
Prescott, Arizona	24.79	729.6	30.15	765.8	43	6.1	43	S	.....	.....	.....	10cs	0	Calm	.....	0	0	Cloudy	
Punta Rassa, Florida	30.08	764.0	30.10	764.5	66	18.9	88	NE	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Red Bluff, California	30.00	762.0	30.38	771.6	44	6.7	84	N	8	3.6	.....	0	0	.....	.....	0.54	13.7	Clear	
Rochester, New York	29.40	746.7	30.02	762.5	43	6.1	75	S	4	1.8	.....	.....	10s; sm	.....	Calm	0	0	Cloudy	
Roseburg, Oregon	29.79	756.7	30.38	771.6	45.5	7.5	100	SW	1	0.4	.....	.....	10n	.....	Calm	0.69	17.5	Light rain	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Sacramento, California	30.23	767.8	30.32	770.1	43	6.1	87	N	8	3.6	.....	0	0	.....	.....	Inap.	Inap.	Clear.	
St. Louis, Missouri	29.51	749.5	30.09	764.3	45	7.2	68	W	12	5.4	.....	0	0	.....	.....	0	0	Clear	
St. Marks, Florida	30.15	765.8	30.16	766.1	54	12.2	93	N	2	0.9	.....	0	0	.....	.....	0	0	Clear	
St. Paul, Minnesota	29.21	741.9	30.08	764.0	28	—2.2	88	NW	6	2.7	.....	0	1s	.....	Calm	0	0	Clear	
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salt Lake City, Utah	26.73	653.5	30.06	763.5	41	5.0	74	N	4	1.8	.....	.....	10s	.....	Calm	0.23	5.8	Cloudy	
San Antonio, Texas	29.46	748.3	30.07	763.8	47	8.3	92	SW	2	0.9	.....	0	0	.....	.....	0	0	Clear	
San Diego, California	29.97	761.2	30.04	763.0	57	13.9	93	NE	4	1.8	.....	.....	10s	.....	Calm	0	0.	Cloudy	
Sandusky, Ohio	29.28	743.7	29.95	760.7	49	9.4	85	S	10	4.5	.....	2c	4s	SW	.....	0.01	0.3	Fair	
Sandy Hook, New Jersey	30.13	765.3	30.15	765.8	50	10.0	86	NE	5	2.2	.....	5c	Haze	SW	.....	0	0	Fair	
San Francisco, California	30.26	768.6	30.33	770.4	53	11.7	73	NW	8	3.6	.....	0	0	.....	.....	0.17	4.3	Clear	
Santa Fé, New Mexico	23.30	591.8	29.84	757.9	37.5	3.1	45	E	7	3.1	.....	0	1s	.....	.....	0	0	Clear	
Savannah, Georgia	30.07	763.8	30.17	766.3	57	13.9	93	W	3	1.3	.....	0	Fog	.....	.....	0	0	Clear	
Shreveport, Louisiana	29.99	761.7	30.22	767.6	48	8.9	92	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Smithville, North Carolina	30.13	765.3	30.17	766.3	54	12.2	100	NW	5	2.2	.....	.....	Fog	.....	Calm	0	0	Foggy	
Springfield, Massachusetts	29.97	761.2	30.10	764.5	30	3.9	81	Calm	0	0	.....	.....	Fog	.....	.....	Inap.	Inap.	Foggy	
Stanwix, Arizona	.....	.....	.....	.....	42	5.6	42	Calm	.....	.....	.....	0	2s	.....	Calm	0	0	Fair	
Stockton, Texas	27.06	687.3	30.06	763.5	38	3.3	80	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Thatcher's Island, Mass	30.09	764.3	30.14	765.5	47	8.3	85	NE	8	3.6	.....	8k	0	W	.....	0.12	3.0	Fair	
Toledo, Ohio	29.25	742.9	29.92	760.0	48	8.9	85	S	5	2.2	.....	0	2s	.....	S	0	0	Fair	
Tucson, Arizona	27.60	701.0	30.15	765.8	41	5.0	42	S	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Tybee Island, Georgia	30.13	765 3	30.16	766.1	57	13.9	100	W	4	1.8	.....	.....	Fog	.....	.....	0.02	0.5	Foggy	
Umatilla, Oregon	29.92	760.0	.....	.....	45	7.2	67	SW	16	7.2	.....	0	0	.....	.....	0	0	Clear	
Vicksburg, Mississippi	29.96	761.0	30.22	767.6	50	10.0	86	NW	1	0.4	.....	0	Sm'e	.....	.....	0	0	Clear	
Virginia City, Montana	24.23	615.4	29.71	754 6	33	0.6	79	W	6	2.7	.....	.....	10s	.....	Calm	0.12	3.0	Cloudy	
Visalia, California	29.89	759.2	30.27	768.8	46	7.8	92	NW	4	1.8	.....	0	2s	.....	NW	0	0	Fair	
Washington, D. C	30.02	762.5	30.13	765.3	46	7.8	84	N	1	0.4	.....	8ck	Fog	W	S	0	0	Cloudy	
Wickenburg, Arizona	.....	.....	.....	.....	36	2.2	29	NW	.....	.....	.....	2c	0	Calm	.....	0	0	Fair	
Wilmington, N. Carolina	30.05	763.3	30.13	765.3	53	11.7	100	Calm	0	0	.....	.....	Fog	.....	Calm	0.02	0.5	Dense fog	
Winnemucca, Nevada	25.88	657.3	30.24	768.1	36	2.2	80	S	6	2.7	.....	5k	0	W	.....	Inap.	Inap.	Fair	
Wood's Holl, Mass	30.08	764.0	30.14	765.5	50	10.0	86	N	3	1.3	.....	0	0	.....	.....	0.23	5.8	Clear	
Yankton, Dakota	28.87	733.3	30.25	768.3	23	—5.0	86	NE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Yuma, Arizona	29.84	757.9	30.01	762.2	46	7.8	30	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Sub-Series.																			
York Factory, B. A	30.24	768.1	30.30	769.6	3.0	—16.1	87	W	12	5.4	.....	4ck	0	W	.....	0	0	Fair	J. Fortescue, W. Wood.
Havana, Cuba, W. I	29.56	761.0	29.98	761.5	77	25.0	76	Calm	0	0	.....	4ck	4ks;n	E	NE	0.02	0.5	Cloudy	Chas. Hasselbrink.
Kingston, Jamaica, W. I	30.02	762.5	30.03	762.7	78	25.6	86	Calm	0	0	.....	2c	2a	NE	NE	0.52	13.2	.....	James Gall.
Navassa, W. I	29.77	756.1	29.85	758.2	80	26.7	.....	N	5	2.2	.....	.....	.....	.....	.....	0	0	Cloudy	F. M Everett.
St. Thomas, W. I	.....	.....	.....	.....	79	26.1	91	SE	4	1.8	.....	.....	10n	.....	.....	0.55	14.0	.....	G. O. Gellich.
Paramaribo, D. Guiana, S. A	.....	.....	29.98	761.5	84	28.9	75	E	.....	.....	3	4c	5k	E	.....	0	0	Fair	C. J. Hering.
Batavia, Dutch Guiana, S. A	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Dr. H. Groot.
Medellin, Colombia, S. A	25.21	640.3	.....	.....	65.5	18.6	86	Calm	.....	.....	0	.....	10n;s	.....	.....	0.57	14.5	Cloudy	Thomas Herran.
Honolulu, Oahu, H. I	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Daniel Smith.
Makawao, Maui, H. I	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters: Boise City, 2,860 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,102 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,235 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.67 in.; Cheyenne, 5.04 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard Mare Island, Cal.	30.29	769.4	46	7.8	45	7.2	84	N	4	1.8	....	.....	0	.....	.....	0.11	2.8	.....	.....	Clear.....	
Navy Yard, Pensacola, Fla.	30.29	769.4	.....	.....	63	17.2	83	N	3	1.3	....	.....	3	.....	.....	0	0	.....	.....	D. clouds....	
Navy Yard, Portsmouth, N.H	30.19	766.8	65	18.3	42	5.6	83	NW	.....	.....	.....	.....	.....	.....	.....	0	0	.....	.....	Clear	
Naval Hospital, Yokohama, Japan.....	29.80	756.9	63	17.2	56	13.3	94	WNW	.....	.....	1	.....	4c;k;sm	.....	SW	0.16	4.1	.....	.....	Fair.....	
Adams. Punta Arenas, Patagonia.	29.74	755.4	48	8.9	48	8.9	78	NNW	.....	.....	0–1	.....	10	.....	N	.....	.....	None	.....	Raining.....	
Alert. Yokohama, Japan.....	29.98†	761.5†	59	15.0	59	15.0	88	WNW	.....	.....	1	.....	0	.....	.....	.....	.....	.....	.....	Blue sky.....	
Alliance, Constantinople, Turkey.	30.36	771.1	62	16.7	60	15.6	76	NE	.....	.....	2–3	.....	2	.....	NE	.....	.....	.....	.....	Pleasant.....	
Ashuelot. Tientsin, China.....	30.43	772.9	43	6.1	35	1.7	36	NNW	.....	.....	1	.....	6	.....	NW	.....	.....	.....	.....	D. clouds....	
Canonicus, New Orleans, La.....	30.17	766.3	42	5.6	58	14.4	94	SE	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	Foggy	
Colorado, New York, N. Y.....	30.15	765.8	48	8.9	48	8.9	85	Calm	0	0	.....	.....	7	.....	SW	0	0	.....	.....	Foggy	
Despatch, Constantinople, Turkey.	30.40	772.1	74	23.3	57	13.9	63	NE	.....	.	4	.....	2	.....	Calm	.....	.....	.....	.....	Clear	
Essex, N. 4° 16′ W. 7° 19″.....	29.87	758.7	83	28.3	86	30.0	92	SE	.....	... ..	1	.....	5	.....	S	.....	.....	Long	SSW	D. clouds....	
Franklin, Norfolk, Va.....	30.21	767.3	50	10.0	50	10.0	93	S	3.6	1.6	.....	.....	4	.....	S	0	0	.....	.....	Foggy	
Guard, N. 32° 54′, W. 34° 27′.....	30.65	778.5	70	21.1	69	20.6	80	NE	.....	.....	5–6	.....	7	.....	N&E	.....	.....	Rough	N&E	Showery.....	
Lackawana, San Francisco, Cal.....	30.35	770 9	.....	.....	58	14.4	82	NW	.....	... .	2	.....	0	.....	.....	.....	.....	.....	.....	Blue sky.....	
Marion, Smyrna, Turkey.....	30.22	767.6	64	17.8	64	17.8	48	Calm	.....	.....	0	.....	6	.....	Calm	0	0	Smooth	.....	D. clouds.....	
Michigan, Erie, Pa.....	29.46	748.3	48	8.9	50	10.0	64	S	.....	....	1	.....	10	.....	SW	.....	.....	.....	.....	Raining.....	
Monongahela. N. 35° 26′, E. 15° 48′.....	30.03	762.7	69	20.6	69	20.6	90	ESE	.....	.....	4	.....	kn	.....	.....	Moder-ate.	Moder-ate.	Long	E	D. clouds.....	
New Hampshire, Port Royal, S.C.....	30.30	769.6	.. ..	.....	59	15.0	100	Calm	0	0	.....	.....	0	.....	.....	0	0	.....	.....	Foggy	
Omaha, Callao, Peru.....	30.04	763.0	73.5	23.1	72	22.2	85	SE	3	1.3	.....	.....	10	.....	SE	0	0	Smooth	.....	Dull.....	
Onward, Callao, Peru.....	30.03†	762.7†	72	22.2	70	21.1	95	SE	.....	.....	2	.....	10	.....	.....	.....	.....	Long	W	Misty.....	
Ossinee, Norfolk, Va.....	30.19	766.8	64	17.8	53	11.7	93	WSW	.....	.....	1	.....	5	.....	W	.....	.....	.....	.....	Foggy	
Palos, Shanghai, China.....	30.18	766.6	61	16.1	57	13.9	94	ENE	.....	.....	3–4	.....	10	.....	.....	.....	.....	.....	.....	Rainy.....	
Plymouth, Hampton Roads, Va.....	30.16	766.1	65	18.3	56	13.3	94	WSW	.....	.....	1	.....	3	.....	.....	.....	.....	Smooth	.....	Clear	
Powhatan, Hampton Roads, Va.....	29.77	756.1	55	12.8	55	12.8	100	SW	1.2	0.5	.....	.....	6	.....	.....	0	0	.....	.....	Pleasant.....	
Ranger, Shanghai, China.....	30.30	769.6	65	18.3	60	15.6	82	NE	.....	.....	2–4	.....	10	.....	NE	.....	.....	.....	.....	Rainy.....	
Rio Bravo, Brownsville, Texas.....	30.04	763.0	.....	.....	60	15.6	94	NW	.....	.....	2	.....	4	.....	NW	.....	.....	.....	.....	D. clouds.....	
Santee, Annapolis, Md.....	30.18	766.6	61	16.1	50	10.0	86	NE	.....	.....	1	.....	4	.....	NE	0	0	.....	.....	Cloudy.....	
Saratoga, Hampton Roads, Va.....	.....	.....	.....	.....	60	15.6	94	SW	.....	.....	2	.....	3	.....	Calm	0	0	.....	.....	Clear.....	
St. Louis, League Island, Pa	30.04	763.0	45	7.2	49	9.4	85	NE	3	1.3	.....	.....	7	.....	WSW	0	0	.....	.....	Light fog.....	
Swatara, Hampton Roads, Va.....	30.22	767.6	.....	.....	63	17.2	72	W	.....	.....	1	.....	1	.....	.....	.....	.....	.....	.....	D. clouds.....	
Tennessee, Yokohama, Japan.....	29.94	760.5	65	18.3	57	13.9	87	NW	2	0.9	.....	.....	3	.....	N&W	0.25	6.3	Smooth	.....	Misty.....	
Trenton, Villefranche, France.....	30.26	768.6	.....	.....	64	17.8	73	S	4	1.8	.....	.....	0	.....	.....	0	0	.....	.....	Blue sky.. ...	
Vandalia, Villefranche, France.,...	30.21	767 3	65	18.3	64	17.8	62	SSE	.....	.....	1	.....	0	.....	.....	.....	.....	.....	.....	Blue sky.....	
Wabash, Boston, Mass.....	30.15	765.8	53	11.7	44	6.7	84	NW	9	4.0	.....	.....	7	.....	Calm	0.03	0.8	.....	.....	D. clouds.....	
Wyoming, Washington, D. C.....	30.38†	771.6†	58	14.4	46	7.8	.....	Calm	.....	.....	0	....	6	.....	.....	.....	.....	.....	.....	Hazy.....	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. ‡ Barometer corrected for instrumental error and reduced to sea-level. The position given for the Plymouth is that at noon, local time, instead of that at 7:35 a. m., Washington time.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.	Character.	Direction from—		
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—				
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama, Panama Bay			29.66	753.4	70	26.1	91	NNW			2		7		NNW			D. clouds	Capt. Howard.
S. S. City of Peking, N. 40° 06′, W. 152° 54′			29.92*	760.0*	58	14.4	88	WSW			3		10		SW	Moderate.	SW	Raining	Lt. Z. L. Tanner, U.S.N
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio, N. 30° 00′, E. 165° 54′			30.33	770.4	70	21.1		NNE			5		10		NE	Rough	NNW	D clouds	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

NOTE.—The originals give the wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. *Aneroid.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson.
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.

S. S. Belgic																			Capt. John Metcalf.
S. S. Gaelic																			Capt. W. H. Kidley
S. S. Oceanic, N. 39° 57′, E. 139° 54′			29.75	755.6	51	10.6	79	Var.			2–3		6		WSW	Smooth		D. clouds	Capt. H. Parsell.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig																			Capt. K. Undütsch.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio, N. 44° 12′, W. 52° 5′			30.51	774.9	52.0	11.1	93	SSW			4		k		WSW	Smooth		Blue sky	Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, nor distinguish between upper and lower clouds.

UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell		Weather.	Observer
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Lo'wr	Upper.	Lower.	Character	Direction From—		
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second	0—10.	0—10.	0—10.	From—	From—				
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana. N. 48° 27′, W. 28° 36′			30.29*	769.4*	57	13.9	??	NNW			4		8		NNW	Light	NNE	Cloudy	Captain Sargent.
S. S. Ohio. Liverpool			30.25	768.3	54	12.2	87	SSW			2		10		Calm			Overcast	Captain Morrison.
S. S. Pennsylvania																			Captain Harris.

NOTE.—The originals give the barometer as read off; the wind-force by the scale 0 to 12. *Aneroid; correction for elevation applied, instrumental error not known.

RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

S. S. Nederland																			Capt. Randle.
S. S. Switzerland. N. 49° 45′, W. 8° 57′			30.47*	773.9*	52	11.1		SSW	8	3.6			5		WNW	Heavy	WNW	Fine	Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

*Aneroid; regulated to standard at Antwerp.

ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

S. S. Hibernian																			Capt. W. Richardson.
S. S. Scandinavian																			

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller Kennebunk, Maine			30.12	765.0	48	8.9	85	Calm	0	0			0					Clear	Capt. James Jorgensen.

NOTE.—The originals for the schooner Addie Fuller give the amount of cloudiness by the scale 0 to 4; the barometer as read off.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.,) Chief Signal Officer. U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON NOVEMBER 18, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours	.....	.....	30.16	766.0	63.3	17.4	81	NE	.....	.....	2	.....	9	.....	.....	0.760	19.3	Covered	Michel.
Algiers	.....	.....	30.02	762.5	64.4	18.0	82	NW	.....	.....	1	.....	7	.....	.....	0.614	15.6	Very cloudy	Peter.
La Calle	.....	.....	30.03	762.7	62.4	16.9	80	NW	.....	.....	2	.....	5	.....	.....	0	0	Cloudy.....	Fleury.
Tunis	.....	.....	30.07	763.6	63.3	17.4	77	NE	.....	.....	3	.....	0	.....	.....	0.008	0.2	Clear.....	Jacques.
Sfax	.....	.....	30.07	763.7	60.8	16.0	.....	NW	.....	.....	1	.....	4	.....	.....	0	0	Cloudy.....	Husson.
Saida	.....	.....	30.18	766.5	51.4	10.8	85	NNW	.....	.....	1	.....	6	.....	.....	0.059	1.5	Cloudy	Millot.
Tebessa	.....	.....	30.05	763.2	.....	.....	.....	Calm	.....	.....	0	.....	1	.....	.....	.....	.....	Very fair....	Bourgeois.
Geriville	.....	.....	30.05	763.3	48.0	8.9	78	NW	.....	.....	3	.....	6	.....	.....	0.236	6.0	Cloudy.....	Lemaillot.
Laghouat	.....	.....	30.07	763.6	53.6	12.0	65	N	.....	.....	2	.....	6	.....	.....	0.354	9.0	Cloudy.....	Guyot.
Biskra	.....	.....	30.08	763.9	66.0	18.9	67	SSE	.....	.....	1	.....	8	.....	.....	0	0	Very cloudy	Kuntz.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890 ? meters, or 2,919.9 ? feet; Tebessa, 1,088 ? m., or 3,569.4 ? ft.; Geriville, 1,380 ? m.; or 4,461.7 ? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

Agram	29.70	754.3	30.27	768.8	43.2	6.2	65	Calm	.....	.....	0	.....	10	.....	.....	0	0	.....	Prof. Ivan Stozir
Cracow, I. R. Observatory	29.49	749.1	30.28	769.2	42.8	6.0	97	NE	.....	.....	1	.....	10	.....	.....	0.008	0.2	.....	Dr. Wierzbiski.
Eperies	29.37	746.0	30.28	769.1	42.8	6.0	85	S	.....	.....	1	.....	10	.....	.....	0.008	0.20	.....	Julius Mikolik.
Gratz	29.07	738.8	30.26	768.7	41.0	5.0	80	S	.....	.....	2	.....	10	.....	.....	0	0	.....	Andreas Rospini.
Hermannstadt	28.85	732.7	30.36	771.1	31.8	—0.1	85	ESE	.....	.....	1	.....	10	.....	.....	0	0	.....	Prof. Reissenberger.
Kremsmünster	28.81	731.8	30.21	767.2	38.5	3.6	83	ENE	.....	.....	2	.....	10	.....	.....	0	0	.....	Prof. C. Wagner.
Lemberg	29.23	742.4	30.24	768.1	44.6	7.0	91	SW	.....	.....	1	.....	10	.....	.....	0	0	.....	Dr. T. Stanecki.
Pola	30.07	763.7	30.18	766.6	52.7	11.5	49	ESE	.....	.....	2	.....	1s	.....	.....	0	0	.....	I.R.Hydrographic Office.
Szathmar	29.89	759.3	30.38	771.6	39.9	4.4	73	SE	.....	.....	3	.....	10	.....	.....	0	0	.....	Johann Tamas, S. J.
Szegedin	30.01	762.2	30.30	769.6	43.2	6.2	82	Calm	.....	.....	0	.....	10	.....	.....	0	0	.....	Karl Stancel.
Trieste	30.11	764.8	30.21	767.4	52.0	11.1	46	NE	.....	.....	1	.....	0	.....	.....	0	0	.....	P. Busin.
Vienna	29.52	749.7	30.24	768.1	41.7	5.4	74	SE	.....	.....	2	.....	.....	.....	.....	0	0	.....	I. R. Central Met. Obs'y.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time, and at Trieste at 7 a. m. of the following day. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

Arlon	28.65	727.7	30.20	767.1	41.4	5.2	94	SW	.....	.....	1	.....	10	.....	.....	0.020	0.5	Light rain ...	Prof. M. Passau.
Brussels	29.95	760.6	30.15	765.9	45.1	7.3	94	SW	.....	.....	1	.....	10	.....	SW	0.049	1.25	Rain and fog	Royal Observatory.
Furnes	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.071	1.8	Foggy	M. E. de Cae.
Maeseyck	30.03	762.8	30.16	766.1	46.6	8.1	96	SW	.....	.....	2	.....	10	.....	.....	0	0	.....	M. Pierrot.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	29.60	751.8	29.70	754.4	45.1	7.3	.....	SSW	13	5.8	.....	.....	2	.....	.....	0	0	Blue sky	W. Boswell.
Ardrossan	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	William McNeil.
Armagh, Observatory	.....	.....	29.94	760.5	45.3	7.4	.....	SW	15	6.7	.....	.....	.....	.....	.....	.....	.....	.....	S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)	.....	.....	29.98	761.5	47.4	8.6	.....	WSW	22	9.8	.....	.....	7	.....	.....	.....	.....	D. clouds	John Hartnup.
Birr Castle, (Parsonstown)	.....	.....	30.04	763.0	46.6	8.1	.....	W	.....	.....	1	.....	6	.....	.....	.....	.....	Showery	J. L. E. Dreyer.
Bradford, Yorkshire	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.01	0.3	.....	J. McLandsborough.
Bridgetown, (Barbados)	29.86	758.4	29.89	759.2	81.5	27.5	.....	NE	.....	.....	2	.....	2	.....	.....	.....	.....	D. clouds	Pvt. G. W. Roberts, A.
Cambridge, Observatory	.....	.....	30.03	762.7	49.9	9.9	.....	S	.....	.....	1	.....	10	.....	.....	.....	.....	Overcast	H. Todd. [H. C.
Cardington	.....	.....	30.04	763.0	48.0	8.9	.....	SW	.....	.....	1	.....	4	.....	.....	.....	.....	D. clouds	John McLaren.
Chatham, School M. E	29.94	760.5	30.08	764.0	48.2	9.0	.....	SW	.....	.....	2	.....	0	.....	.....	.....	.....	Foggy	Lt. W. G. Morris, R. E.
Dartmoor	28.65	727.7	30.12	765.0	46.0	7.8	.....	W	.....	.....	5	.....	7	.....	.....	.....	.....	Gloomy	Alexander Watt.
Davos Platz (Switzerland)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Francis Redford, M. A.
Donaghadee	29.87	758.7	29.90	759.4	43	6.1	.....	W	.....	.....	3	.....	3	.....	.....	.....	.....	D clouds	J. Mac Gowan.
Dover	30.08	764.0	30.10	764.5	50	10.0	.....	WSW	.....	.....	3	.....	7	.....	.....	.....	.....	¾ clouded	J. Costello.
Eccles, (near Manchester)	.....	.....	29.97	761.2	43.8	6.6	.....	NW	.....	.....	.....	.....	10	.....	.....	.....	.....	Raining	Thomas Mackereth.
Falmouth, Observatory	29.90	759.4	30.13	765.3	51.9	11.1	.....	SW	.....	.....	3	.....	8	.....	.....	.....	.....	Overcast	The Staff.
Fort Napier, (Natal)	27.67	702.8	30.09	764.3	67.4	19.7	.....	NE	.....	.....	3	.....	6	.....	.....	.....	.....	D. clouds	Pvt. G. Salmon, A. H. C.
Free Town, (Sierra Leone)	.....	.....	29.90	759.4	83.0	28.3	.....	Calm	.....	.....	0	.....	4	.....	.....	.....	.....	D. clouds	
Galway, Queen's College	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	30.08	764.0	30.13	765.3	65.4	18.6	.....	NE	.....	.....	2	.....	1	.....	.....	.....	.....	Blue sky	Corpl. C. Aitken, A. H. C.
Glasgow, Observatory	29.60	751.8	29.80	756.9	43.2	6.2	.....	WSW	.....	.....	3	.....	3	.....	.....	.....	.....	Blue sky	D. G. Maclean.
Great Yarmouth	30.05	763.3	30.06	763.5	45	7.2	.....	SW	.....	.....	2	.....	3	.....	.....	.....	.....	Hazy	G. T. Watson.
Greenwich, Royal Obs'y	29.90	759.4	30.07	763.8	49.0	9.4	.....	SSW	.....	.....	1	.....	9	.....	.....	.....	.....	D. clouds	The Staff, for G. B. Airy.
Guernsey	29.92	760.0	30.14	765.5	53	11.7	.....	SW	.....	.....	1	.....	8	.....	.....	.....	.....	D. clouds	Dr. S. E. Hoskins, F. R. S.
Helston	.....	.....	30.17	766.3	53	11.7	.....	NW	.....	.....	2	.....	10n	.....	.....	.....	.....	Showery	M. P. Moyle.
Holyhead	29.95	760.7	30.01	762.2	48	8.9	.....	W	.....	.....	3	.....	8	.....	.....	.....	.....	D. clouds	John Tilston.
Jersey	29.90	759.4	30.19	766.8	53.0	11.7	.....	W	.....	.....	3	.....	10	.....	.....	Blank	Blank	Hazy	J. Fisher.
Kew, Observatory	.....	.....	30.07	763.8	49.2	9.6	.....	SSW	12	5.4	.....	.....	.....	.....	.....	.....	.....	Hazy	The Staff.
Kingstown	29.96	761.0	29.99	761.7	47	8.3	.....	W	.....	.....	4	.....	1	.....	.....	.....	.....	Blue sky	George Mitchell.
Leicester, Museum	.....	.....	30.00	762.0	44.1	6.7	.....	NW	.....	.....	1	.....	10	.....	.....	.....	.....	Drizzling	Wm. J. Harrison, F. G. S.
Malta, (Mediterranean)	29.98	761.5	30.06	763.5	68.2	20.1	.....	W	.....	.....	3	.....	2	.....	.....	.....	.....	D. clouds	Sgt. C. Arbeiter, A. H. C.
Nairn	29.56	750.8	29.65	753.1	42	5.6	.....	W	.....	.....	4	.....	8	.....	.....	.....	.....	¾ clouded	W. D. Penny.
Nassau, (Bahamas)	.....	.....	30.03	762.7	76.8	24.9	.....	NE	.....	.....	3	.....	4	.....	.....	.....	.....	D. clouds	C. S. Duncombe.
Nottingham, Observatory	29.83	757.7	30.02	762.5	45.0	7.2	.....	WNW	.....	.....	4	.....	10k;d	.....	WNW	.....	.....	Raining	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.47	748.5	30.00	762.0	43.7	6.5	.....	NW	.....	.....	3	.....	10	.....	.....	.....	.....	Raining	Rev. Stephen Whitty
Oxford, Radcliffe Obs'y	.....	.....	30.05	763.3	50	10.0	.....	WSW	.....	.....	1	.....	2	.....	.....	.....	.....	Blue sky	F. Lucas
Plymouth	30.04	763.0	30.12	765.0	52.0	11.1	.....	SW	.....	.....	2	.....	10	.....	.....	.....	.....	Overcast	John Merrifield.
Roche's Point	30.04	763.0	30.08	764.0	47	8.3	.....	W	.....	.....	3	.....	2	.....	.....	.....	.....	Fine	W. Kennedy.
Saint Ann's Head	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	John C. Walker.
Sandwick Manse, (Orkneys.)	.....	.....	29.52	749.8	43.6	6.4	.....	SW	20	8.9	.....	.....	7	.....	.....	.....	.....	Showery	Rev. C. Clouston, LL. D
Scutari, Cemetery, (Turkey)	.....	.....	30.22	767.6	52.8	11.6	.....	NE	.....	.....	2	.....	5	.....	.....	.....	.....	D. clouds	Sergt. W. H. Lyne.
Sheffield	29.75	755.6	29.91	759.7	45.2	7.3	.....	WNW	.....	.....	2	.....	10	.....	.....	0.02	0.5	Raining	W. F. Cooper.
Silloth Rectory	29.85	758.2	29.88	758.9	49.3	9.6	73	W	.....	.....	3	.....	1	.....	.....	0.035	0.89	D. clouds	Rev. F. Redford, M. A.
Stonyhurst, Observatory	.....	.....	.....	.....	42.1	5.6	.....	SW	.....	.....	1	.....	10	.....	.....	.....	.....	Drizzling	Rev. S. J. Perry.
Stornoway, Lewis C., (Hebr.)	.....	.....	29.51	749.5	43	6.1	.....	W	.....	.....	5	.....	2	.....	.....	.....	.....	D. clouds	John Smith.
Stratfield Turgiss	29.86	758.4	30.08	764.0	51.7	10.9	.....	SW	.....	.....	1	.....	5	.....	.....	.....	.....	D. clouds	Rev. C. H. Griffith, F. M. S.
Thurso	.....	.....	29.54	750.3	44	6.7	.....	WSW	.....	.....	4	.....	4	.....	.....	.....	.....	D. clouds	John Trotter.
Truro, Royal Institution	.....	.....	30.15	765.8	53	11.7	.....	NW	.....	.....	4	.....	6	.....	.....	.....	.....	D. clouds	W. Newcombe.
Valencia, Observatory	.....	.....	30.10	764.5	49.0	9.4	.....	W	16	7.2	.....	.....	8	.....	.....	.....	.....	D. clouds	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Henry Mercer.
Cape Good Hope, Obs'y	30.16	766.1	30.20	767.1	72.9	22.7	47	SSE	28	12.5	.....	0	0	.....	.....	.....	.....	.....	The Staff, for E. J. Stone.
Hobart Town, (Tasmania)	.....	.....	30.00	762.0	49.5	9.7	59	SW	.....	.....	2	.....	8k	.....	.....	0.03	0.8	.....	Francis Abbott, F. R. A. S.
Leith, Restalrig Park	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Andrew Gibb.
Mauritius, Observatory	29.87	758.7	30.06	763.5	75.5	24.2	54	ESE	14.5	6.5	.....	0	3	.....	SE	0	0	Fine	C. Meldrum.
Melbourne, Observatory	30.19	766.8	30.28	769.1	52.6	11.4	72	SE	6	2.7	.....	.....	10	.....	W	0	0	Dull	R. L. J. Ellery.
Monach L't-house, (Hebrides)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Youngclause.
North Unst, (Shetland Is.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Robert Burnet.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.07 m.; Fort Napier, 2,200 ft., or 670.6 m.

Marine Series. Vessels.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea or swell. Height scale 0—9	Sea or swell. Direction from—	Weather.	Observer.
S. S. Algeria, N. 43° 40′, W. 47° 30′	.....	.....	30.43	772.9	54	12.2	.....	SSW	.....	.....	2	.....	8	.....	SW	0*	.....	D. clouds	Capt. W. Watson.
S. S. Batavia, N. 43° 20′, W. 49° 45′	.....	.....	30.37	771.4	46	7.8	.....	S	.....	.....	4	.....	8	.....	.....	3	S	D. clouds	Capt. J. E. Mouland.
Ship Camperdown	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. A. T. Miller.
Brig Catherine	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. Adam Smith.
Barque Celeste	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. D. F. McKechnie.
S. S. Hibernia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. W. R. Cato
Barque Maroon	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. A. T. Brown.
Ship Mikado	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. C. C. Prehn.
S. S. Seine	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. H. Manning.
Barque Sorata	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. Jas. J. Price.
Schooner Traveller	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. Alex Simpson.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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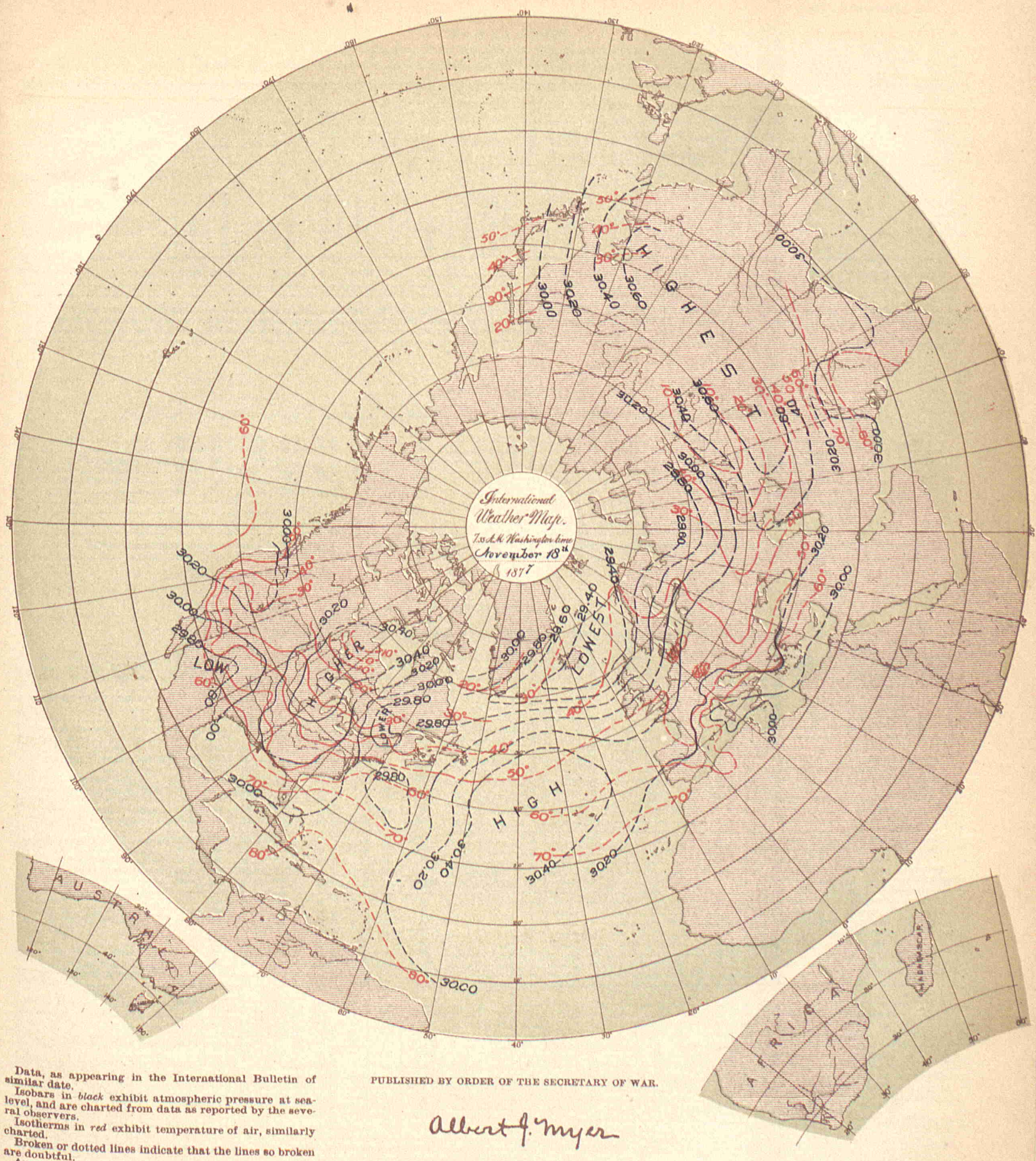
NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation The barometers and thermometers used by these observers have been generally carefully compared and corrected. *Feet.



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
San José	26.18	665.0	.....	*.....	69.4	20.8	92	NE	.....	.....	1	8s	1ks	E	NE	Blank	Blank	.....	Federico Maison.
.....																			
.....																			

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	30.06	763.4	30.10	764.6	42.1	5.6	91	SW	.....	.....	2	.....	10	.....	.....	.....	.....	.....	.....
Fanöe	29.98	761.5	30.00	762.0	43.7	6.5	88	S	.....	.....	4	.....	9	.....	.....	.....	.....	.....	.....
Godthaab, (Greenland)	30.00	762.1	30.05	763.2	13.1	—10.5	83	ENE	.....	.....	2	.....	1	.....	.....	.....	.....	.....	.....
Stykkisholm, (Iceland)	29.52	749.9	29.57	751.0	28.2	— 2.1	96	NE	.....	.....	2	.....	5	.....	.....	.....	.....	.....	.....
Thorshavn, (Faröe)	29.25	743.0	29.29	743.9	38.3	3.5	92	SSW	.....	.....	2	.....	5	.....	.....	.....	.....	.....	.....
Vestervig	29.71	754.7	29.88	759 0	43.5	6.4	88	SSW	.....	.....	6	.....	8	.....	.....	.....	.....	Raining	.....
.....																			
.....																			
.....																			
.....																			

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

Alençon, Normal School	29.71	754.7	30.26	768.7	48.2	9	86	SW	.....	.....	1	.....	10	.....	.....	0	0	Covered	Collignon, Director.
Amiens, Normal School	30.03	762.8	30.14	765.6	48.9	9.4	86	ESE	.....	.....	2	.....	5	.....	W	0	0	Cloudy	Bonvarne, Director.
Avignon, Normal School	30.07	763.8	30.15	765 8	53.2	11.8	65	NNE	.....	.....	1	.....	0	.....	.....	0	0	Very clear.	Mr. Giraud, Director.
Bar-sur-Seine	29.64	752.8	30.23	767.7	48.7	6.5	79	SE	.....	.....	1	.....	10	.....	.....	0	0	Covered	C. Saillard.
Beaumette Obs'y (Angers)	30.05	763.3	30.31	767.4	49.8	9.9	84	E	0	0	.....	.....	.....	S	0	0	.....	.....	Albert Cheux.
Beauvais	29.92	759.9	30.21	767.3	48.6	9.2	84	S	.....	.....	1	.....	8	.....	W	0	0	Very cloudy	Normal School.
Besançon	29.33	744.9	30.26	768.3	42 8	6	85	E	.....	.....	3	.....	10	.....	.....	0	0	Covered	Normal School.
Bourg-en-Bresse	29.31	744.5	30.23	767.9	48.3	6.3	79	W	.....	.....	2	.....	10n	.....	SW	0	0	Covered	Normal School.
Bourges, Normal School	29.66	753.3	30.23	767.8	43.5	6.4	85	SW	.....	.....	2	.....	10	.....	W	0	0	Covered	A. Wagner, Director.
Brest, Naval Observatory	29.91	759.8	30.13	765.3	54.9	12.7	86	W	.....	.....	1	.....	10	.....	W	0.079	2.00	.....	The Staff.
Carcassonne, Normal School	29.80	756.8	30.23	767.7	39.9	4.4	93	W	.....	.....	2	.....	10	.....	W	0	0	Covered	Vateau, Director.
Caen	30.10	764.5	30.17	766.4	52.2	11.2	72	NE	.....	.....	1	.....	10	.....	NE	0	0	Covered	Normal School.
Chartres, Normal School	29.65	753.2	30.23	767.9	48.6	9.2	78	SSW	.....	.....	1	.....	10	.....	.....	0.020	0.5	Covered	Lequin, Director.
Châlons-sur-Marne, N. Sch'l	29.87	758.7	30.20	767.0	44.6	7.0	88	Calm	.....	.....	0	.....	10n	.....	.....	0.016	0.4	Covered	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.79	731.3	30.18	766.6	44.1	6.7	77	SW	.....	.....	1	.....	10	.....	.....	0	0	Foggy	Alluard, Director.
Commercy, Normal School	29.31	744.4	30.23	767.7	42.8	6	94	E	.....	.....	2	.....	8	.....	E	0	0	Very cloudy	Dr. Goulet, Director.
Commune de Gréasque*	29.03	737.3	30.17	766.3	60.6	15.9	45	SW	.....	.....	1	.....	0	.....	.....	0	0	Clear	M. Kina.
Grenoble	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Normal School.
La Roche-sur-Yon, N. School	29.97	761.2	30.19	766 8	47.1	8.4	83	NNW	.....	.....	1	.....	10	.....	.....	0	0	Covered	Mouillot, Director.
Le Mans, Normal School	29.90	759.5	30.22	767.5	46.2	7.9	94	NE	.....	.....	2	.....	8	.....	SW	0.010	0.25	Very cloudy	Poirrier, Director.
Lons-Le-Saulnier, N.School	29.33	745.0	30.28	769.1	41.4	5.2	89	N	.....	.....	1	.....	10	.....	.....	0	0	Covered	Pin, Director.
Lorient, Naval Observatory	30.13	765.3	30.23	767.8	54.0	12.2	83	SSW	.....	.....	3	.....	10	.....	.....	0.016	0.4	Covered	T. Carré, Director.
Mâcon, Normal School	29.56	750.8	30.24	768.1	42.4	5.8	94	Calm	.....	.....	0	.....	10	.....	.....	0	0	Covered	M. Marchal, Director.
Metz	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. A. Schuster, Dir.
Mirecourt	29.10	739.2	30.19	766.7	41.7	5.4	88	S	.....	.....	.....	.....	10	.....	N	0	0	Covered	Normal School.
Nismes, Normal School	29.93	760 2	30.13	765.3	62.6	17	61	E	.....	.....	1	.....	0	.....	.....	0	0	Clear	Boyer, Director.
Orleans, Normal School	29.80	756.8	30.19	766.7	47.6	8.6	92	N	.....	.....	1	.....	8	.....	NE	0.063	1.6	Very cloudy	Bernard, Director.
Paris, Observatory	29.98	761.5	30.23	767.8	46.0	7.8	91	WNW	.....	.....	1	.....	10	.....	.....	0.005	0.14	Foggy	National Observatory.
Privas	29.09	738.8	30.17	766.4	48.4	9.1	70	N	.....	.....	1	.....	10	.....	N	0	0	Covered	Normal School
Rochefort, Naval Obs'y	30.20	767.1	30.23	767.9	44.2	6.8	91	E	.....	.....	2	.....	10	.....	.....	0	0	Covered	Lt. Decante, Director.
Rouen, Normal School	30.10	764.6	30.19	766.8	50.7	10.4	76	SW	.....	.....	2	.....	8	.....	S	0	0	Very cloudy	F. Lucard, Director.
Tarbes, Normal School	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	T. Hugues, Director.
Villefranche	29.58	751.3	30.32	770.1	43.7	6.5	91	SE	.....	.....	1	.....	.....	.....	.....	0	0	Misty	Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.76	756.0	29.79	756.7	80.6	27	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0	.....	L'Abbé Marchési.
Marseilles, Observatory	.....	.....	30.13	765.2	63.1	17.3	54	WSW	.....	.....	1	.....	0	.....	.....	0	0	Clear	The Staff.
Mont-Louis	24.96	633.9	30.27	768.9	49.1	9.5	18	E	5.6	2.50	.....	.....	0	.....	.....	0	0	.....	Mr. Falgnère.
Nice	.....	.....	30.12	765.0	59.2	15.1	75	S	.....	.....	.....	.....	1	.....	S	0	0	Clear	Dr. A. Niepce.
Paris, Montsouris Obs'y	29.88	759.0	30.19	766.9	46.5	7.5	94	WNW	.....	.....	1	.....	10	.....	.....	Inap.	Inap.	.....	Marié Davy, Director.
Perpignan	.....	.....	30.15	765.8	54.7	12.6	58	SW	3.7	1.67	.....	.....	0	.....	.....	0	0	.....	Dr. Fines.
Pic du Midi, (Summit,) H. P.	21.35	542.3	.....	.....	44.2	6.8	.....	SE	.....	.....	1	.....	0	.....	.....	.....	.....	Clear	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.60	574.0	.....	.....	50.4	10.2	.....	Calm	.....	.....	0	.....	0	.....	.....	0	0	Clear	Gen'l de Nansouty.
Saint Maur, (near Paris)	30.04	762.9	30.20	767.1	46.8	8.2	90	WNW	.....	.....	1	.....	10	.....	WNW	0	0	.....	E. Renou.
Toulouse, Observatory	29.52	749.7	30.24	768.2	41.5	5.3	90	S	.....	.....	1	.....	10	.....	.....	0	0	.....	The Staff.
Tours	30.13	765.4	30.21	767.4	46.9	8.3	86	E	.....	.....	1	.....	10	.....	.....	0	0	Foggy	C. Marquet.
Versailles, (near Paris)	.....	.....	30.20	767.1	46.0	7.8	91	NW	.....	.....	1	.....	10	.....	.....	0.009	0.24	Light fog	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.52	775.3	30.55	775.9	41.9	5.5	67	NNW	10.5	4.7	.....	.....	10kn	.....	.....	0.201	5.1	Covered	Marc Dechevrens, S. J.
.....																			
.....																			
.....																			
.....																			

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; for Montsouris, the barometer reduced to freezing but not to sea-level. At Mirecourt the cloud direction is apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg																			
Berlin	30.04	763.0	30.21	767.3	43.5	6.4	87	S			1		10						Prof. Dr. Hoh.
Breslau	29.73	755.2	30.27	768.8	43.3	6.3	91	SSE			2		10			0.011	0.28		Prof. Arndt.
Carlsruhe	29.74	755.5	30.19	766.7	43.9	6.6	79	SW			1		10			0	0		Royal University Obs'y
Cassel	29.65	753.0	30.26	768.5	43.9	6.6	92	E			1		10	SSW		0	0		Albert Senz.
Crefeld	29.97	761.3	30.13	765.4	47.5	8.6	92	W			1		10			0	0		Dr. H. Möhl.
Emden	30.17	766.3	30.21	767.2	40.6	4.8	94	W			0		10			0.04	1.	Foggy	Director Lose.
Frankfort on the Main	29.85	758.3	30.23	767.9	45.3	7.4		S			1		10			0	0		Prof. Prestel.
Friedrichshafen	28.74	730.1	30.22	767.6	43.9	6.6	80	SSW			1		8	S		0	0		Physical Society.
Hamburg	30.07	763.8	30.14	765.6	36.3	2.4	100	S			3		10			0.008	0.2	Foggy	M. Wilhelm.
Kiel	30.10	764.5	30.11	764.9	37.9	3.3	92	SSE			2		10			0.004	0.11		Captain F. Hegemann.
Königsberg, (Prussia)	30.18	766.6	30.26	768.6	41.0	5.0	87	W											Prof. G. Karsten.
Köslin			30.21	767.4	38.8	3.8		S			4		4			0	0		Fair
Leipsic, Observatory	29.81	757.2	30.24	768.2	43.9	6.6	93	SE			1		10			0	0		Prof. E. Luther.
Memel, Naval School	30.19	766.9	30.24	768.1	45.5	7.5	83	W			2		8s;ks						H. Müller.
Neufahrwasser	30.26	768.6	30.28	769.0	44.8	7.1	71	SSW			2		9			0	0		Reinbrecht von Skalweit.
Posen	29.99	761.7	30.29	769.4	40.1	4.5	82	SW			2		10					Covered	A. Lothes.
Strassburg Obs., (in Alsace	29.65	753.2	30.22	767.5	44.1	6.7	72	Calm			0		10			0	0		Dr. Magener.
Stuttgart	29.22	742.1	30.19	766.8	41.9	5.5	74	SW			1		10			Blank	Blank		Dr. Schur.
Treves, (Trier)	29.53	750.1	30.06	763.4	46.2	7.9	81	NE			2		10			0	0	Foggy	Prof. Schoder.
Weissenburg, (Bavaria)	28.66	728.0	30.23	767.7	39.4	4.1	79	S	3	1.5			10			0	0	Covered	Prof. Flesch.
Wustrow, Naval School	30.20	767.1	30.23	767.8	38.5	3.6	91	SSE			4		5					Fair	Dr. Von Bébber.
German Naval Series.																			E. F. Schütz.

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet: Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4, Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.83	757.7	30.23	767.8	57.4	14.1		NE										½ clear	Dr. J. F. J. Schmidt.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and wind-force; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.98	761.4	30.03	762.8	80.6	27.0	74	WSW	16.0?	7.2?			3			0	0	D. clouds	
Deesa	29.56	750.8	30.04	762.9	85.4	29.7	32	N					1	SW		0	0	D. clouds	
Bombay	29.90	759.6	29.94	760.5	83.9	28.8	73	NW	15.0	6.7			0			0	0	Blue sky	
Poona	27.95	710.0	29.95	760.8	81.3	27.4	47	ESE					2			0	0	D. clouds	
Lahore	29.28	743.7	30.04	763.0	71.5	21.9	60	E	2.6	1.2			8			0	0	Cloudy	
Belgaum	27.43	696.7	29.97	761.2	77.9	25.5	59	E	2.0	0.9			9		S	0	0	D. clouds	
Bangalore																			
Roorkee	29.08	738.8	29.99	761.8	78.2	25.7	37	NW	1.6	0.7			6			0	0		
Agra	29.43	747.6	30.00	762.0	82.2	27.9	44	N								0	0		
Trichinopoly																			
Nagpur	28.98	736.0	30.03	762.8	77.6	25.3	44	NE	2.7	1.2			3			0	0	D. clouds	
Madras																			
Lucknow	29.63	752.5	30.01	762.1	76.3	24.6	57	NW	1.2	0.5			0			0	0	Blue sky	
Allahabad	29.70	754.3	30.01	762.3	75.1	23.9	62	Calm	0.5	0.2			0			0	0	Blue sky	
Patna	29.85	758.1	30.03	762.8	78.5	25.8	55	W	0.8	0.4			0			0	0	Blue sky	
Hazaribagh	27.99	710.9	30.04	762.9	71.8	22.1	46	W	5.6	2.5			0			0	0	Blue sky	
Cuttack	29.95	760.7	30.03	762.8	76.8	24.9	72	N	1.7	0.8			0			0	0	Blue sky	
Calcutta (Alipore)	30.00	762.0	30.02	762.5	73.1	22.8	72	WNW	1.0	0.4			0			0	0	Blue sky	
Goalpara	29.62	752.4	30.02	762.4	76.9	24.9	57	Calm	0.4	0.2			0			0	0	Foggy	
Chittagong	29.93	760.3	30.03	762.7	76.0	24.4	73	N	2.3	1.0			0			0	0	Blue sky	
Sibsagar	29.70	754.4	30.05	763.3	67.0	19.4	86	ENE	0.7	0.3			0			0	0	Blue sky	
Rangoon																			
Jubbulpore	28.66	727.9	30.05	763.2	75.0	23.9	65	NE	1.7	0.8			0			0	0	Blue sky	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,892.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	22.28	565.9	30.16	766.1	38.1	3.4	41	S	.....	.....	1	.....	0	.....	.....	0	0	.....	Ab. Dom. Morgini.
Stelvio	22.26	565.5	30.17	766.3	35.6	2.0	.....	SSE	.....	.....	1	.....	0	.....	.....	0	0	.....	Signora Ernesta Manfredi.
Udine	29.77	756.2	30.19	766.7	49.5	9.7	46	E	3.1	1.4	.....	.....	0	.....	.....	0	0	.....	Prof. Giovanni Clodig.
Padua	30.08	763.9	30.19	766.7	49.1	9.5	63	N	7.4	3.3	.....	.....	9	.....	.....	0	0	.....	Prof. Dott. Lorenzoni.
Vicenza	29.98	761.6	30.18	766.6	50.5	10.3	48	NE	0.7	0.3	.....	.....	0	.....	.....	0	0	.....	Conte Alm. Da Schio.
Verona	29.94	760.4	30.16	766.1	62.4	16.9	73	SW	0	0	.....	.....	0	.....	.....	0	0	.....	Dott. B. Bertoncelli.
Bergamo	28.80	731.4	30.13	765.3	48.2	9.0	89	SE	.....	.....	1	.....	10	.....	.....	0	0	.....	Prof. Trionfini Carlo.
Domodossola	29.11	739.4	30.16	766.1	48.6	9.2	82	Calm	.....	.....	0	.....	0	.....	.....	0	0	.....	Prof. Giuseppe Calza.
Milan	29.69	754.0	30.21	767.4	50.4	10.2	.....	SSE	.....	.....	2	.....	10	S	.....	0	0	.....	Ab. Gio. Capelli.
Pavia	29.85	758.2	30.21	767.2	47.3	8.5	89	NE	.....	.....	1	.....	10	.....	.....	0	0	.....	Prof. Gio. Cantoni.
Moncalieri	29.29	743.9	30.21	767.3	47.1	8.4	87	ESE	0	0	.....	.....	10	.....	.....	0	0	.....	Prof. P. F. Denza.
Mondovi	28.25	717.5	30.19	766.8	42.1	5.6	88	NW	.....	.....	2	.....	10	.....	.....	0	0	.....	Prof. D. C. Bruno.
Porto Maurizio	29.92	760.0	30.15	765.7	59.5	15.3	64	SSE	.....	.....	2	.....	0	.....	.....	0	0	.....	Prof. L. Vassallo.
Genoa	29.95	760.8	30.12	765.1	61.0	16.1	38	NE	1.8	0.8	.....	.....	0	.....	.....	0	0	.....	Prof. G. M. Garibaldi.
Piacenza	29.95	760.7	30.21	767.3	45.0	7.7	91	NE	1.3	0.6	.....	.....	10	.....	.....	0	0	.....	Dott. G Manzi.
Parma	29.88	759.0	30.21	767.3	49.1	9.5	80	NNE	.....	.....	4	.....	1	.....	.....	0	0	.....	Prof. P. Pigorini.
Florence	29.85	758.1	30.11	764.7	57.7	14.3	58	E	.....	.....	2	.....	0	.....	.....	0	0	.....	Cav. F Meucci.
Leghorn	30.00	762.1	30.11	764.8	59.4	15.2	66	NE	7.4	3.3	.....	.....	0	.....	.....	0	0	.....	Prof. P. Monte.
Siena	28.90	734.0	30.11	764.8	56.5	13.6	69	SE	3.1	1.4	.....	.....	0	.....	.....	0	0	.....	Prof. L. Toscani.
Urbino	28.64	727 4	30.21	767.2	46.2	7.9	84	NE	.....	.....	2	.....	10	.....	.....	0	0	.....	Prof. P. Serpieri.
Pesaro	30.15	765.9	30.21	767.2	51.1	10.6	77	N	13.0	5.8	.....	.....	10	.....	.....	0	0	.....	Prof. Luigi Guidi.
Ancona	30.08	764.0	30.19	766.7	55.2	12.9	70	NNW	.....	.....	4	.....	10	.....	.....	0	0	.....	Prof. F. DeBosis.
Grosseto	30.00	762.0	30.11	764.8	62.2	16.8	52	N	.....	.....	2	.....	3	SE	.....	0	0	.....	Avv. P. Ponticelli.
Rome	29.93	760.3	30.11	764.8	62.1	16.7	67	NNW	0.7	0.3	.....	.....	0	.....	.....	0	0	.....	Prof. P. A Secchi.
Naples, O. U.	29.91	759.8	30.11	764.8	66.6	19.2	53	NNE	.....	.....	2	.....	3	SSE	.....	0	0	.....	Prof. L. Palmieri.
Lecce	.....	.....	.....	.....	61.2	16.2	67	E	1.8	0.8	.....	.....	7	.....	.....	0	0	.....	Prof. C. De Giorgi.
Cosenza	.....	.....	.....	.....	56.3	13.5	75	NW	3.1	1.4	.....	.....	10	.....	.....	0.205	5.2	.....	Prof. F. D. Conti.
Cagliari	29.78	756.4	29.97	761.2	60.8	16.0	96	Calm	.....	.....	0	.....	10	.....	.....	1.047	26.6	.....	Prof. A. Pacinotti.
Riposto, (Sicily)	29.97	761.1	30.01?	762.3?	62.1	16.7	90	ESE	.....	.....	4	.....	10	NW	.....	1.421	36.1	.....	Prof. F. Caffero.
Palermo	29.73	755.1	29.98	761.5	62.2	16.8	78	Calm	0	0	.....	.....	10	.....	.....	0.339	8.6	.....	Prof. G. Cacciatore.
Caltanissetta	28.05	712.5	30.00?	761.9?	55.4	13.0	92	E	.....	.....	2	.....	10	.....	.....	0.571	14.5	.....	Prof. A. Pagani.
Syracuse	29.89	759.2	29.97	761.1	65.5	18.6	90	ESE	.....	.....	2	.....	10	SE	.....	1.268	32.2	.....	Prof. V. Giuliano.
SUB-SERIES.																			
Naples, S. R.	29.57	751.0	30.12	765.1	63.0	17.2	56	NE	4.9	2.2	.....	.....	3	.....	.....	0	0	.....	Prof. F. Brioschi.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,543.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Siena, 348.5 m., or 1,143.3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Tokei (Yeddo)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	The Observatory.
Tokei (Yeddo) University	29.76	755.8	29.86	758.4	60.7	10.4	89	W	1	0.4	.....	2cs	.....	W	.....	0	0	Fair	Prof P. V. Veeder.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the coöperation of Señor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Aguascalientes	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	I. N. Marin, M. D.
Córdoba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	C. Peña, M. D.
Cuernavaca	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	L. Castillo, A. E.
Guadalajara	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. L. Perez.
Guanajuato	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. V. Fernandez.
Leon	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. M. Leal.
Mexico	29.12	587.3	30.22	767.7	46.0	7.8	81	Calm	0	0	.....	0	0	.....	.....	0	0	Blue sky	Central Observatory.
Orizaba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	N. N.
Orizaba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	I. Orozco, M. D.
Pabellon, (Aguascalts)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. V. de Leon, M. E.
Puebla	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. B. Gonzalez.
Toluca	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. C. Velazquez.
Tlacotalpam	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. F. R. Bayly.
San Luis Potosi	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	G. Barroeta, M. D.
Vera-Cruz	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. J. Rossell.
Zacatecas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. A. Bonilla, M. E.
Puebla, (Catholic Institute)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	P. Spina. (M. M. D. D.
Morelia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Tena, F. L. Páramo.

NOTE.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,290 m., or 7,512.9 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,921.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m,, or 8,611.8 ft.; San Luis Potosí, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	30.15	765.7	30.15	765.7	44.2	6.8	.....	SSW	.....	.....	3	.....	.....	.....	.....	0.008	0.2	.....	
Groningen	30.05	763.2	30.10	764.6	40.6	4.8	.....	SW	.....	.....	1	.....	.....	.....	.....	0.016	0.4	.....	
Helder	30.06	763.5	30.06	763.5	46.2	7.9	.....	SSW	.....	.....	3	.....	.....	.....	.....	0.047	1.2	.....	
Hellevoetsluis	.....	.....	30.13	765.4	43.5	6.4	91	WSW	.....	.....	4	.....	.....	.....	.....	.....	.....	.....	
Utrecht	30.09	764.3	30.14	765.5	42.6	5.9	90	SW	.....	.....	2	.....	10	.....	.....	0	0	Dull	H. v d Brink.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	29.56	750.8	29.61	752.2	45.3	7.4	94	S	35.3	15.8	.....	.....	10	.....	.....	0.677	17.2	Raining.....	
Brönö	29.42	747.2	29.46	748.2	45.0	7.2	61	SW	18	8	.....	.....	10	.....	.....	0	0	.....	
Christiania	29.65	753.2	29.80	756.9	43.0	6.1	84	SSW	16	7	.....	.....	9	.....	.....	0	0	.....	
Tromsö	29.36	745.8	29.41	746.9	39.6	4.2	74	SW	4	2	.....	.....	10	.....	.....	0.189	4.8	.....	
.....																			

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	30.33	770.4	30.52	775.3	59.2	15.1	80	N	5.6	2.5	.....	.....	3	.....	.....	0	0	.....	Dr. J. A. Sampaio
Campo Major	29.16	740.6	30.18	766.6	62.6	17.0	59	ESE	2.5	1.1	.....	.....	0	.....	.....	0	0	.....	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.05	763.2	30.13	765.4	71.4	21.9	42	ENE	8.7	3.9	.....	.....	2	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.83	757.6	30.19	766.7	61.2	16.2	65	NNE	4.9	2.2	.....	.....	0	.....	.....	0	0	.....	The Staff.
Ponta Delgada, (Azores)	30.40	772.1	30.47	773.9	62.6	17.0	70	NE	6.9	3.1	.....	.....	3	.....	.....	0	0	.....	
.....																			
.....																			

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 9 h. 6 m., p. m. *Probably 30.41 in., and 772.3 mm.

Naval Series. Vessels.	Sea or swell. Height scale 0–9	Sea or swell. Direction from—	
S. S. India.			{ A. D. Pedroso, Com'd't. Lt. S. A. P. de Mirando
.....			
.....			

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.87	758.6	30.31	769.8	41.7	5.4	75	ESE	4	2	.....	.....	10	.....	.....	.....	.....	.....	Astronomical Obs.
Wilna	29.84	758.0	30.28	769.1	42.1	5.6	93	SW	4	2	.....	.....	10	.....	.....	.....	.....	Heavy clouds	Astronomical Obs.
Dorpat	29.86	758.4	30.11	764.8	40.3	4.6	96	W	9	4	.....	.....	7	.....	.....	.....	.....	.....	Prof. Dr. Weihrauch
St. Petersburg	29.94	760.6	29.96	760 9	41.6	5.3	84	WNW	13	6	.....	.....	3	.....	.....	.....	.....	.....	Central Physical Obs.
Kuopio	29.47	748.6	29.80	757.0	34.5	1.4	89	W	13	6	.....	.....	0	.....	.....	.....	.....	.....	Ch. Forsten.
Kieff	29.63	752.7	30.30	769.7	35.4	1.9	91	N	4	2	.....	.....	10	.....	.....	.....	.....	Dust-haze...	Physical Cabinet.
Nikolaiev	30.31	769.8	30.38	771.6	36.0	2.2	82	NNW	0	0	.....	.....	10	.....	.....	.....	.....	.....	Kurdakof.
Kertch	30.32	770.2	30.34	770.7	43.0	6.1	81	N	4	2	.....	.....	6	.....	.....	.....	.....	.....	Lagorio.
Moscow	29.56	750.9	30.13	765.4	36.1	2.3	80	S	7	3	.....	.....	5	.....	.....	.....	.....	.....	Meteorological Obs.
Lugan	30.07	763.8	30.29	769.3	29.5	— 1.4	78	SW	2	1	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Archangel	29.55	750.6	29.57	751.1	35.6	2 0	93	W	18	8	.....	.....	10	.....	.....	.....	.....	.....	Ogorodnikof.
Tiflis	28.90	734.1	30.37	771.4	42.6	5.9	71	E	4	2	.....	.....	10	.....	.....	.....	.....	.....	Physical Observatory.
Astrakhan	30.48	774.1	30.39	772.0	34.2	1.2	65	NE	2	1	.....	.....	10	.....	.....	.....	.....	.....	Sebastianof.
Kasan	29.63	752.7	29.91	759.8	34.0	1.1	94	SW	9	4	.....	.....	10	.....	.....	.....	.....	.....	Physical Cabinet.
Orenburg	29.92	760.0	30.32	770.2	22.5	— 5.3	59	NE	9	4	.....	.....	0	.....	.....	.....	.....	.....	Tschernischef.
Ekaterinburg	28.87	733.3	29.87	758.7	21.0	— 6.1	85	WSW	18	8	.....	.....	10	.....	.....	.....	.....	Snowing.....	Meteorological Obs.
Nukuss	30.25	768.4	30.50	774.8	27.7	— 2.4	67	NE	7	3	.....	.....	8	.....	.....	.....	.....	.....	
Kasaly	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Bobrof.
Tashkend	28.84	732.5	30.07	779.1	28.4	— 2.0	84	Calm	0	0	.....	.....	8	.....	.....	.....	.....	.....	Michelson.
Barnaul	29.89	759.1	30.47	774.0	5.0	—15.0	87	W	0	0	.....	.....	8	.....	.....	.....	.....	Light clouds	Meteorological Obs.
Yeniseisk	29.89	759.2	30.24	768.0	18.1	— 7.7	78	S	2	1	.....	.....	7	.....	.....	.....	.....	.....	Marks.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Usolzef.
Oorga	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Mossin.
Peking, (China)	30.58	776.7	30.72	780.2	24.1	— 4.4	35	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Physical Observatory.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nikolaievsk, on the Amoor	.....	.....	.....	.....	19.9	— 6.7	92	Calm	0	0	.....	.....	10n	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Ekaterinburg, 306.4? m., or 1,005.2? ft.; Tashkend, 494.3? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft. *Published as given—reason for asterisk unknown.

SPANISH SERIES.

Furnished by the cooperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Rave, Director.
Bilbao, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Manuel de Naveran
Burgos, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Domingo Martin y Perez.
Madrid, Royal Observatory	27.93	709.4	30.21	767.2	55.4	13.0	66	S	0.7	0.33	.....	0	0	.....	.....	0	0	Clear.....	The Staff.
Murcia, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Olayo Diaz, Director.
Santiago, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.98	761.4	30.04	763.1	73.8	23.2	88	NNE	0	0	.....	.....	10n	.....	.....	0.091	2.3	Raining.....	Benito Vines, S. J.
San Fernando, Naval Obs'y.	30.06	763.6	30.16	766.0	68.7	20.4	45	ENE	9.4	4.2	.....	0	0	.....	.....	0	0	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.	.....	.....	29.80	756.8	80.2	26.8	91	SE	0	0	.....	6s	2k	.....	.....	0	0	D. clouds....	Leonardo de Tejeda, Chief of Engineers.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

1877—November 18.

Furnished by the cöoperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.63	752.5	29.67	753.5	32.0	0.0	.....	SW	.....	.....	2	.....	5	.....	.....	0	0	.....	
Umea	29.70	754.3	29.75	755.6	33.4	0.8	92	Calm	.....	.....	0	.....	10	.....	.....	0	0	.....	
Hernosand	29.73	755.1	29.78	756 4	36.3	2.4	77	SSW	.....	.....	4	.....	9	.....	.....	0	0	.....	
Stockholm	29.80	757.0	29.98	761.5	41.5	5.3	83	WSW	.....	.....	2	.....	5	.....	.....	0	0	.....	
Wisby	30.05	763.3	30.11	764.8	41.4	5.2	90	SW	.....	.....	6	.....	5	.....	.....	0	0	.....	
Sub-Series.																			
Upsala	29.87	758.8	29.95	760.7	40.1	4.5	93	SSW	11.4	5.1	.....	.....	9	.....	.....	0.008	0.19	.....	Dr. Hildebrandsson.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the cooperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.76	730.4	30.22	767.6	41.5	5.3	78	N	.....	.....	1	.....	10	.....	.....	0	0	Covered	The Observatory.
Zurich	28.54	724.9	30.23	767.7	40.6	4.8	86	SE	.....	.....	1	.....	10	.....	.....	0	0	Cov. red	The Observatory.

Note.—For Geneva the corresponding departures from the normal values are: Barometer, +3.9 m m; Thermometer, —1.1 cent.; Relative Humidity, +1 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	30.28	769.0	51.8	11.0	56	NE	14	6.5	.....	.....	7	.....	NE	0	0	.....	The Observatory.
Fao, (Persian Gulf)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salonica	.....	.....	30.34	770.6	57.6	14.2	.....	NW	.....	.....	1	.....	5	.....	.....	.....	.....	.....	B. Stefanides.
Valona	.....	.....	30.20	767.0	65.1	18.4	.....	W	.....	.....	1	.....	2	.....	.....	.....	.....	.....	A. Bertrand.
Varna	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0	Slightly cl'dy	Imperial Observatory.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.96	761.0	30.08	764.0	68.0	20.0	49	N	.....	.....	1	.....	4c	.....	.....	0	0	D. clouds	Prof. C. V. A. Van Dyck

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Brockville, Ontario	.....	.....	29.84	757.9	33	0.6	.....	W	10	4.5	.....	.....	10s	.....	W	0.22	5.6	Light snow	Hon. J. Ferguson.
*Chatham, N. B	.....	.....	29.94	760.5	39	3.9	95	NE	3	1.3	.....	.....	10s	.....	Calm	0	0	Cloudy	W. R. Bigg.
Charlottetown, P. E. Island	.....	.....	29.94	760.5	42	5.6	86	NE	10	4.5	.....	.....	10ks	.....	Calm	0	0	Cloudy	G. A. Blair.
Cornwall, Ontario	29.53	750.0	29.72	754.9	38.3	3.5	75	SW	.....	.....	4	.....	10s	.....	.....	0.234	5.94	Cloudy	H. J. Cundall, C. E.
Dalhousie, N. B	29.50	749 3	.....	.....	33.3	0.7	97	.....	.....	.....	.....	.....	.....	.....	.....	0	0	Misty	James Smith, M. A.
Esquimault, B. C	29.87	758.7	29.91	759.7	49.3	9.6	96	Calm	.....	.....	.....	.....	10	.....	.....	2.15	54.6	Heavy rain	H. A. Johnson.
*Father Point, Quebec	.....	.....	29.93	760.2	32	0.0	90	NE	30	13.4	.....	.....	10n	.....	E	0	0	Threatening	W. H. Bevis.
Fredericton, N. B	29.88	758.9	29 95	760.7	36.3	2.4	97	N	1.0	0.4	.....	.....	10	.....	.....	0.020	0.51	Raining	J. McWilliams.
*Fort Garry, Manitoba	.....	.....	30.48	774.2	10	—12.2	89	S	6	2.7	.....	0	2ks	.....	S	0	0	Fair	Prof. Harrison.
Goderich, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	James Stewart.
Granton, Ontario	29.12	739.6	30.27	768.8	31.8	— 0.1	92	N	.....	.....	4	1cs	0	S	.....	0	0	Clear	H. J. Strang, M. A.
*Halifax, N. S	29.74	755.4	29.87	758.7	47	8.3	99	N	4	1.8	.....	.....	Fog	.....	.....	0.132	3.35	Light rain	James Grant.
Hamilton, Ontario	29.64	752.8	30.04	763.0	35.7	2.1	99	W	.....	.....	5	10s	.....	W	.....	0	0	Cloudy	F. Allison, M. A.
Heart's Content, N. F	30.05	763.3	30.07	763.8	46	7.8	100	SW	.....	.....	1	.....	10	.....	.....	1.95	49.5	Overcast	Geo. Dickson, M. A
*Kingston, Ontario	29.68	751.3	29.93	760.2	33	0.6	86	W	14	6.3	.....	2cs	8ks	W	W	0.21	5.3	Cloudy	E. Weedon.
Little Glace Bay, N. S	29.80	756.9	29.84	757.9	41.0	5.0	100	E	4	1.8	.....	.....	Fog	.....	.....	1.07	27.2	Fog & mist	S. Woods, M. A.
*Montreal, Quebec	29.52	749.8	29.73	755.1	40	4.4	73	W	19	8.5	.....	.....	10s	.....	W	0.24	6.1	Cloudy	C. H. Rigby.
*Parry Sound, Ontario	29.43	747.5	30.17	766.3	25	— 3.9	87	NW	22	9.8	.....	2cs	2ks	NW	NW	0.14	3.6	Fair	C. H. McLeod, C. E.
Peterboro, Ontario	29.23	742.4	30.02	762.5	28.8	— 4.0	82	NW	.....	.....	6	.....	10ks	.....	.....	0	0	.....	Rev. R. Mosley.
Port Dover, Ontario	29.62	749.8	30.24	768.1	35	1.7	70	NW	22	9.8	.....	10k	0	NW	.....	0.03	0.8	Cloudy	J. F. Jeffers, B. A.
Port Hastings, N. S	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	H. Morgan.
Port Stanley, Ontario	29.59	751 6	30.27	768.8	35	1.7	71	W	20	8.9	.....	.....	10ks	.....	NW	Inap.	Inap.	Light snow	Peter Grant.
*Quebec, Quebec	29.49	749.0	29.62	757.4	34	1.1	100	NE	30	13.4	.....	.....	10n	.....	NE	0.10	2.5	Heavy snow	M. Payne.
*Rockliffe, Ontario	29.40	746.7	29.88	758 9	27	— 2.8	94	NW	20	8.9	.....	.....	10n	.....	.....	0.25	6.3	Light snow	Capt. Ashe, R. N.
St. John, N. B	29.94?	760.5?	29.91?	759.7?	39	3.9	81	N	2	0.9	.....	.....	10ks	.....	.....	0.40	10.2	Cloudy	W. H. McIntyre.
*Saugeen, Ontario	29.51	749.5	30.24	768.1	31	— 0.6	90	NW	19	8.5	.....	.....	10ks	.....	N	0.04	1.0	Cloudy	G. Murdock, C. E.
Stayner, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Inap.	Inap.	.....	K. Stewart.
Stratford, Ontario	28.94	735.1	30.28	769.1	30.7	— 0.7	91	NW	20.0	8.9	.....	.....	5ks	.....	.....	0.153	3.89	Fair	R. J. Cole.
*Sydney, C. B	29.88	758.9	29.91	759.7	42	5.6	97	N	7	3.1	.....	.....	10n	.....	.....	0.83	21.1	Light rain	C. J. MacGregor, M. A.
*Toronto, Ontario	29.76	755.9	30.16	766.1	32	0.0	89	W	24	10.7	.....	.....	10ks	.....	NW	0.04	1.0	Cloudy	T. C. Hill.
Windsor, N. S	29.79	756.7	29.88	758.9	46.2	7.9	99	NE	3	1.3	.....	.....	10n	.....	.....	0.11	2.8	Fair	Magnetic Observatory.
Woodstock, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. John E. Oram.
Sub-Series.																			J. Montgomery.
St. Johns, Newfoundland	.....	.....	.....	.....	52.0	11.1	100	S	.....	.....	.....	.....	10n	.....	.....	0.48	12.2	Showery	John Delany

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	BAROMETER. Corrected for instrum'tal error and temperature. Inches.	BAROMETER. Corrected for instrum'tal error and temperature. Millimeters.	BAROMETER. Reduced to sea-level. Inches.	BAROMETER. Reduced to sea-level. Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Upper. From—	CLOUDS. Direction. Lower. From—	RAIN-FALL, OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL, OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	WEATHER.	OBSERVER.
Albany, New York	29.71	754.6	29.94	760.5	41	5.0	63	W	24	10.7	.....	0	5s	.....	Calm	Inap.	Inap.	Fair	
Alpena, Michigan	29.67	753.6	30.36	771.1	29	— 1.7	78	NW	12	5.4	.....	.....	10ks	.....	NW	0.05	1.3	Cloudy	
Atlantic City, New Jersey	29.97	761.2	29.99	761.7	48	8.9	92	W	5	2.2	.....	0	Sm'e	.....	.....	0	0	Clear	
Augusta, Georgia	30.02	762.5	30.22	767.6	47	8.3	92	NW	4	1.8	.....	0	Sm'e	.....	NW	0	0	Smoky	
Baltimore, Maryland	30.05	763.3	30.10	764.5	50	10.0	44	NW	16	7.2	.....	0	Haze	.....	Calm	0	0	Clear	
Barnegat, New Jersey	29.96	761.0	29.98	761.5	49	9.4	85	NW	12	5.4	.....	0	0	.....	.....	0.02	0.5	Clear	
Bismarck, Dakota	28.41	721.6	30.18	766.6	29	— 1.7	89	S	11	4.9	.....	.....	10s	.....	SE	0.01	0.3	Cloudy	
Boise City, Idaho	27.49	698.2	30.20	767.1	39	3.9	91	N	1	0.4	.....	.....	10s	.....	Calm	0	0	Cloudy	
Boston, Massachusetts	29.67	753.6	29.82	757.4	43	6.1	92	S	7	3.1	.....	.....	10s; fg	.....	SW	0.10	2.5	Cloudy	
Brackettville, Texas	28.80	731.5	29.81	757.2	62	16.7	77	E	6	2.7	.....	.....	10s	.....	E	0	0	Cloudy	
Breckenridge, Minnesota	29.36	745.7	30.44	773.2	23	— 5.0	93	SE	14	6.3	.....	.....	10s	.....	Calm	0	0	Cloudy	
Brownsville, Texas	29.92	760.0	29.99	761.7	67	19.4	94	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Buffalo, New York	29.42	747.3	30.15	765.8	33.5	0.8	65	W	12	5.4	.....	8k	0	NW	.....	0.24	6.1	Clearing	
Burlington, Vermont	29.54	750.3	29.79	756.7	45	7.2	60	W	8	3.6	.....	0	8s	.....	W	0.37	9.4	Fair	
Cairo, Illinois	29.98	761.5	30.39	771.9	42	5.6	66	N	7	3.1	.....	5c	0	Calm	.....	0	0	Fair	
Camp Grant, Arizona	26.03	635.8	29.83	757.7	41	5.0	14	W	.....	.....	1	0	0	.....	.....	0	0	Clear	
Camp Verde, Arizona	26.74	679.2	30.23	767.8	38	3.3	45	N	.....	.....	.....	0	0	.....	.....	0	0	Clear.	
Campo, California	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Cape Hatteras, N. Carolina	30.00	762.0	30.01	762.2	51	10.6	93	NW	5	2.2	.....	0	Haze	.....	Calm	0	0	Clear	
Cape Henry, Virginia	30.02	762.5	30.05	763.3	54	12.2	80	W	7	3.1	.....	0	0	.....	.....	0	0	Clear	
Cape Lookout, N. Carolina	30.10	764.5	30.12	765.0	57	13.9	75	NW	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Cape May, New Jersey	29.99	761.7	30.02	762.5	54	12.2	73	W	24	10.7	.....	0	0	.....	.....	0	0	Clear	
Charleston, South Carolina	30.12	765.0	30.18	766.6	54	12.2	67	W	6	2.7	.....	0	Sm'e	.....	Calm	Inap.	Inap.	Clear	
Cheyenne, Wyoming	24.14	613.1	30.08	764.0	24	— 4.4	88	NW	8	3.6	.....	0	0	.....	.....	0.10	2.5	Clear	
Chicago, Illinois	29.69	754.1	30.43	772.9	32	0 0	79	NW	5	2.2	.....	5k	0	NW	.....	0	0	Fair	
Cincinnati, Ohio	29.68	753.9	30.35	770.9	39	3.9	64	N	4	1.8	.....	0	Fog	.....	N	0	0	Foggy	
Cleveland, Ohio	29.60	751.8	30.36	771.1	37	2.8	50	NW	15	6.7	.....	.....	10s	.....	NW	Inap.	Inap.	Cloudy	
Concho, Texas	28.02	711.7	29.69	754.1	50	10.0	93	E	2	0.9	.....	8c	0	E	.....	0	0	Cloudy	
Corsicana, Texas	29.61	752.1	30.08	764.0	52	11.1	79	SE	1	0.4	.....	Haze	8s	Calm	SE	0	0	Cloudy	
Davenport, Iowa	29.80	756.9	30.49	774.4	33	0.6	79	NE	4	1.8	.....	4ck	0	W	.....	0	0	Fair	
Denison, Texas	29.30	744.2	30.11	764.8	50	10.0	72	SE	5	2.2	.....	5k	0	Calm	.....	0	0	Fair	
Denver, Colorado	24.91	632.7	30.13	765.3	35	1.7	80	N	5	2.2	.....	.....	10s	.....	Calm	0.05	1.3	Cloudy	
Detroit, Michigan	29.65	753.1	30.36	771.1	33	0.6	61	NW	8	3.6	.....	0	8s	.....	NW	0	0	Fair	
Dodge City, Kansas	27.38	695.4	29.67	753.6	46	7.8	77	SE	6	2.7	.....	.....	10s	.....	SE	0	0	Cloudy	
Dubuque, Iowa	29.74	755.4	30.49	774.4	31	— 0.6	89	E	8	3.6	.....	0	5s	.....	Calm	0	0	Fair	
Duluth, Minnesota	29.83	757.7	30.57	776.5	26	— 3.3	88	NE	4	1.8	.....	.....	10s	.....	NE	0	0	Cloudy	
Eagle Pass, Texas	29.17	740.9	29.91	759.7	61	16.1	94	SE	7	3.1	.....	.....	10s	.....	S	0	0	Cloudy	
Eastport, Maine	29.81	757.2	29.87	758.7	41	5.0	91	NE	5	2.2	.....	.....	10s	.....	E	0	0	Threatening	
Erie, Pennsylvania	29.51	749.5	30.25	768.3	37	2.8	62	N	30	13.4	.....	.....	10s	.....	NW	0.48	12.2	Cloudy	
Escanaba, Michigan	29.80	756.9	30.50	774.7	29	— 1.7	77	NW	8	3.6	.....	.....	10s	.....	NW	0.03	0.8	Cloudy	
Florence, Arizona	28.38	719.6	29.93	760.2	42	5.6	42	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Fort Bayard, New Mexico	23.83	605.3	29.83	757.7	33	0.6	34	NE	8	3.6	.....	0	0	.....	.....	0	0	Clear.	
Fort Craig, New Mexico	25.29	642.4	.....	.....	34	1.1	79	SW	2	0.9	.....	.....	10ks	.....	SW	0	0	Cloudy	
Fort Gibson, Indian Ter	29.59	751.6	30.13	765.3	50	10.0	64	E	8	3.6	.....	0	2s	.....	SW	0	0	Fair	
Fort Griffin, Texas	28.74	730.0	30.03	762.7	45	7.2	84	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	28.81	731.8	29.94	760.5	47	8.3	77	S	.....	.....	1	0	2s	.....	W	0	0	Clear	
Galveston, Texas	30.03	762.7	30.07	763.8	66	18.9	94	E	7	3.1	.....	0	2ks	.....	S	0	0	Fair	
Grand Haven, Michigan	29.75	755.6	30.44	773.2	35	1.7	80	NE	4	1.8	.....	.....	10s	.....	Calm	0	0	Cloudy	
Indianapolis, Indiana	29.58	751.3	30.40	772.1	35	1.7	80	Calm	0	0	.....	1cs	0	Calm	.....	0	0	Clear	
Indianola, Texas	30.02	762.5	30.05	763.3	66	18.9	95	SE	10	4.5	.....	2k	0	Calm	.....	0	0	Clear.	
Jacksboro, Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Jacksonville, Florida	30.14	765.5	30.16	766.1	59	15.0	70	NE	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Keokuk, Iowa	29.83	757.7	30.50	774.7	32	0.0	79	E	8	3.6	.....	0	4s	.....	Calm	0	0	Fair	
Key West, Florida	30.02	762.5	30.05	763.3	72.5	22.5	90	NE	12	5.4	.....	8cs	1ks	W	.....	0	0	Cloudy	
Kittyhawk, North Carolina	30.06	763.5	30.08	764.0	53	11.7	93	W	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Knoxville, Tennessee	29.27	743.4	30.31	769.9	42	5.6	74	Calm	0	0	.....	5c	Sm'e	Calm	.....	0	0	Smoky	
La Crosse, Wisconsin	29.73	755.1	30.52	775.2	28	— 2.2	66	N	3	1.3	.....	5ck	0	Calm	.....	0	0	Fair	
La Mesilla, New Mexico	25.86	656.8	30.00	762.0	33	0.6	70	SE	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Laredo, Texas	.....	.....	.....	.....	64	17.8	89	SE	8	3.6	.....	10k	0	Calm	.....	0	0	Cloudy	
Leavenworth, Kansas	29.36	745.7	30.24	768.1	39	3.9	81	SE	7	3.1	.....	5c	0	.....	.....	0	0	Fair	
Los Angeles, California	29.70	754.4	30.04	763.0	54	12.2	43	W	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Louisville, Kentucky	29.77	756.1	30.36	771.1	36	2.2	90	N	7	3.1	.....	0	Fog	.....	Calm	0	0	Clear	
Lynchburg, Virginia	29.44	747.8	30.12	765.0	53	11.7	48	W	4	1.8	.....	0	Haze	.....	Calm	0	0	Hazy	
Maricopa Wells, Arizona	.....	.....	.....	.....	31	— 0.6	38	N	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Marquette, Michigan	29.69	754.1	30.45	773.4	28	— 2.2	78	NW	12	5.4	.....	.....	10s	.....	Calm	0.20	5.1	Cloudy	
Mason, Texas	28.36	720.3	30.12	765.0	53	11.7	73	SE	8	3.6	.....	.....	10s	.....	.....	0	0	Cloudy	
Memphis, Tennessee	29.98	761.5	30.31	769.9	46	7.8	67	NE	6	2.7	.....	1c	Sm'e	SW	Calm	0	0	Clear	
Milwaukee, Wisconsin	29.74	755.4	30.48	774.2	27	— 2.8	77	NW	8	3.6	.....	0	1s	.....	.....	0	0	Clear	
Mobile, Alabama	30.18	766.6	30.23	767.8	49.5	9.7	97	N	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Montgomery, Alabama	30.01	762.2	30.25	768.3	47	8.3	92	Calm	0	0	.....	0	0	.....	Calm	0	0	Foggy	
Morgantown, West Virginia	29.22	742.2	30.31	769.9	39	3.9	55	NW	7	3.1	.....	.....	Fg.;sm. 10s	.....	NW	0	0	Cloudy	
Mt. Washington, N. H.	23.46	595.9	29.82	757.4	27	— 2.8	100	W	57	25.5	.....	.....	10n	.....	W	0.50	12.7	Light snow	
Nashville, Tennessee	29.78	756.4	30.34	770.6	41	5.0	82	NW	1	0.4	.....	5cs	Fog	SW	Calm	0	0	Fair	
New Haven, Connecticut	29.77	756.1	29.89	759.2	52	11.1	86	W	9	4.0	.....	0	2ks;sm.	.....	W; S	0	0	Fair	
New London, Connecticut	29.83	757.7	29.88	758.9	53	11.7	93	SW	5	2.2	.....	0	5s	.....	W	0.10	2.5	Fair	
New Orleans, Louisiana	30.12	765.0	30.18	766.6	56	13.3	87	SE	4	1.8	.....	0	Fog	.....	Calm	0	0	Fair	
Newport, Rhode Island	29.80	756.9	29.85	758.2	53	11.7	86	SW	10	4.5	.....	.....	10ks	.....	SW	0.02	0.5	Threatening	
New York, New York	29.78	756.4	29.95	760.7	49	9.4	71	W	15	6.7	.....	Haze	Haze	.....	.....	0	0	Hazy	
Norfolk, Virginia	30.03	762.7	30.09	764.3	51	10.6	93	W	5	2.2	.....	Haze	Haze	Calm	Calm	0	0	Clear	
North Platte, Nebraska	27.17	690.1	29.82	757.4	36	2.2	80	NE	16	7.2	.....	.....	10s	.....	Calm	0	0	Cloudy	
Olympia, Washington Ter.	29.97	761.2	30.01	762.2	53	11.7	93	SW	6	2.7	.....	.....	10n	.....	Calm	1.53	38.9	Heavy rain	
Omaha, Nebraska	29.10	739.1	30.22	767.6	39	3.9	63	SE	12	5.4	.....	5c	2s	SW	Calm	0	0	Cloudy	
Oswego, New York	29.65	753.1	29.96	761.0	38	3.3	63	W	28	12.5	.....	.....	10s	.....	NW	0.25	6.3	Cloudy	
Pembina, Dakota	29.55	750.6	30.47	773.9	9	—12.8	76	S	9	4.0	.....	.....	10s	.....	Calm	Inap.	Inap.	Cloudy	
Philadelphia, Pennsylvania	29.97	761.2	30.03	762.7	49	9.4	57	NW	16	7.2	.....	0	0	.....	.....	0	0	Clear	
Phœnix, Arizona	.....	.....	.....	.....	48	8.9	36	Calm	.....	.....	.....	5k	0	NW	.....	0	0	Fair	
Pike's Peak, Colorado	17.72	450.1	29.03	760.2	8	—13.3	78	Calm	0	0	.....	.....	10s	.....	Calm	0.04	1.0	Cloudy	
Pioche, Nevada	24.22	615.2	29.99	761.7	25	— 3.9	75	N	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Pittsburg, Pennsylvania	29.42	747.3	30.26	768.6	40	4.4	64	N	6	2.7	.....	10k	0	N	.....	0.03	0.8	Cloudy	
Port Huron, Michigan	29.62	752.3	30.33	770.4	31	— 0.6	79	NW	12	5.4	.....	.....	10ks	.....	NW	0	0	Cloudy	
Portland, Maine	29.78	756.4	29.83	757.7	48	8.9	93	SE	8	3.6	.....	.....	10s	.....	Calm	0.71	18.0	Threatening	
Portland, Oregon	30.14	765.5	30.24	768.1	55	12.8	93	S	9	4.0	.....	.....	10n	.....	Calm	0.17	4.3	Light rain	
Prescott, Arizona	24.76	628.9	30.12	765.0	33	0.6	42	N	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Punta Rassa, Florida	30.08	764.0	30.10	764.5	69	20.6	84	NE	10	4.5	.....	0	5n	.....	E	0	0	Fair	
Red Bluff, California	29.91	759.7	30.28	769.1	48	8.9	71	N	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Rochester, New York	29.40	746.7	30.03	762.7	34	1.1	61	NW	20	8.9	.....	8k	0	NW	.....	0.40	10.2	Fair	
Roseburg, Oregon	29.75	755.6	30.33	770.4	54	12.2	83	S	4	1.8	.....	.....	10s	.....	Calm	0.13	3.3	Cloudy	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	BAROMETER. Corrected for instrum'tal error and temperature. Inches.	BAROMETER. Corrected for instrum'tal error and temperature. Millimeters.	BAROMETER. Reduced to sea-level. Inches.	BAROMETER. Reduced to sea-level. Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Upper. From—	CLOUDS. Direction. Lower. From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	WEATHER.	OBSERVER.
Sacramento, California	30.13	765.3	30.22	767.6	48	8.9	77	N	4	1.8	.....	0	0	.....	.....	0	0	Clear.	
St. Louis, Missouri	29.91	759.7	30.52	775.2	36	2.2	70	N	4	1.8	.....	0	0	.....	.....	0	0	Clear	
St. Marks, Florida	30.17	766.3	30.19	766.8	46	7.8	96	N	3	1.3	.....	0	0	.....	.....	0	0	Clear.	
St. Paul, Minnesota	29.68	761.3	30.46	773.7	28	— 2.2	88	NE	1	0.4	.....	10c	0	Calm	.....	0	0	Cloudy	
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salt Lake City, Utah	25.91	658.1	30.24	768.1	34	1.1	70	N	4	1.8	.....	0	0	.....	.....	0	0	Clear	
San Antonio, Texas	29.34	745.2	29.92	760.0	60	15.6	100	NE	4	1.8	.....	.....	Fog	.....	NE	0	0	Cloudy	
San Diego, California	29.98	761.5	30.06	763.5	53	11.7	60	N	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Sandusky, Ohio	29.66	753.4	30.37	771.4	36	2.2	62	NW	20	8.9	.....	.....	10ks	.....	NW	0	0	Cloudy	
Sandy Hook, New Jersey	29.93	760.2	29.95	760.7	50	10.0	86	W	17	7.6	.....	0	0	.....	.....	0	0	Clear	
San Francisco, California	30.17	766.3	30.23	767.8	52	11.1	86	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Santa Fé, New Mexico	23.08	586.2	29.62	752.3	46	7.8	40	E	16	7.2	.....	Haze	6s	.....	E	0	0	Fair	
Savannah, Georgia	30.10	764.5	30.19	766.8	55	12.8	68	N	3	1.3	.....	0	Fog	.....	.....	0	0	Clear	
Shreveport, Louisiana	29.97	761.2	30.20	767.1	50	10.0	86	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Smithville, North Carolina	30.12	765.0	30.15	765.8	51	10.6	86	NW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Springfield, Massachusetts	29.71	754.6	29.84	757.9	44	6.7	59	NW	6	2.7	.....	.....	10ks	.....	NW	0.24	6.1	Cloudy	
Stanwix, Arizona	.....	.....	.....	.....	60	15.6	20	NW	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Stockton, Texas	26.78	680.2	29.76	755.9	54	12.2	74	S	25	11.2	.....	0	5s	.....	S	0	0	Fair	
Thatcher's Island, Mass	29.76	755.9	29.81	757.2	47	8.3	92	S	12	5.4	.....	.....	10s	.....	W	0.06	1.5	Foggy	
Toledo, Ohio	29.65	753.1	30.36	771.1	40	4.4	56	W	7	3.1	.....	0	2s	.....	Calm	0	0	Clear	
Tucson, Arizona	27.49	698.2	30.04	763.0	47	8.3	19	S	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Tybee Island, Georgia	30.15	765.8	30.18	766.6	55	12.8	68	W	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Umatilla, Oregon	29.83	757.7	.....	.....	47	8.3	92	SE	4	1.8	.....	.....	10s	.....	Calm	0.04	1.0	Cloudy	
Vicksburg, Mississippi	29.98	761.5	30.24	768.1	52	11.1	73	E	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Virginia City, Montana	24.42	620.3	29.90	759.4	28	— 2.2	77	SE	4	1.8	.....	0	5s	.....	Calm	0	0	Fair	
Visalia, California	29.88	758.9	30.27	768.8	41	5.0	91	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Washington, D. C.	30.01	762.2	30.13	765.3	49	9.4	57	NW	11	4.9	.....	0	0	.....	.....	0	0	Clear	
Wickenburg, Arizona	.....	.....	.....	.....	37	2.8	15	NW	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Wilmington, N. Carolina	30.06	763.5	30.14	765.5	50	10.0	77	NW	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Winnemucca, Nevada	25.96	659.4	30.32	770.1	28	— 2.2	77	S	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Wood's Holl, Mass	29.83	757.7	29.88	758.9	49	9.4	93	S	13	5.8	.....	.....	10n	.....	S	0.09	2.3	Light rain	
Yankton, Dakota	29.02	737.1	30.39	771.9	33	0.6	74	SE	6	2.7	.....	.....	10n	.....	Calm	0.01	0.3	Sleeting	
Yuma, Arizona	29.96	761.0	30.13	765.3	45	7.2	34	N	2	0.9	.....	0	0	.....	.....	0	0	Clear.	
SUB-SERIES.																			
York Factory, B. A.	30.39	771.9	30.45	773.4	—13	—25.0	72	SW	6	2.7	.....	0	0	.....	.....	0	0	Clear	J. Fortescue, W. Wood.
Havana, Cuba, W. I.	29.97	761.2	29.99	761.7	75	23.9	85	Calm	0	0	.....	.....	10n	.....	E	0.10	2.5	Light rain	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.05	763.3	30.06	763.5	79	26.1	82	Calm	0	0	.....	2c	2s	Calm	NE	0	0	.....	James Gall.
Navassa, W. I.	29.82	757.4	29.90	759.4	83	28.3	.....	NE	20	8.9	.....	.....	.....	.....	.....	0	0	Fair	F. M Everett.
St. Thomas, W. I.	.....	.....	.....	.....	82	27.8	87	SE	3	1.3	.....	2c	4ks	E	.....	0.4	10.	.....	G. O. Gellich.
Paramaribo, D. Guiana, S. A.	.....	.....	29.94	760.5	85	29.4	76	E	.....	.....	2	5k	7ks	E	.....	0	0	Cloudy	C. J. Hering.
Batavia, Dutch Guiana, S. A.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Dr. H. Groot.
Medellin, Colombia, S. A.	25.21	640.3	.....	.....	67.0	19.4	82	NE	.....	.....	1	.....	10s;ks	.....	.....	0	0	Cloudy	Thomas Herran.
Honolulu, Oahu, H. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Daniel Smith.
Makawao, Maui, H. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters: Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.: Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.: Florence, 1,550 (?) ft., or 472.5 (?) m.: Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.: Makawao, 2,205 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,676 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.: Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,546 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.: Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.67 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard Mare Island, Cal.	30.20	767.1	51	10.6	51	10.6	86	SSW	8	3.6	.....	.....	1s	.....	Calm	0	0	.....	.....	.....	
Navy Yard, Pensacola, Fla.	30.30	769.6	.....	.....	59	15.0	82	N	4	1.8	.....	.....	2	.....	.....	0	0	.....	.....	D. clouds.....	
Navy Yard, Portsmouth, N.H	29.84	757.9	60	15.6	45	7.2	92	Calm	0	0	.....	.....	.....	.....	.....	0.25	6.3	.....	.....	Threatening	
Naval Hospital, Yokohama, Japan.....	29.77	756.1	60	15.6	50.5	10.3	93	Calm	.....	.....	0	.....	Sm'e	.....	Calm	0	0	.....	.....	Clear	
Adams. Punta Arenas, Patagonia.	29.58	751.3	53	11.7	52	11.1	93	NW	.....	.....	1	.....	10	.....	NW	Light	Light	None	.....	D. clouds.....	
Alert, Yokohama, Japan.....	29.90†	759.4†	60	15.6	60	15.6	82	Calm	.....	.....	0	.....	2	.....	NW	.....	.....	.....	.....	Hazy.....	
Alliance, Constantinople, Turkey.	30.37	771.4	65	18.3	56	13.3	81	NE	.....	.....	2-3	.....	7	.....	NE	.....	.....	.....	.....	Cloudy.....	
Ashuelot. Tientsin, China.....	30.68	779.3	34	1.1	23	— 5.0	86	NNW	.....	.....	1	.....	0	.....	.....	.....	.....	.....	.....	Blue sky.....	
Canonicus, New Orleans, La.....	30.14	765.5	45	7.2	55	12.8	93	SE	.....	.....	1	.....	3	.....	.....	.....	.....	.....	.....	Pleasant.....	
Colorado, New York, N. Y.....	29.95	760.7	51	10.6	50	10.0	86	WSW	7	3.1	.....	.....	3	.....	WSW	0	0	.....	.....	Light fog.....	
Despatch, Constantinople, Turkey.	30.37	771.4	60	15.6	54	12.2	61	NE	.....	.....	3	.....	4	.....	NE	.....	.....	.....	.....	Cloudy.....	
Essex, N. 4° 10′ W. 4° 11″.....	29.84	757.9	84	28.9	86	30.0	84	SE	.....	.....	1	.....	3	.....	W	.....	.....	Long	S	D. clouds.....	
Franklin, Norfolk, Va.....	30.18	766.6	52	11.1	53	11.7	80	NW	6	2.7	.....	.....	1	.....	NW	0	0	.....	.....	Clear.....	
Guard, N. 31° 19′, W. 32° 50′.....	30.50	774.7	70	21.1	70	21.1	70	NE	.....	.....	5-6	.....	5	.....	N&E	.....	.....	Rough	N&E	Squally	
Lackawana, San Francisco, Cal.....	30.30	769.6	.....	.....	57	13.9	75	NW	.....	.....	1	.....	2	.....	.....	.....	.....	.....	.....	Hazy..	
Marion, Smyrna, Turkey.....	30.18	766.6	64	17.8	61	16.1	55	NW	.....	.....	2	.....	0	.....	.....	0	0	Smooth	...	Blue sky.....	
Michigan, Erie, Pa.....	29.75	755.6	65	18.3	41	5.0	49	NNW	.....	.....	6	.....	10	.....	NNW	.....	.....	.....	.....	Cloudy.....	
Monongahela, N. 34° 44, E. 17° 47′.....	30.13	765.3	68	20.0	68	20.0	95	NE	.....	.....	3	.....	ck	.....	.....	Light	Light	Moderate.	E	D. clouds.....	
New Hampshire, Port Royal, S.C.....	30.32	770.1	.....	.....	56	13.3	87	NW	2	0.9	.....	.....	1	.....	NW	0	0	.....	.....	D. clouds.....	
Omaha, Callao, Peru.....	30.04	763.0	74	23.3	73	22.8	90	SE	3	1.3	.....	.....	10	.....	SE	0	0	Smooth	.....	Dull	
Onward, Callao, Peru.....	30.02†	762.5†	72	22.2	71	21.7	90	SSE	.....	.....	1	.....	10	.....	.....	.....	.....	Long	W	Overcast.....	
Ossinee, Norfolk, Va.....	30.16	766.1	73	22.8	53	11.7	86	WNW	.....	.....	2	.....	0	.....	.....	.....	.....	.....	.....	Blue sky.....	
Palos, Shanghai, China.....	30.52	775.2	55	12.8	48	8.9	70	N	.....	.....	4	.....	10	.....	N	.....	.....	.....	.....	Overcast.....	
Plymouth, Hampton Roads, Va.....	30.11	764.8	65	18.3	57	13.9	87	WNW	.....	.....	2	.....	0	.....	.....	.....	.....	Smooth	.....	Clear	
Powhatan, Hampton Roads, Va.....	29.92	760.0	53	11.7	55	12.8	100	WNW	3.6	1.6	.....	.....	0	.....	.....	0	0	.....	.....	Clear...	
Ranger, Shanghai, China.....	30.60	777.2	66	18.9	54	12.2	74	N	.....	.....	2-4	.....	10	.....	N	.....	.....	.....	.....	Overcast.....	
Rio Bravo, Brownsville, Texas.....	29.90	759.4	.....	....	68	20.0	95	ESE	.....	.....	2	.....	3	.....	SE	.....	.....	.....	.....	D. clouds.....	
Santee, Annapolis, Md.....	30.14	765.5	65	18.3	53	11.7	54	NW	.....	.....	5	.....	0	.....	.....	0	0	.....	.....	Clear.....	
Saratoga, Hampton Roads, Va.....	....	.....	.....	.....	50	10.0	??	N	.....	.....	3	.....	1	.....	Calm	0	0	.....	.....	Clear.....	
St. Louis, League Island, Pa	29.90	759.4	49	9.4	49	9.4	85	NW	20	8.9	.....	.....	0	.....	.....	0	0	.....	.....	Clear.	
Swatara, Hampton Roads, Va.....	30.16	766.1	.....	.....	59	15.0	76	W	.....	.....	2	.....	0	.....	.....	.....	.....	.....	.....	Blue sky.....	
Tennessee, Yokohama, Japan.....	29.85	758.2	65	18.3	55	12.8	87	NNW	8	3.6	.....	.....	1	.....	.....	0	0	Smooth	.....	D. clouds.....	
Trenton, Villefranche, France.....	30.23	767.8	.....	.....	63	17.2	72	S	3	1.3	.....	.....	0	.....	.....	0	0	.....	.....	Blue sky.....	
Vandalia, Villefranche, France,...	30.16	766.1	64	17.8	62	16.7	72	SW	.....	.....	1-2	.....	0	.....	.....	.....	.....	.....	.....	Blue sky.....	
Wabash, Boston, Mass.....	29.84	757.9	51	10.6	50	10.0	79	SW	10	4.5	.....	.....	10	.....	Calm	0.08	2.0	.....	.....	Drizzling.....	
Wyoming, Washington, D. C.....	30.56†	776.2†	57	13.9	51	10.6	.....	WNW	.....	.....	3	.....	0	.....	.....	.....	.....	.....	.....	Hazy..	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. ‡ Barometer corrected for instrumental error and reduced to sea-level. The position given for the Plymouth is that at noon, local time, instead of that at 7:35 a. m., Washington time.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.	Character.	Direction from—		
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—				
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama, N. 8° 55′, W. 79° 31′ 00″			29.67	753.6	78	25.6	91	NW			3		6		NW			D. clouds	Capt. Howard.
S. S. City of Peking, N. 39° 55′, W. 147° 05′			30.22*	767.6*	56	13.3	75	W			5		8		W	Moderate.	W	D. clouds	Lt. Z. L. Tanner, U.S.N
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio, N. 30° 00′, E. 160° 30′			30.26	768.6	73	22.8		S			6		6		S	Moderate	NW	D clouds	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

NOTE.—The originals give the wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. *Aneroid.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson.
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.

S. S. Belgic																			Capt. John Metcalf.
S. S. Gaelic, N. 36° 32′, W. 126° 40′			30.19*	766.8*	60	15.6	88	NW			5		k		NW	Heavy	NNW	Overcast	Capt. W. H. Kidley
S. S. Oceanic, N. 36° 2′, E. 148° 30′			29.61	752.1	64	17.8	73	SW			4		4		SW	Mod'ate	SW	D. clouds	Capt. H. Parsell.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. *Aneriod.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig, N. 49° 48′, W. 8° 15′	Var.		30.20	767.1	52.0	11.1	69	W			3		ck		NW	Rough		D. clouds	Capt. K. Undütsch.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio, N. 42° 52′, W. 57° 17′			30.04	763.0	54.0	12.2	93	S			3		ks		SW	Long	SSW	D. clouds	Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, nor distinguish between upper and lower clouds.

UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Lo'wr	Upper.	Lower.	Character.	Direction From—		
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second	0—10.	0—10.	0—10.	From—	From—				
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, N. 49° 41′, W. 20° 50′			30.25*	768.3*	59	15.0	??	WSW			3		6		SSW	Light	ESE	Cloudy	Captain Sargent.
S. S. Ohio, Liverpool			29.88	758 9	51	10.6	86	WSW			4		5		WSW			Fair	Captain Morrison.
S. S. Pennsylvania																			Captain Harris.

NOTE.—The originals give the barometer as read off; the wind-force by the scale 0 to 12. *Aneroid; correction for elevation applied, instrumental error not known.

RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

S. S. Nederland																			Capt. Randle.
S. S. Switzerland, N. 49° 45′, W. 14° 50′			30.37*	771.4*	52	11.1		W	20	8.9			4		WNW	Heavy	WNW	D. clouds	Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

*Aneroid; regulated to standard at Antwerp.

ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

S. S. Hibernian																			Capt. W. Richardson.
S. S. Scandinavian																			

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, Kennebunk, Maine			29.87	758.7	51	10.6	86	S	9	4.0					S			Misty.	Capt. James Jorgensen.

NOTE.—The originals for the schooner Addie Fuller give the amount of cloudiness by the scale 0 to 4; the barometer as read off.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^{d}.,) Chief Signal Officer. U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON NOVEMBER 19, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:20 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:28 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er. 0—10.	Clouds. Amount. Low'r. 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours	.....	.....	30.20	767.0	66.2	19.0	69	N	.....	.....	1	.....	0	.....	.....	0	0	Clear.	Michel.
Algiers	.....	.....	30.04	763.0	61.9	16.6	100	Calm	.....	.....	0	.....	10	.....	.....	1.532	38.9	Covered	Peter.
La Calle	.....	.....	30.04	762.9	63.0	17.2	76	NE	.....	.....	3	.....	4	.....	.....	0.12	3.	Cloudy	Fleury.
Tunis	.....	.....	30.07	763.6	63.0	17.2	74	W	.....	.....	1	.....	6	.....	.....	0	0	Cloudy	Jacques.
Sfax	.....	.....	30.03	762.7	60.8	16.0	.....	NW	.....	.....	1	.....	9	.....	.....	0	0	Covered	Husson.
Saida	.....	.....	30.19	766.7	54.3	12.4	76	N	.....	.....	2	.....	2	.....	.....	0.075	1.9	Fair	Millot.
Tebessa	.....	.....	30.05	763.3	.....	.....	.....	Calm	.....	.....	0	.....	1	.....	.....	.....	.....	Very fair	Bourgeois.
Geriville	.....	.....	30.11	764.7	48.2	9.0	89	NNW	.....	.....	4	.....	7	.....	.....	0.16	4.	Very cloudy	Lemaillot.
Laghouat	.....	.....	30.10	764.6	59.0	15.0	48	W	.....	.....	4	.....	6	.....	.....	0.079	2.0	Cloudy	Guyot.
Biskra	.....	.....	30.15	765.9	50.0	10.0	60	SW	.....	.....	1	.....	0	.....	.....	0	0	Clear	Kuntz.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m.; or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

Agram	29.59	751.5	30.15	765.8	45.5	7.5	67	Calm	.....	.....	0	.....	0	.....	.....	0	0	.....	Prof. Ivan Stoxir
Cracow, I. R. Observatory	29.37	746.0	30.16	766.0	40.3	4.6	78	NE	.....	.....	1	.....	10	.....	.....	0	0	.....	Dr. Wierzbiski.
Eperies	29.24	742.8	30.16	766.0	38.5	3.6	77	S	.....	.....	1	.....	10s	.....	Calm	0	0	.....	Julius Mikolik.
Gratz	28.87	733.3	30.17	766.4	37.9	3.3	72	ESE	.....	.....	3	.....	10	.....	.....	0	0	.....	Andreas Rospini.
Hermannstadt	28.72	729.4	30.21	767.3	33.1	0.6	78	ESE	.....	.....	1	.....	10	.....	.....	0	0	.....	Prof. Reissenberger.
Kremsmünster	28.73	729.7	30.11	764.9	38.8	3.8	87	W	.....	.....	2	.....	10	.....	.....	0	0	.....	Prof. C. Wagner.
Lemberg	29.09	738.9	30.11	764.9	39.6	4.2	85	SW	.....	.....	2	.....	10	.....	.....	0	0	.....	Dr. T. Stanecki.
Pola	29.99	761.8	30.10	764.6	57.4	14.1	60	Calm	.....	.....	0	.....	10s	.....	.....	0	0	.....	I.R. Hydrographic Office.
Szathmar	29.76	755.8	30.24	768.1	36.0	2.2	80	E	.....	.....	3	.....	10	.....	.....	0	0	.....	Johann Tamas, S. J.
Szegedin	29.88	759.0	30.17	766.3	44.6	7.0	71	S	.....	.....	1	.....	5	.....	.....	0	0	.....	Karl Stancel.
Trieste	30.03	762 8	30.13	765.4	54.5	12.5	61	Calm	.....	.....	0	.....	10	.....	.....	0	0	Cloudy	P. Busin.
Vienna	30.43	747.5	30.16	766.0	37.4	3.0	87	Calm	.....	.....	0	.....	.....	.....	.....	0	0	.....	I. R. Central Met. Obs'y.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time, and at Trieste at 7 a. m. of the following day. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

Arlon	28.54	724.8	30.08	764.0	42.4	5.8	90	WSW	.....	.....	4	.....	10	.....	.....	0.386	9.8	.....	Prof. M. Passau.
Brussels	29.79	756.6	29.99	761.8	48.4	9.1	87	SW	.....	.....	5	.....	10	.....	wsw;sw	0.108	2.75	.....	Royal Observatory.
Furnes	29.03	740.2	29.95	760.8	49.3	9.6	83	SSW	.....	.....	4	.....	10	.....	.....	0.193	4.9	.....	M. E. de Cae.
Maeseyck	29.87	758.8	30.00	762.1	48.0	8.9	93	SW	.....	.....	2	.....	8	.....	.....	0.110	2.8	.....	M. Pierrot.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

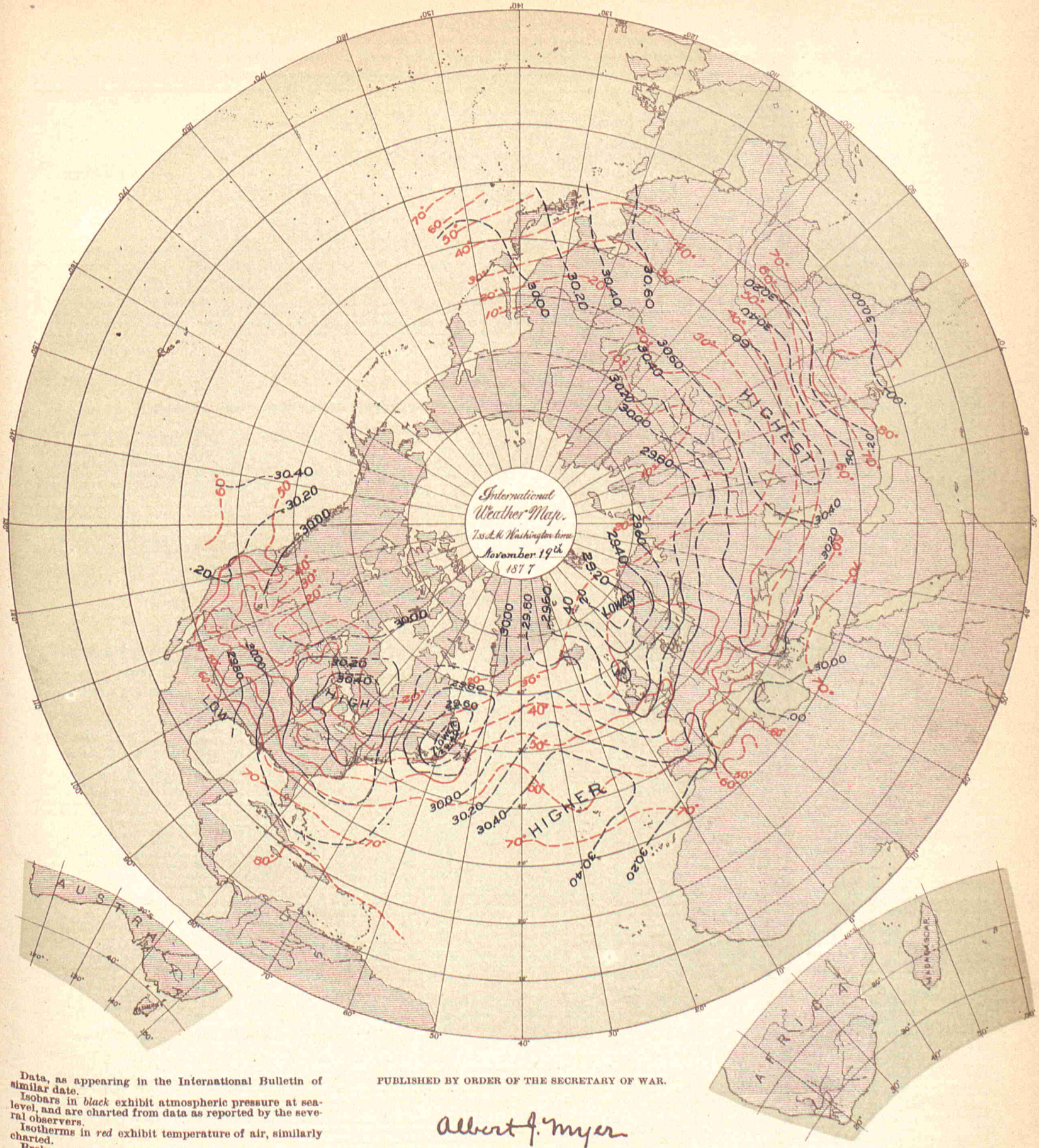
Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	29.42	747.3	29.52	749.8	42.0	5.6		S	9	4. 0			7			0.950	24.13	Misty	W. Boswell.
Ardrossan	29.43	747.5	29.44	747.8	44	6.7		NW			1		8					Raining	William McNeil.
Armagh, Observatory			29.57	751.1	43.7	6.5		W	8	3.6			9					Overcast	S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)			29.56	750.8	44.0	6.7		SSE	22	9.8			10					Raining	John Hartnup.
Birr Castle, (Parsonstown)			29.67	753.6	46.9	8.3		W			2		2					D. clouds	J. L. E. Dreyer.
Bradford, Yorkshire	29.18	741.2	29.58	751.3	45.1	7.3		S			3		10			0.07	1.8	Raining	J. McLandsborough.
Bridgetown, (Barbados)	29.87	758.7	29.90	759.4	83.0	28.3		NE			1		2					D. clouds	Pvt. G. W. Roberts, A.
Cambridge, Observatory			29.79	756.7	45.0	7.2		S			1		10					Raining	H. Todd. [H. C.
Cardington			29.79	756.7	45.0	7.2		SW			1		10					Overcast	John McLaren.
Chatham, School M. E.	29.69	754.1	29.82	757.4	49.2	9.6		SW			3		10					Raining	Lt. W. G. Morris, R. E.
Dartmoor	28.28	718.3	29.76	755.9	46.0	7.8		SW			5		10					Rain & fog	Alexander Watt.
Davos Platz (Switzerland)																			Francis Redford, M. A.
Donaghadee	29.46	748.3	29.49	749.0	42	5.6		WSW			3		5					D. clouds	J. Mac Gowan.
Dover	29.84	757.9	29.86	758.4	51	10.6		SW			4		9					Raining	J. Costello.
Eccles, (near Manchester)			29.61	752.1	44.5	6.9		S	5.5	2.5			10					Raining	Thomas Mackereth.
Falmouth, Observatory	29.54	750.3	29.77	756.1	52.1	11.2		WSW			4		9					Overcast	The Staff.
Fort Napier, (Natal)	27.98	710.7	30.20	767.1	68.5	20.3		NE			3		6					D. clouds	Pvt. G. Salmon, A. H. C.
Free Town, (Sierra Leone)			29.88	758.9	84.0	28.9		Calm			0		3					D. clouds	
Galway, Queen's College																			Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	30.08	764.0	30.14	765.5	65.6	18.7		E			2		0					Blue sky	Corpl. C. Aitken, A. H. C.
Glasgow, Observatory	29.24	742.7	29 44	747.8	42.0	5.6		NNE			1		10					Raining	D. G. Maclean.
Great Yarmouth	29.82	757.4	29.82	757.4	47	8.3		SSW			3		5					Hazy	G. T. Watson.
Greenwich, Royal Obs'y	29.64	752.8	29.81	757.2	48.0	8.9		S			1		10					Overcast	The Staff, for G. B. Airy.
Guernsey	29.65	753.1	29.87	758.7	51	10.6		SSW			4		10					Squally	Dr. S. E. Hoskins, F. R. S.
Helston			29.81	757.2	53	11.7		SW			6		10			0.13	3.3	Overcast	M. P. Moyle.
Holyhead	29.47	748.5	29.52	749.8	47	8.3		WNW			6		8					D. cloud	John Tilston.
Jersey	29.66	753.4	29.96	761.0	50.6	10.3		SW			6		10			Blank	Blank	Threatening	J. Fisher.
Kew, Observatory			29.81	757.2	47.1	8.4		SSW	12	5.4			10sd					Misty	The Staff.
Kingstown	29.53	750.0	29.56	750.8	46	7.8		WNW			6		4					D. clouds	George Mitchell.
Leicester, Mu eum			29.72	754.9	44.2	6.8		SW			3		10					Drizzling	Wm. J. Harrison, F. G. S.
Malta, (Mediterranean)	29.86	758.4	29.93	760.2	66.0	18.9		NE			6		4					D. clouds	Sgt. C. Arbeiter, A. H. C.
Nairn	29.37	746.0	29.46	748.3	40	4.4		Calm			0		10					Overcast	W. D. Penny.
Nassau, (Bahamas)			30.07	763.8	75.5	24.2		NE			5		4					D. clouds	C. S. Duncombe.
Nottingham, Observatory	29.49	749.0	29.68	753.9	43.8	6.6		SSW			3		10cs;d		SW	0.47	11.9	Raining	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.14	740.1	29.66	753.4	42.9	6.1		S			4		10					Raining	Rev. Stephen Whitty.
Oxford, Radcliffe Obs'y			29.78	756.4	47	8.3		S			2		10					Misty	F. Lucas
Plymouth	29.67	753.6	29.75	755.6	51.0	10.6		SW			5		10					Raining	John Merrifield.
Roche's Point	29.72	754.9	29.76	755.9	49	9.4		WNW			5		5					¼ clouded	W. Kennedy.
Saint Ann's Head	29.48	748.8	29.64	752.8	50	10.0		W			4		5					D. clouds	John C. Walker.
Sandwick Manse, (Orkneys.)			29.50	749.3	42.0	5.6		SW	7	3.1			10					Misty	Rev. C. Clouston, LL. D
Scutari, Cemetery, (Turkey)			30.15	765.8	57.0	13.9		NE			1		1					Blue sky	Sergt. W. H. Lyne.
Sheffield	29.42	747.3	29.66	753.4	44.5	6.9		WSW			2		10			0.40	10.2	Overcast	W. F. Cooper.
Silloth Rectory	29.40	746.7	29.43	747.5	47.2	8.4	89	SW			5		10			0.455	11.56	Raining	Rev. F. Redford, M. A.
Stonyhurst, Observatory					42.9	6.1		S			4		10					Overcast	Rev. S. J. Perry.
Stornoway, Lews C., (Hebr.)			29.38	746.2	39	3.9		NE			1		5					Raining	John Smith.
Strathfield Turgiss	29.64	752.8	29.85	758.2	47.5	8.6		S			1		8					Raining	Rev. C. H. Griffith, F. M. S.
Thurso			29.46	748.3	40	4.4		SSW			1		8					Gloomy	John Trotter.
Truro, Royal Institution			29.79	756.7	54	12.2		NW			7		5					D. clouds	W. Newcombe.
Valencia, Observatory			29.80	756.9	48.0	9.2		WNW	22	9.8			7					D. clouds	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)																			Henry Mercer.
Cape Good Hope, Obs'y	30.10	764.5	30.14	765.5	82.9	28.3	66	S	22	9.8		0	0						The Staff, for E. J. Stone.
Hobart Town, (Tasmania)			30.11	764.8	53.0	11.7	70	SE			2		0			0.15	3.8		Francis Abbott, F. R. A. S.
Leith, Restalrig Park																			Andrew Gibb.
Mauritius, Observatory	29.86	758.4	30.05	763.2	77.1	25.1	47	ESE	13.0	5.8		0	1		ESE	0	0	Fine	C. Meldrum.
Melbourne, Observatory	29. 7	761.2	30.06	763.5	63.3	11.8	91	W	5	2.2			3			0	0	Fine	R. L. J. Ellery.
Monach L't-house, (Hebrides)																			J. Youngclause.
North Unst, (Shetland Is.)																			Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m.

Marine Series. Vessels.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea or swell. Height scale 0—9	Sea or swell. Direction from—	Weather.	Observer.
S. S. Algeria, N. 46° 45′, W. 40° 25′			30.24	768.1	61	16.1		SSW			4		9		WSW	5*	SSW	D. clouds	Capt. W. Watson.
S. S. Batavia, N. 42° 55′, W. 55° 50′			29.84	757.9	49	9.4		WNW			5		6			5	SW	Showery	Capt. J. E. Mouland.
Ship Camperdown																			Capt. A. T. Miller.
Brig Catherine																			Capt. Adam Smith.
Barque Celeste																			Capt. D. F. McKechnie.
S. S. Hibernia																			Capt. W. R. Cato
Barque Maroon																			Capt. A. T. Brown.
Ship Mikado																			Capt. C. C. Prehn.
S. S. Seine																			Capt. H. Manning.
Barque Sorata																			Capt. Jas. J. Price.
Schooner Traveller																			Capt. Alex Simpson.

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. *Feet.



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	BAROMETER. Corrected for instrum'tal error and temperature. Inches.	BAROMETER. Corrected for instrum'tal error and temperature. Millimeters.	BAROMETER. Reduced to sea-level. Inches.	BAROMETER. Reduced to sea-level. Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Upper. From—	CLOUDS. Direction. Lower. From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	WEATHER.	OBSERVER
San José	26.18	665.0			67.6	19.8	92	SE			2	1ck				0.1	3.		Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29 81	757.1	29.85	758.3	44.6	7.0	88	WSW			2		7					Foggy
Fanöe	29.79	756.6	29.81	757.1	45.1	7.3	85	W			6		8					Raining
Godthaab, (Greenland)	30.07	763.6	30.11	764.7	16.2	— 8.8	51	ENE			4		1					
Stykkisholm, (Iceland)	29.76	755.9	29.80	757.0	30.0	— 1.1	96	NE			8		10					Snowing
Thorshavn, (Furöe)	29.40	746.7	29.43	747.6	39.2	4.0	87	NW			2		4					Raining
Vestervig	29.55	750.5	29.72	754.8	43.5	6.4	73	W			6		8					Raining

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

Alençon, Normal School	29.58	751.2	30.13	765.2	48.2	9	94	SW			1		10			0	0	Covered	Collignon, Director.
Amiens, Normal School	29.87	758.6	29.98	761.4	53.1	11.8	78	ESE			2		0			0	0	Clear	Bonvarne, Director.
Avignon, Normal School	30.04	763.0	30.12	765.0	50 5	10.3	70	N			1		0			0	0	Very clear	Mr. Giraud, Director.
Bar-sur-Seine	29.55	750.5	30.13	765.3	45.5	7.5	77	SW			2		10			0	0	Covered	C. Saillard.
Beaumette Obs'y (Angers)	29.86	758.4	30.02	762.5	46.6	8.1	86	S	15.2	6.8					S	0.220	5.6		Albert Cheux.
Beauvais	29.75	755.6	30.04	763.0	49.1	9.5	82	SW			3		10		SW	0	0	Covered	Normal School.
Besançon	29.27	743.4	30.19	766.8	41.9	5.5	83	E			3		10			0	0	Covered	Normal School.
Bourg-en-Bresse	29.29	743.9	30.21	767.2	39.7	4.3	83	W			2		10n		W	0	0	Covered	Normal School.
Bourges, Normal School	29.59	751.6	30.16	766.0	46.6	8.1	86	WSW			2		3		SW	0	0	Cloudy	A. Wagner, Director.
Brest, Naval Observatory	29.61	752.1	29.83	757.7	51.3	10.7	86	SW			4		10		SW	0.059	1.50	Raining	The Staff.
Carcassonne, Normal School	29.78	756.3	30.20	767.1	47.7	8.7	89	NNW			2		10		NNW	0	0	Covered	Vateau, Director.
Caen	29.90	759.5	29.98	761.4	51.4	10.8	82	N			3		8		NE	0	0	Very cloudy	Normal School.
Chartres, Normal School	29.53	750.0	30.11	764.7	48.6	9.2	76	WSW			4		10			0	0	Covered	Lequin, Director.
Châlons-sur-Marne, N. Sch'l	29.76	756.0	30.09	764.3	45.1	7.3	94	SW			3		10n			0	0	Covered	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.76	730.6	30.17	766.4	37.6	3.1	83	SW			1		10			0	0	Foggy	Alluard, Director.
Commercy, Normal School	29.22	742.1	30.12	765.1	45.0	7.2	80	SW			2		8		SW	0	0	Very cloudy	Dr. Goulet, Director.
Commune de Gréasque*	28.99	736.4	30.13	765.4	58.5	14.7	65	SW			2		2		SW	0	0	¼ covered	W. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	29.84	757.9	30.06	763.5	46.0	7.8	91	SE			4		10			0	0	Covered	Mouillot, Director.
Le Mans, Normal School	29.74	755.3	30.05	763.3	45.7	7.6	91	SW			6		10			0.08	2.	Covered	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.26	743.3	30.21	767.2	40.8	4.9	78	NW			1		10			0.343	8.7	Covered	Pin, Director.
Lorient, Naval Observatory	29.90	759.5	30.00	762.0	53.6	12.0	76	SW			3		10			0.244	6.2	Covered	T. Carré, Director.
Mâcon, Normal School	29.45	747.9	30.16	766.1	40.8	4.9	90	Calm			0		10			0	0	Covered	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	29.07	738.4	30.15	765.7	44.8	7.1	94	N					10		S	0.492	12.5	Covered	Normal School.
Nismes, Normal School	29.91	759.7	30.11	764.9	54.3	12.4	54	N			1		0			0	0	Clear	Boyer, Director.
Orleans, Normal School	29.60	753.3	30.12	765.1	46 0	7.8	83	SW			2		8		SW	0.008	0.2	Very cloudy	Bernard, Director.
Paris, Observatory	29.81	757.2	30.06	763.4	48.2	9.0	83	SW			2		8k		SW	0	0	Very cloudy	National Observatory.
Privas	28.95	735.4	30.04	762.9	48.2	9	72	N			2		10		N	0	0	Covered	Normal School
Rochefort, Naval Obs'y	30.13	765.3	30.16	766.1	43.9	6.6	91	S			3		10		S	0.16	4.	Covered	Lt. Decante, Director.
Rouen, Normal School	29.91	759.8	30.00	762.0	51.8	11.0	74	SSW			2		8		SW	0.059	1.5	Very cloudy	F. Lucard, Director.
Tarbes, Normal School																			T. Hugues, Director.
Villefranche	29.40	746.8	30.14	765.6	40.1	4.5	87	NNE			1					0	0	Misty	Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.74	755.4	29.77	756.1	81.0	27.2										0	0		L'Abbé Marchési.
Marseilles, Observatory			30.00	764.2	58.5	14.7	63	WSW			1		1			0	0		The Staff.
Mont-Louis	24.90	632.5	30.22	767.5	46.2	7.9	33	SE	5.6	2.50			0			0	0		Mr. Falguère.
Nice			30.07	763.7	59.7	15.4	86	SW							W	0	0	Fair	Dr. A. Niepce.
Paris, Montsouris Obs'y	29.77	756.2	30.05	763.2	47.8	8.8	85	SW			3		9		SW	Inap.	Inap.		Marié Davy, Director.
Perpignan			30.13	765.2	55.2	12.9	58	N	7.4	3.33			0			0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.	21.27	540.2			32.9	0.5		NW			1		1					Clear	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.55	572.8			38.6	3.8		NW			2		1			0	0	Clear	Gen'l de Nansouty.
Saint Maur, (near Paris)	29.89	759 1	30.05	763.3	48.4	9.1	84	SSW			2		10		SSW	0.079	2.0		E. Renou.
Toulouse, Observatory	29.48	748.8	30.21	767.3	45.1	7.3	81	NW			1		0			0.049	1.25		The Staff.
Tours	29.90	759.5	30.10	764.5	47.1	8.4	78	SSW			2		10		WSW	0	0		C. Marquet.
Versailles, (near Paris)			30.05	763.2	46.8	8.2	92	W			2		10			0.003	0.07	Covered	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.54	775.7	30.57	776.4	41.0	5.0	88	NW	3.4	1.5			0			0	0	Clear	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7. 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; for Montsouris, the barometer reduced to freezing but not to sea-level. At Mirecourt the cloud direction is apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 136 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg																			
Berlin	29.86	758.4	30.03	762.7	48.0	8.9	78	SW			2		7			0	0		Prof. Dr. Hoh.
Breslau	29.58	751.3	30.11	764.8	42.4	5.8	75	SSW			3		10			0	0		Prof. Arndt.
Carlsruhe	29.66	753.3	30.10	764.5	43.2	6.2	76	SW			2		10			0	0		Royal University Obs'y.
Cassel	29.47	748.5	30.08	764.0	46.4	8.0	84	SSW			2		10	SSW		0	0		Albert Senz.
Crefeld	29.82	757.5	29.98	761.6	49.1	9.5	84	SW			4		10			0.04	1.		Dr. H. Möhl.
Emden	29.98	761.5	30.02	762.4	43.7	6.5	98	SW			3		1			0	0		Director Lose.
Frankfort on the Main	29.74	755.4	30.11	764.9	46.0	7.8		SSW			1		10			0	0		Prof. Prestel.
Friedrichshafen	28.68	728.4	30.16	766.1	39.9	4.4	87	SW			5		10	WSW		0	0		Physical Society.
Hamburg	29.86	758.5	29.93	760.3	45.3	7.4	89	WSW			1		7kn			0.008	0.2	Fair	M. Wilhelm.
Kiel	29.89	759.1	29.90	759.5	45.0	7.2	82	SW			3		4			0	0		Captain F. Hegemann.
Königsberg, (Prussia)	29.89	759.2	29.97	761.2	41.9	5.5	87	SW											Prof. G. Karsten.
Köslin			29.97	761.1	41.0	5.0		SW			2		8					Cloudy	Prof. E. Luther.
Leipsic, Observatory	29.67	753.6	30.10	764 5	44.8	7.1	81	SW			2		7	SW		0	0		H. Müller.
Memel, Naval School	29.87	758.6	29.91	759.8	44.8	7.1	84	WSW			5		10n			0	0		Prof. Bruhns.
Neufahrwasser	29.96	761.0	29.98	761.4	44.1	6.7	77	W			3		5						Reinbrecht von Skalweit.
Posen	29.79	756.7	30.09	764.3	43.2	6.2	81	W			2		10			0	0		A. Lothes.
Strassburg Obs., (in Alsace	29.58	751.4	30.15	765.7	44.4	6.9	74	SW			2		10					Cloudy	Dr. Magener.
Stuttgart	29.16	740.6	30.13	765.3	41.9	5.5	77	SW			1		10			0	0		Dr. Schur.
Treves, (Trier)	29.43	747.5	29.95	760.8	47.5	8.6	79	WSW			4		10			0	0		Prof. Schoder.
Weissenburg, (Bavaria)	28.59	726.1	30.14	765.6	39.2	4.0	90	Calm	0	0			10			0	0	Foggy	Prof. Flesch.
Wustrow, Naval School	29.95	760.7	29.98	761.5	43.5	6.4	85	SW			5		10			0	0	Covered	Dr. Von Bebber.
German Naval Series.																		Covered	E. F. Schütz.

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet: Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4, Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens

Athens	29.81	757.1	30.21	767.2	54.9	12.7		N										Cloudy	Dr. J. F. J. Schmidt.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and wind-force; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	30.00	762.1	30.05	763.4	80.7	27.1	66	NW	19.0?	8.5?			1			0	0	D. clouds	
Deesa	29.56	750.9	30.04	763.0	86.8	30.4	39	Calm					0			0	0	Blue sky	
Bombay	29.90	759.4	29.94	760.4	84.7	29.3	74	NW	13.0	5.8			3		W	0	0	Misty	
Poona	27.94	709.8	29.94	760.5	81.8	27.7	53	E					8		E	0	0	D. clouds	
Lahore	29.31	744.5	30.06	763.6	76.9	24.9	48	N	1.9	0.8			6			0	0	Cloudy	
Belgaum	27.43	696.6	29.97	761.1	77.7	25.4	66	E	9.0	4.0			6		S	0.05	1.3	Showery	
Bangalore																			
Roorkee	29.09	738.9	30.00	762.0	76.8	24.9	41	NW	1.2	0.5			3			0	0		
Agra	29.45	747.9	30.02	762.4	79.7	26.5	41	NW								0	0		
Trichinopoly																			
Nagpur	28.97	735.9	30.03	762.7	78.6	25.9	45	NE	3.5	1.6			2			0	0	Blue sky	
Madras																			
Lucknow	29.62	752.3	30.00	761.9	79.3	26.3	43	NW	2.0	0.9			4	E		0	0	D. clouds	
Allahabad	29.68	753.9	30.00	761.9	75.7	24.3	53	Calm	1.7	0.8			0			0	0	Blue sky	
Patna	29.84	757.9	30.02	762.5	78.5	25.8	58	W	0.8	0.4			2	W	W	0	0		
Hazaribagh	27.99	711.0	30.04	762.9	72.8	22.7	43	WNW	6.1	2.7			4			0	0	Blue sky	
Cuttack	29.94	760.5	30.02	762.6	77.0	25.0	63	N	2.1	0.9			0			0	0	Blue sky	
Calcutta (Allpore)	30.00	761.9	30.02	762.4	73.4	23.0	72	Calm					0			0	0	Blue sky	
Goalpara	29.61	752.2	30.01	762.2	76.6	24.8	62	Calm	0.4	0.2			0			0	0	Blue sky	
Chittagong	29.93	760.2	30.02	762.6	74.8	23.8	77	NNE	2.1	0.9			0			0	0	Blue sky	
Sibsagar	29.70	754.4	30.05	763.2	66.4	19.1	88	ENE	0.7	0.3			0			0	0	Blue sky	
Rangoon																			
Jubbulpore	28.66	728.0	30.05	763.3	74.5	23.6	64	NE	1.6	0.7			0			0	0	Blue sky	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.8 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 1—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	22.17	563.0	30.05	763.2	33.8	1.0	50	N	.....	.....	2	.....	1	NW	.....	0	0	.....	Ab. Dom. Morgini.
Stelvio	22.13	562.2	30.04	763.0	33.6	0.9	.....	SSW	.....	.....	1	.....	0	.....	.....	0	0	.....	Signora Ernesta Manfredi.
Udine	29.69	754.2	30.11	764.7	51.8	11.0	56	Calm	0	0	.....	.....	10	.....	.....	0	0	.....	Prof. Giovanni Clodig.
Padua	30.00	762.1	30.11	764.9	49.8	9.9	63	NW	3.1	1.4	.....	.....	10	.....	.....	0	0	.....	Prof. Dott. Lorenzoni.
Vicenza	29.93	760.1	30.12	765.1	50.7	10.4	65	W	1.3	0.6	.....	.....	5	.....	.....	0	0	.....	Conte Alm. Da Schio.
Verona	29.93	760.1	30.15	765.8	51.6	10.9	70	WSW	0	0	.....	.....	10	.....	.....	0	0	.....	Dott. B. Bertoncelli.
Bergamo	28.79	731.3	30.13	765.2	43.2	6.2	70	N	.....	.....	4	.....	10	.....	.....	0	0	.....	Prof. Trionfini Carlo.
Domodossola	29.11	739.5	30.17	766.2	44.2	6.8	82	Calm	.....	.....	0	.....	10	.....	.....	0	0	.....	Prof. Giuseppe Calza.
Milan	29.63	752.5	30.16	766.0	48.4	9.1	.....	ENE	.....	.....	2	.....	10	ESE	.....	0	0	.....	Ab. Gio. Capelli.
Pavia	29.80	757.0	30.16	766.0	47.7	8.7	78	E	.....	.....	1	.....	10	.....	.....	0	0	.....	Prof. Gio. Cantoni.
Moncalieri	29.23	742.5	30.15	765.9	45.5	7.5	81	ESE	0	0	.....	.....	10	.....	.....	0	0	.....	Prof. P. F. Denza.
Mondovi	28.19	716.1	30.13	765.4	39.9	4.4	85	NW	.....	.....	2	.....	10	.....	.....	0	0	.....	Prof. D. C. Bruno.
Porto Maurizio	29.89	759.1	30.11	764.8	57.0	13.9	66	E	.....	.....	2	.....	9	W	.....	0	0	.....	Prof. L. Vassallo.
Genoa	29.92	760.0	30.09	764.3	53.2	11.8	61	N	4.3	1.9	.....	.....	10	SW	.....	0	0	.....	Prof. G. M. Garibaldi.
Piacenza	29.89	759.3	30.15	765.9	46.8	8.2	74	SE	1.3	0.6	.....	.....	10	.....	.....	0	0	.....	Dott. G Manzi.
Parma	29.83	757.6	30.15	765.9	48.2	9.0	67	ESE	.....	.....	2	.....	9	.....	.....	0	0	.....	Prof. P. Pigorini.
Florence	29.83	757.6	30.09	764.2	56.3	13.5	69	NE	.....	.....	2	.....	4	.....	.....	0	0	.....	Cav. F Meucci.
Leghorn	30.01	762.2	30.10	764.4	58.3	14.6	72	NE	8.7	3.9	.....	.....	9	.....	.....	0	0	.....	Prof. P. Monte.
Siena	28.88	733.6	30.10	764.4	55.2	12.9	73	SE	1.8	0.8	.....	.....	2	W	.....	0	0	.....	Prof. L. Toscani.
Urbino	28.60	726.3	30.16	766.1	47.8	8.8	86	NE	.....	.....	2	.....	10	.....	.....	0	0	.....	Prof. P. Serpieri.
Pesaro	30.09	764.3	30.14	765.6	51.4	10.8	64	N	29.3	13.1	.....	.....	10	WNW	.....	0	0	.....	Prof. Luigi Guidi.
Ancona	30.00	762.0	30.11	764.7	54.0	12.2	74	NW	.....	.....	4	.....	10	.....	.....	0	0	.....	Prof. F. DeBosis.
Grosseto	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Avv. P. Ponticelli.
Rome	29.92	760.0	30.10	764.5	60.8	16.0	60	N	3.8	1.7	.....	.....	0	.....	.....	0	0	.....	Prof. P. A Secchi.
Naples, O. U	29.89	759.1	30.09	764.2	66.2	19.0	51	N	.....	.....	4	.....	3	SE	.....	0	0	.....	Prof. L. Palmieri.
Lecce	.....	.....	.....	.....	60.8	16.0	77	ESE	3.8	1.7	.....	.....	10	.....	.....	0.154	3.9	.....	Prof. C. De Giorgi.
Cosenza	.....	.....	.....	.....	57.2	14.0	71	SE	.....	.....	1	.....	10	.....	.....	0.067	1.7	.....	Prof. F. D. Conti.
Cagliari	29.82	757.5	30.01	762.3	64.4	18.0	84	SE	.....	.....	2	.....	10	E	.....	0.839	21.3	.....	Prof. A. Pacinotti.
Riposto, (Sicily)	29.87	758.8	29.96?	761.0?	64.0	17.8	75	NE	.....	.....	2	.....	7	W	.....	0.327	8.3	.....	Prof. F. Cafiero.
Palermo	29.75	755.6	30.00	762.0	62.1	16.7	72	NE	2.5	1.1	.....	.....	6	.....	.....	0.157	4.0	.....	Prof. G. Cacciatore.
Caltanissetta	28.05	712.5	30.00?	761.9?	62.2	11.2	70	E	.....	.....	2	.....	6	NE	.....	0	0	.....	Prof. A. Pagani.
Syracuse	29.92	759.9	29.99	761.8	62.6	17.0	90	SE	.....	.....	2	.....	10	SE	.....	0	0	.....	Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R	29.56	750.8	30.11	764.9	62.6	17.0	61	ESE	0	0	.....	.....	0	.....	.....	0	0	.....	Prof. F. Brioschi.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals give the wind-force on the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,548.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo 879.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Siena, 348.5 m., or 1,142.3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Tokei (Yeddo)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	The Observatory.
Tokei (Yeddo) University	30.04	762.9	30.15	765.8	43.8	6.6	56	N	1	0.4	.....	2cs	.....	WSW	.....	0	0	Fair	Prof P. V. Veeder.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Aguascalientes	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	I. N. Marin, M. D.
Córdoba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	C. Peña, M. D.
Cuernavaca	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	L. Castillo, A. E.
Guadalajara	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. L. Perez.
Guanajuato	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. V. Fernandez.
Leon	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. M. Leal.
Mexico	23.08	586.3	30.17	766.4	59.0	10.0	78	Calm	0	0	.....	0	1s	.....	.....	0	0	Fair	Central Observatory.
Orizaba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	N. N.
Orizaba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	I. Orozco, M. D.
Pabellon, (Aguascalts)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. V. de Leon, M. E.
Puebla	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. B. Gonzalez.
Toluca	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. C. Velazquez.
Tlacotalpam	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. F. R. Bayly.
San Luis Potosi	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	G. Barroeta, M. D.
Vera-Cruz	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. J. Rossell.
Zacatecas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. A. Bonilla, M. E.
Puebla, (Catholic Institute)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	P. Spina. [M. M. D. D.
Morelia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Tena, F. L. Páramo.

Note.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,290 m., or 7,512.9 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,921.4 m., or 6,303.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m.,, or 8,611.8 ft.; San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

Furnished by the cooperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	29.97	761.1	29.97	761.1	49.3	9.6	.....	SSW	.....	.....	4	.....	.....	.....	.....	0.016	0.4	.....	
Groningen	29.56	758.5	29.92	759.9	42.6	5.9	.....	SSW	.....	.....	2	.....	.....	.....	.....	0.012	0.3	.....	
Helder	29.88	759.0	29.88	759.0	48.0	8.9	.....	SW	.....	.....	4	.....	.....	.....	.....	0.157	4.0	.....	
Hellevoetsluis	.....	.....	29.96	761.0	49.1	9.5	86	SSW	.....	.....	4	.....	.....	.....	.....	.....	.....	.....	
Utrecht	29.92	760.0	29.97	761.2	48.0	8.9	80	SSW	.....	.....	3	.....	5	.....	.....	0.008	0.2	Cloudy	H. v d Brink.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Barometer: Corrected for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	29.43	747.6	29.49	749.0	42.1	5.6	94	SSW	12.3	5.5			4			0.315	8.0		
Brönö	29.15	740.4	29.19	741.4	39.9	4.4	74	SW	18	8			10			0	0		
Christiania	29.38	746.2	29.52	749.9	42.8	6.0	75	SW	7	3			9			0	0		
Tromsö	29.22	742.1	29.26	743.2	33.8	1.0	89	Calm	0	0			10			0	0		

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

STATIONS.	Corrected for instrum'tal error and temperature. Inches.	Corrected for instrum'tal error and temperature. Millimeters.	Reduced to sea-level. Inches.	Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Angra, (Azores)	30.33	770.3	30.62	775.2	59.2	15.1	78	NE	4.3	1.9			3			0	0		Dr. J. A. Sampaio
Campo Major	29.19	741.5	30.22	767.5	62.8	17.1	47	NW	1.8	0.8			0			0	0		Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.16	766.0	30.24	768.2	70.9	21.6	45	ENE	4.9	2.2			2			0	0		Capt. D. A. de Cunha.
Lisbon, Observatory	29.88	759.0	30.21	768.2	59.9	15.5	67	N	18.9	8.3			4	WSW		0	0		The Staff.
Ponta Delgada, (Azores)	30.49	774.5	30.56	776.3	62.6	17.0	67	NE	4.9	2.2			3			0	0		

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

Naval Series. Vessels.	Sea or swell: Height scale 0–9	Sea or swell: Direction from—		
S. S. India.				A. D. Pedroso, Com'd't. Lt. S. A. P. de Mirando

Note.—The originals give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

STATIONS.	Corrected for instrum'tal error and temperature. Inches.	Corrected for instrum'tal error and temperature. Millimeters.	Reduced to sea-level. Inches.	Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Warsaw	29.63	752.7	30.07	763.7	40.6	4.8	82	WSW	9	4			10						Astronomical Obs.
Wilna	29.68	751.3	30.01	762.3	39.0	3.9	98	S	4	2			10					Heavy clouds	Astronomical Obs.
Dorpat	29.58	751.2	29.83	757.6	36.5	2.5	93	S	7	3			10						Prof. Dr. Weihrauch.
St. Petersburg	29.78	756.4	29.80	756.8	36.7	2.6	94	S	9	4			10					Light rain	Central Physical Obs.
Knopio	29.23	742.5	29.56	750.8	37.0	2.8	93	S	18	8			10						Ch. Forsten.
Kieff	29.50	749.4	30.17	766.4	34.7	1.5	94	SSE	4	2			10						Physical Cabinet.
Nikolaiev	30.21	767.4	30.28	769.2	38.3	3.5	78	S	0	0			10						Kurdukof.
Kertch	30.27	768.9	30.29	769.4	46.8	8.2	70	N	2	1			6						Lagorio.
Moscow	29.60	751.9	30.18	766.5	33.8	1.0	79	S	0	4			10						Meteorological Obs.
Lugan	30.08	764.0	30.29	769.4	32.0	0.0	85	Calm	0	0			10			Blank	Blank		Meteorological Obs.
Archangel	29.73	755.1	29.75	755.6	30.9	— 0.6	92	S	13	6			10						Ogorodnikof.
Tiflis	28.88	733.5	30.34	770.7	45.1	7.3	64	Calm	0	0			7						Physical Observatory.
Astrakhan	30.41	772.5	30.33	770.4	35.2	1.8	64	N	4	2			8						Sebastianof.
Kasan	29.77	756.1	30.05	763.3	32.7	0.4	87	Calm	0	0			9						Physical Cabinet.
Orenburg	29.89	759.3	30.30	769.5	24.1	— 4.4	61	NE	9	4			0						Tschernischei.
Ekaterinburg	28.93	734.7	29.91	759.8	26.5	— 2.9	83	W	4	2			10						Meteorological Obs.
Nukuss	30.25	768.3	30.50	774.6	30.6	— 0.8	83	SE	4	2			0						
Kasaly																			Bobrof.
Tashkend	28.90	734.1	30.73	780.5	30.7	— 0.7	63	Calm	0	0			10						Michelson.
Barnaul	29.87	758.7	30.45	773.4	9.9	—12.3	81	Calm	0	0			1						Meteorological Obs.
Yeniseisk	29.61	759.7	30.26	768.6	15.3	— 9.3	79	S	2	1			1						Marks.
Irkutsk																			Usolzef.
Oorga																			Mossin.
Peking, (China)	30.42	772.7	30.56	776.3	28.0	— 2.2	75	Calm	0	0			0						Physical Observatory.
Nertchinsk																			Meteorological Obs.
Vladivostock																			
Nikolaievsk, on the Amoor					5.9	—14.5	82	W	4	2			6k						

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Ekaterinburg, 306.4? m., or 1,005.2? ft.; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

STATIONS.	Corrected for instrum'tal error and temperature. Inches.	Corrected for instrum'tal error and temperature. Millimeters.	Reduced to sea-level. Inches.	Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Barcelona, Met. Obs'y																			Antonio Rave, Director.
Bilbao, Met. Obs'y																			Prof. Manuel de Naveran
Burgos, Met. Obs'y																			Domingo Martin y Perez.
Madrid, Royal Observatory	27.93	709.3	30.19	766.7	53.2	11.8	77	SW	4.5	2.00		2	0	NE		0	0	Light clouds	The Staff.
Murcia, Met. Obs'y																			Olayo Diaz, Director,
Santiago, Met. Obs'y																			R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.97	761.3	30.04	763.0	73.0	22.8	84	E	5.6	2.5		0	0			0.177	4.5	Clear	Benito Vines, S. J.
San Fernando, Naval Obs'y.	30.11	764.8	30.21	767.3	63.3	17.4	67	WNW	9.4	4.2		0	0			0	0		Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.			29.83	757.6	78.4	25.8	86	SE	0	0		2cs	2k			0.059	1.50	Clear	Leonardo de Tejeda, Chief of Engineers.

Note.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the cöoperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.34	745.3	29.38	746.3	37.0	2.8	.....	S	.....	.....	4	.....	10	.....	.....	Inap.	Inap.	Raining	
Umea	29.29	744.0	29.34	745.3	37.8	3.2	97	Calm	.....	.....	0	.....	8	.....	.....	0.024	0.6	.....	
Hernosand	29.33	745.0	29.38	746.3	39.7	4.3	85	SSW	.....	.....	2	.....	1	.....	.....	0.024	0.6	.....	
Stockholm	29.41	747.0	29.59	751.5	42.3	5.7	67	SSW	.....	.....	4	.....	2	.....	.....	0	0	.....	
Wisby	29.72	754.8	29.78	756.3	42.1	5.6	92	WSW	.....	.....	6	.....	3	.....	.....	0.028	0.7	.....	
Sub-Series.																			
Upsala	29.49	749.0	29.56	750.9	43.2	6.2	80	SW	14.1	6.3	.....	.....	6	WNW	WSW	0.001	0.02	.....	Dr. Hildebrandsson.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.69	728.7	30.16	766.0	40.3	4.6	78	SSW	.....	.....	1	.....	10	.....	.....	0	0	Covered	The Observatory.
Zurich	28.48	723.5	30.18	766.6	37.4	3.0	88	W	.....	.....	1	.....	10	.....	.....	0	0	Covered	The Observatory.

Note.—For Geneva the corresponding departures from the normal values are: Barometer, +1.2 mm; Thermometer, —1.6 cent.; Relative Humidity, +1 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	30.22	767.5	53.6	12.0	67	N	12	5.5	.....	.....	1	.....	NE	0	0	.....	The Observatory.
Fao, (Persian Gulf)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	B. Stefanidès.
Salonica	.....	.....	30.21	767.4	54.1	12.3	.....	NW	.....	.....	1	.....	5	.....	.....	.....	.....	.....	A. Bertrand.
Valona	.....	.....	30.10	764.5	65.3	18.5	.....	W	.....	.....	1	.....	2	.....	.....	0	0	Slightly cl'dy	Imperial Observatory.
Varna	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.96	761.0	30.07	763.8	70.0	21.1	50	NW	.....	.....	1	.....	0	.....	.....	0	0	Blue sky	Prof. C. V. A. Van Dyck

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	29.53	750.0	29.60	751.8	31.9	— 0.1	98	NW	3.0	1.3	.....	9	.....	.....	.....	.....	.....	.....	Hon. J. Ferguson.
Brockville, Ontario	.....	.....	30.37	771.4	22	— 5.6	.....	NW	1	0.4	.....	.....	10s	.....	NW	0.70	17.8	Cloudy	W. R. Rigg.
*Chatham, N. B	.....	.....	29.58	751.3	33	0.6	89	W	7	3.1	.....	2k	8ks	W	W	0.31	7.9	Cloudy	G. A. Blair.
Charlottetown, P. E. Island.	.....	.....	29.48	748.8	35	1.7	90	N	10	4.5	.....	.....	10n	.....	Calm	0.390	9.91	Light snow	H. J. Cundall, C. E.
Cornwall, Ontario	30.07	763.8	30.28	769.1	22.2	— 5.4	93	NW	.....	.....	4	0	3s	.....	.....	0.03	0.8	Fair	James Smith, M. A.
Dalhousie, N. B	29.67	753.6	29.70	754.4	33	0.6	89	NW	.....	.....	2	.....	.....	.....	.....	0.10	2.5	Threatening	H. A. Johnson.
Esquimault, B. C	29.082	761.59	29.093	766.22	45.3	7.4	92	SW	.....	.....	.....	3cs	0	.....	.....	0.03	0.8	Clear	W. H. Bevis.
*Father Point, Quebec	.....	.....	29 78	756.4	32	0.0	74	NW	20	8.9	.....	.....	10n	.....	N	0.55	14.0	Threatening	J. McWilliams.
Fredericton, N. B	29.67	753.6	29.74	755.4	34.8	1.6	82	NW	14.0	6.3	.....	.....	10ks	.....	NW	0.075	1.91	Cloudy	Prof. Harrison.
*Fort Garry, Manitoba	.....	.....	30.08	764.0	31	— 0.6	95	S	20	8.9	.....	5ks	5n	S	S	0.03	0.8	Cloudy	James Stewart.
Goderich, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	H. J. Strang, M. A
Granton, Ontario	29.32	744.7	30.50	774.7	26.2	— 3.2	97	N	.....	.....	1	0	0	.....	.....	0	0	Clear	James Grant.
*Halifax, N. S	29.44	747.8	29.68	753.3	37	2.8	81	NW	20	8.9	.....	0	5ks	.....	NW	0.068	1.73	Fair	F. Allison, M. A.
Hamilton, Ontario	30.07	763.8	30.47	773.9	26.5	— 3.1	85	S	.....	.....	1	0	.....	.....	.....	0	0	Clear	Geo. Dickson, M. A
Heart's Content, N. F	29.86	758.4	29.88	758.9	50	10.0	85	SW	.....	.....	4	.....	10	.....	.....	0	0	Overcast	E. Weedon.
*Kingston, Ontario	30.05	763.3	30.41	772 4	22	— 5.6	96	NW	7	3.1	.....	0	2ks	.....	Calm	Inap.	Inap.	Fair	S. Woods, M. A.
Little Glace Bay, N. S	29.38	746.2	29.42	747.3	39.4	4.1	85	SW	10	4.5	.....	7c	.....	SW	.....	0.13	3.3	Fair	C. H. Rigby.
*Montreal, Quebec	29.96	761.0	30.17	766.3	27	— 2.8	82	W	24	10.7	.....	.....	10n	.....	.....	0.04	1.0	Light snow	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.76	755.9	30.52	775.2	19	— 7.2	77	NW	7	3.1	.....	0	2ks	.....	NW	0	0	Fair	Rev. R. Mosley.
Peterboro, Ontario	29.66	753.4	30.47	773.9	22.4	— 5.3	69	NW	.....	.....	3	7k	0	.....	.....	0	0	.....	J. F. Jeffers, B. A.
Port Dover, Ontario	29.77	756.1	30.52	775.2	26	— 3.3	88	NW	6	2.7	.....	0	0	.....	.....	0	0	Clear	H. Morgan.
Port Hastings, N. S	29.33	745.0	29.38	746.2	40.4	4.7	.....	W	8	3.6	.....	.....	.....	.....	.....	0	0	Fine	Peter Grant.
Port Stanley, Ontario	29.81	757.2	30.50	774.7	31	— 0.6	86	N	2	0.9	.....	.....	10ks	.....	NW	0	0	Cloudy	M. Payne.
*Quebec, Quebec	29.60	751.8	29.94	760.5	32	0.0	90	SW	17	7.6	.....	.....	10n	.....	SW	0.52	13.2	Cloudy	Capt. Ashe, R. N.
*Rockliffe, Ontario	29.96	761.0	30.46	773.7	21	— 6.1	93	NW	15	6.7	.....	.....	10s	.....	NW	0.10	2.5	Light snow	W. H. McIntyre.
St. John, N. B	29.57	751.1	29.74	755.4	35	1.7	90	NW	9	4.0	.....	.....	10ks	.....	.....	0.02	0.5	Cloudy	G. Murdock, C. E.
*Saugeen, Ontario	29.75	755.6	30.49	774.4	27	— 2.8	77	Calm	0	0	.....	.....	10n	.....	.....	0	0	Cloudy	K. Stewart.
Stayner, Ontario	.....	.....	30.48	774.2	26	— 3.3	89	NW	10	4.5	.....	.....	10ks	.....	NW	0.10	2.5	Cloudy	R. J. Cole.
Stratford, Ontario	29.13	739.9	30.50	774.7	24.0	— 4.4	80	NW	3.0	1.3	.....	cs	2s	.....	.....	0	0	Fine	C. J. MacGregor, M. A.
*Sydney, C. B	29.30	744.2	29.33	745.0	39	3.9	79	SW	20	8.9	.....	.....	10ks	.....	SW	0.26	6.6	Cloudy	T. C. Hill.
*Toronto, Ontario	30.10	764.5	30.51	774.9	29	— 1.7	88	NW	9	4.0	.....	.....	10ks	.....	NW	Inap.	Inap.	Cloudy	Magnetic Observatory.
Windsor, N. S	29.52	749.8	29.91	752.1	36.0	2.2	90	NW	16	7.2	.....	.....	10n	.....	.....	0.12	3.0	Fair	Prof. John E. Oram.
Woodstock, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Montgomery.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	49.0	9.4	100	SW	.....	.....	.....	5k	5s	SW	.....	1.66	42.2	Fair	John Delany.

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	30.04	763.0	30.28	769.1	28	— 2.2	88	W	10	4.5	.....	0	6s	.....	W	Inap.	Inap.	Fair	
Alpena, Michigan	29.84	757.9	30.53	775.4	26	— 3.3	76	NW	3	1.3	.....	.....	10s	.....	NW	0	0	Cloudy	
Atlantic City, New Jersey	30.33	770.4	30.35	770.9	32	0.0	69	NW	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Augusta, Georgia	30.16	766.1	30.35	770.9	48	8.9	66	NE	4	1.8	.....	8cs	Sm'e	W	NE	0	0	Fair	
Baltimore, Maryland	30.37	771.4	30.42	772.7	36	2.2	62	NW	4	1.8	.....	Haze	Sm'e	Calm	Calm	0	0	Fair	
Barnegat, New Jersey	30.29	769.4	30.31	769.9	33	0.6	65	NW	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Bismarck, Dakota	28.17	715.5	29.91	759.7	29	— 1.7	89	SE	14	6.3	.....	.....	10s	.....	SE	0	0	Cloudy	
Boise City, Idaho	27.27	692.6	29.88	758.9	48	8.9	56	S	8	3.6	.....	.....	10s	.....	Calm	Inap.	Inap.	Cloudy	
Boston, Massachusetts	29.94	760.5	30.10	764.5	32	0.0	59	W	17	7.6	.....	2cs	0	W	.....	0.01	0.3	Clear	
Brackettville, Texas	28.67	728.2	29.69	754.1	53	11.7	79	NW	8	3.6	.....	8k	0	W	.....	0.40	10.2	Cloudy	
Breckenridge, Minnesota	29.17	740.9	30.22	767.6	29	— 1.7	94	SE	18	8.0	.....	.....	10s	.....	Calm	0	0	Cloudy	
Brownsville, Texas	29.71	754.6	29.78	756.4	73	22.8	85	SE	16	7.2	.....	10c;k	0	W;SE	.....	0	0	Cloudy	
Buffalo, New York	29.70	754.4	30.45	773.4	30	— 1.1	78	W	8	3.6	.....	10k	0	NW	.....	0	0	Cloudy	
Burlington, Vermont	29.92	760.0	30.20	767.1	28	— 2.2	88	NW	11	4.9	.....	0	8s	.....	NW	0	0	Fair	
Cairo, Illinois	29.87	758.7	30.28	769.1	40	4.4	65	N	7	3.1	.....	5c	0	Calm	.....	0	0	Fair	
Camp Grant, Arizona	25.22	640.6	30.02	762.5	42	5.6	50	N	.....	.....	1	0	1s	.....	Calm	0	0	Clear	
Camp Verde, Arizona	26.87	682.5	30.36	771.1	33	0.6	51	NW	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Campo, California	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Cape Hatteras, N. Carolina	30.27	768.8	30.28	769.1	49	9.4	71	NE	14	6.3	.....	2c	0	NE	.....	0	0	Fair	
Cape Henry, Virginia	30.32	770.1	30.35	770.9	44	6.7	68	NW	17	7.6	.....	0	0	.....	.....	0	0	Clear	
Cape Lookout, N. Carolina	30.33	770.4	30.34	770.6	48	8.9	62	NE	22	9.8	.....	0	0	.....	.....	0	0	Clear	
Cape May, New Jersey	30.32	770.1	30.35	770.9	36	2.2	62	NW	36	16.1	.....	2c	0	W	.....	0	0	Fair	
Charleston, South Carolina	30.25	768.3	30.32	770.1	54	12.2	79	N	11	4.9	.....	1cs	0	E	.....	0	0	Clear	
Cheyenne, Wyoming	24.08	611.6	30.02	762.5	22	— 5.6	72	W	8	3.6	.....	0	0	.....	.....	0	0	Cloudy	
Chicago, Illinois	29.68	753.9	30.40	772.1	40	4.4	65	NE	4	1.8	.....	10k	0	NW	.....	0	0	Cloudy	
Cincinnati, Ohio	29.70	754.4	30.38	771.6	36	2.2	71	E	5	2.2	.....	2cs	Fog	W	E	0	0	Foggy	
Cleveland, Ohio	29.74	755.4	30.51	774.9	32	0.0	79	E	5	2.2	.....	.....	10s	.....	Calm	0	0	Cloudy	
Concho, Texas	27.99	710.9	29.67	753.6	50	10.0	93	NE	4	1.8	.....	8cs	0	NE	.....	1.60	40.6	Cloudy	
Corsicana, Texas	29.38	746.2	29.84	757.9	59	15.0	94	E	10	4.5	.....	.....	10s	.....	E	1.37	34.8	Cloudy	
Davenport, Iowa	29.72	754.9	30.40	772.1	35	1.7	79	E	8	3.6	.....	.....	10s	.....	SW	0	0	Cloudy	
Denison, Texas	29.17	740.9	29.91	759.7	50	10.0	93	E	12	5.4	.....	.....	10ks	.....	SE	1.06	26.9	Cloudy	
Denver, Colorado	24.90	632.4	30.12	765.0	26	— 3.3	76	S	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Detroit, Michigan	29.76	755.9	30.48	774.2	30	— 1.1	78	N	3	1.3	.....	.....	10s	.....	N	0	0	Cloudy	
Dodge City, Kansas	27.49	698.2	29.85	758.2	38	3.3	100	N	22	9.8	.....	.....	10n	.....	N	0.13	3.3	Light rain	
Dubuque, Iowa	29.66	753.4	30.40	772.1	36	2.2	90	SE	4	1.8	.....	.....	10s	.....	Calm	0	0	Cloudy	
Duluth, Minnesota	29.68	753.9	30.40	772.1	31	— 0.6	89	Calm	0	0	.....	.....	10s	.....	Calm	0.10	2.5	Cloudy	
Eagle Pass, Texas	29.05	737.9	29.79	756.7	55	12.8	81	NW	7	3.1	.....	0	5ks	.....	S	0.13	3.3	Clearing	
Eastport, Maine	29.71	754.6	29.78	756.4	37	2.8	71	NW	13	5.8	.....	0	8s	.....	NW	0.39	9.9	Fair	
Erie, Pennsylvania	29.70	754.4	30.46	773.7	34	1.1	61	N	4	1.8	.....	5k	0	N	.....	0	0	Cloudy	
Escanaba, Michigan	29.79	756.7	30.50	774.7	30	— 1.1	78	E	6	2.7	.....	.....	10n	.....	Calm	0.02	0.5	Light snow	
Florence, Arizona	28.47	723.1	30.07	763.8	35	1.7	52	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Fort Bayard, New Mexico	24.02	610.1	30.02	762.5	38	3.3	63	NE	8	3.6	.....	.....	10s	.....	NE	0.05	1.3	Cloudy	
Fort Craig, New Mexico	25.54	648.7	.....	.....	41	5.0	82	Calm	0	0	.....	.....	10s	.....	Calm	0.06	1.5	Threatening	
Fort Gibson, Indian Ter	29.50	749.3	30.05	763.3	49	9.4	85	N	2	0.9	.....	.....	10s	.....	Calm	0.71	18.0	Cloudy	
Fort Griffin, Texas	28.59	726.2	29.84	757.9	55	12.8	93	E	3	1.3	.....	.....	10n	.....	Calm	2.21	56.1	Light rain	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	28.74	730.0	29.85	758.2	51	10.6	100	NE	.....	.....	5	.....	10n	.....	SW	0.72	18.3	Light rain	
Galveston, Texas	29.83	757.7	29.87	758.7	67	19.4	94	E	13	5.8	.....	.....	10s	.....	S	0	0	Cloudy	
Grand Haven, Michigan	29.79	756.7	30.48	774.2	30	— 1.1	89	E	7	3.1	.....	.....	10s	.....	Calm	0	0	Cloudy	
Indianapolis, Indiana	29.56	750.8	30.38	771.6	34	1.1	69	Calm	0	0	.....	2cs	Sm'e	Calm	.....	0	0	Clear	
Indianola, Texas	29.77	756.1	29.80	756.9	71	21.7	95	SE	22	9.8	.....	.....	10ks	.....	S	0	0	Cloudy	
Jacksboro, Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Jacksonville, Florida	30.15	765.8	30.18	766.6	61	16.1	77	NE	7	3.1	.....	0	0	.....	.....	0	0	Clear	
Keokuk, Iowa	29.66	753.4	30.31	769.9	35	1.7	70	E	10	4.5	.....	0	4s	.....	Calm	0	0	Fair	
Key West, Florida	30.03	762.7	30.08	763.5	73.5	23.1	74	NE	17	7.6	.....	0	5ks	.....	E	0.01	0.3	Fair	
Kittyhawk, North Carolina	30.33	770.4	30.36	771.1	47	8.3	70	N	24	10.7	.....	0	0	.....	.....	0	0	Clear	
Knoxville, Tennessee	29.31	744.5	30.36	771.1	36	2.2	70	Calm	0	0	.....	0	Sm'e	.....	.....	0	0	Smoky	
La Crosse, Wisconsin	29.60	751.8	30.38	771.6	35	1.7	90	SE	2	0.9	.....	.....	10n	.....	Calm	0.33	8.4	Light snow	
La Mesilla, New Mexico	26.04	661.4	30.19	766.8	41	5.0	74	Calm	0	0	.....	0	5s	.....	Calm	0	0	Fair	
Laredo, Texas	.....	.....	.....	.....	68	20.0	90	S	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Leavenworth, Kansas	29.34	745.2	30.20	767.1	43	6.1	75	SE	5	2.2	.....	.....	10s	.....	SE	0.05	1.3	Cloudy	
Los Angeles, California	29.70	754.4	30.04	763.0	54	12.2	38	N	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Louisville, Kentucky	29.77	756.1	30.36	771.1	39	3.9	71	NE	7	3.1	.....	1c	Fog	NE	NE	0	0	Fair	
Lynchburg, Virginia	29.70	754.4	30.41	772.4	41	5.0	57	Calm	0	0	.....	0	Haze	.....	Calm	0	0	Hazy	
Maricopa Wells, Arizona	.....	.....	.....	.....	40	4.4	31	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Marquette, Michigan	29.70	754.4	30.46	773.7	27	—2.8	77	S	4	1.8	.....	.....	10s	.....	Calm	0	0	Cloudy	
Mason, Texas	28.17	715.5	29.90	759.4	57	13.9	81	N	12	5.4	.....	.....	10s	.....	.....	0.78	19.8	Cloudy	
Memphis, Tennessee	29.86	758.4	30.19	766.8	45	7.2	60	NE	4	1.8	.....	10cs	Sm'e	SW	NE	0	0	Cloudy	
Milwaukee, Wisconsin	29.42	747.3	30.45	773.4	35	1.7	90	E	3	1.3	.....	.....	10s	.....	.....	0.14	3.6	Cloudy	
Mobile, Alabama	30.10	764.5	30.14	765.5	55	12.8	80	NE	6	2.7	.....	.....	10s	.....	S	0	0	Cloudy	
Montgomery, Alabama	29.99	761.7	30.24	768.1	48	8.9	77	NW	2	0.9	.....	10ck	Sm'e	Calm	Calm	0	0	Cloudy	
Morgantown, West Virginia	29.35	745.5	30.48	774.2	31	— 0.6	68	Calm	0	0	.....	.....	Sm'e	.....	.....	0	0	Clear	
Mt. Washington, N. H.	23.33	592.6	29.69	754.1	3	—16.1	100	NW	108	48.3	.....	.....	Fog	.....	NW	0.78	19.8	Foggy	
Nashville, Tennessee	29.75	755.6	30.31	769.9	40	4.4	73	NE	1	0.4	.....	8cs	0	N	.....	0	0	Fair	
New Haven, Connecticut	30.12	765.0	30.25	768.3	34	1.1	69	NW	6	2.7	.....	0	0	.....	.....	0	0	Clear	
New London, Connecticut	30.13	765.3	30.18	766.6	34	1.1	61	NW	25	11.2	.....	0	0	.....	.....	0	0	Clear	
New Orleans, Louisiana	30.00	762.0	30.06	763.5	61	16.1	82	E	12	5.4	.....	.....	10ks	.....	Calm	0	0	Cloudy	
Newport, Rhode Island	30.10	764.5	30.15	765.8	34	1.1	70	W	25	11.2	.....	0	0	.....	.....	0	0	Clear	
New York, New York	30.10	764.5	30.29	769.4	34	1.1	52	NW	14	6.3	.....	0	0	.....	.....	0	0	Clear	
Norfolk, Virginia	30.34	770.6	30.40	772.1	39	3.9	71	N	11	4.9	.....	0	Haze	.....	.....	0	0	Clear	
North Platte, Nebraska	27.22	691.4	29.95	760.7	23	— 5.0	86	N	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Olympia, Washington Ter.	29.92	760.0	29.96	761.0	47	8.3	92	SW	5	2.2	.....	.....	10n	.....	SW	1.24	31.5	Light rain	
Omaha, Nebracka	29.07	738.4	30.19	766.8	39	3.9	81	NE	2	0.9	.....	.....	10s	.....	Calm	Inap.	Inap.	Cloudy	
Oswego, New York	30.07	763.8	30.41	772.4	30	—1.1	73	NW	14	6.3	.....	8k	0	NW	.....	Inap.	Inap.	Cloudy	
Pembina, Dakota	29.24	742.7	30.10	764.5	32	0.0	89	S	24	10.7	.....	.....	10s	.....	S	0.03	0.8	Cloudy	
Philadelphia, Pennsylvania	30.32	770.1	30.38	771.6	33	0.6	69	NW	18	8.0	.....	0	Fg;sm.	.....	Calm	0	0	Clear	
Phœnix, Arizona	.....	.....	.....	.....	44	4.4	40	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Pike's Peak, Colorado	17.74	450.6	29.94	760.5	4	—15.6	74	NE	28	12.5	.....	0	0	.....	.....	0	0	Clear	
Pioche, Nevada	24.17	613.9	29.94	760.5	32	0.0	40	NW	7	3.1	.....	0	0	.....	.....	0	0	Clear	
Pittsburg, Pennsylvania	29.60	751.8	30.46	773.7	34	1.1	69	N	5	2.2	.....	5k	0	N	.....	0	0	Fair	
Port Huron, Michigan	29.78	756.4	30.50	774.7	28	— 2.2	88	NW	7	3.1	.....	.....	10ks	.....	NW	0	0	Cloudy	
Portland, Maine	29.94	760.5	29.99	761.7	36	1.7	61	W	10	4.5	.....	2k	Haze	NW	.....	0.02	0.5	Fair	
Portland, Oregon	30.01	762.2	30.11	764.8	49	9.4	93	Calm	0	0	.....	.....	10n	.....	Calm	0.87	22.1	Light rain	
Prescott, Arizona	24.88	631.9	30.24	768.1	23	— 5.0	60	SW	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Punta Rassa, Florida	30.11	764.8	30.13	765.3	66	18.9	78	NE	8	3.6	.....	0	2s	.....	E	0	0	Clear	
Red Bluff, California	29.82	757.4	30.19	766.8	47	8.3	92	NW	2	0.9	.....	Haze	1s	.....	Calm	0	0	Fair	
Rochester, New York	29.77	756.1	30.43	772.9	29	— 1.7	78	NW	11	4.9	.....	.....	10s	.....	NW	Inap.	Inap.	Cloudy	
Roseburg, Oregon	29.57	751.1	30.14	765.5	52	11.1	96	NW	1	0.4	.....	.....	10n	.....	.....	0.02	0.5	Light rain	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Sacramento, California	30.10	764.5	30.18	766.6	49	9.4	85	S	4	1.8	.....	1c	0	W	.....	0	0	Clear.	
St. Louis, Missouri	29.70	754.4	30.30	769.6	36	2.2	80	E	8	3.6	.....	0	Sm'e	.....	.....	0	0	Clear	
St. Marks, Florida	30.17	766.3	30.19	766.8	54	12.2	78	E	8	3.6	.....	5c	0	W	.....	0	0	Fair	
St. Paul, Minnesota	29.41	747.0	30.28	769.1	33	0.6	79	SE	2	0.9	.....	.....	10s	.....	Calm	0.26	6.6	Cloudy	
Salt Lake City, Utah	25.86	656.8	30.19	766.8	32	0.0	79	SE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
San Antonio, Texas	29.10	739.1	29.66	753.4	62	16.7	100	NW	12	5.4	.....	.....	10n	.....	NW	1.27	32.3	Thunder-storm.	
San Diego, California	30.00	762.0	30.07	763.8	53	11.7	30	NE	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Sandusky, Ohio	29.76	755.9	30.48	774.2	34	1.1	79	SW	5	2.2	.....	Haze	7s	Calm	Calm	0	0	Fair	
Sandy Hook, New Jersey	30.27	768.8	30.29	769.4	35	1.7	61	NW	31	13.9	.....	1k	0	NW	.....	0	0	Clear	
San Francisco, California	30.12	765.0	30.18	766.6	52	11.1	93	Calm	0	0	.....	0	Fog	.....	Calm	0	0	Foggy	
Santa Fé, New Mexico	23.24	590.3	29.78	756.4	30	—1.1	100	N	4	1.8	.....	Haze	2s	.....	N	0.09	2.3	Fair	
Savannah, Georgia	30.19	766.8	30.28	769.1	51	10.6	78	NE	4	1.8	.....	2c	0	W	.....	0	0	Fair	
Shreveport, Louisiana	29.81	757.2	30.03	762.7	55	12.8	74	NE	8	3.6	.....	5c	0	S	.....	Inap.	Inap.	Fair	
Smithville, North Carolina	30.33	770.4	30.37	771.4	44	6 7	76	N	10	4.5	.....	2c	0	W	.....	0	0	Fair	
Springfield, Massachusetts	30.02	762.5	30.16	766.1	33	0.6	60	NW	6	2.7	.....	2k	0	NW	.....	Inap.	Inap.	Fair	
Stanwix, Arizona	.....	.....	.....	.....	38	3.3	38	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Stockton, Texas	26.85	682.0	29.85	758.2	44	6.7	84	W	16	7.2	.....	.....	10s	.....	W	0.41	10.4	Cloudy	
Thatcher's Island, Mass	30.01	762.2	30.06	763.5	34	1.1	69	NW	36	16.1	.....	1k	0	NW	.....	0	0	Clear	
Toledo, Ohio	29.76	755.9	30.48	774.2	36	2.2	80	Calm	0	0	.....	0	8s	.....	Calm	0	0	Cloudy	
Tucson, Arizona	27.62	701.5	30.17	766.3	36	2.2	46	SE	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Tybee Island, Georgia	30.23	767 8	30.26	768.6	58	14.4	93	NE	16	7.2	.....	1c	0	Calm	.....	0	0	Clear	
Umatilla, Oregon	29.64	752.8	.....	.....	52	11.1	86	SW	16	7.2	.....	.....	10s	.....	W	0.17	4.3	Cloudy	
Vicksburg, Mississippi	29.86	758.4	30.12	765.0	55	12.8	66	E	6	2.7	.....	10k	.....	SE	.....	0	0	Cloudy	
Virginia City, Montana	24.29	617.0	29.77	756 1	30	—1.1	68	SE	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Visalia, California	29.82	757.4	30.21	767.3	41	5.0	91	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Washington, D. C	30.32	770.1	30.44	773.2	33	0.6	79	NW	3	1.3	.....	Haze	Sm'e	N	N	0	0	Clear	
Wickenburg, Arizona	.....	.....	.....	.....	33	0.6	14	NE	.....	.....	.....	0	0	.....	.....	.....	.....	Clear	
Wilmington, N. Carolina	30.30	769.6	30.38	771.6	42	5.6	65	NE	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Winnemucca, Nevada	25.78	654.8	30.14	765.5	30	—1.1	78	NE	8	3.6	.....	5cs	.....	Calm	.....	0	0	Fair	
Wood's Holl, Mass	30.07	763.6	30.13	765.3	36	2.2	61	NW	25	11.2	.....	0	0	.....	.....	0.02	0.5	Clear	
Yankton, Dakota	28.89	733.8	30.24	768.1	33	0.6	89	SE	1	0.4	.....	.....	10s	.....	Calm	0.23	5.8	Cloudy	
Yuma, Arizona	29.89	759.2	30.06	763.5	47	8.3	30	NE	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Sub-Series.																			
York Factory, B. A	29.62	760.0	29.98	761.5	20.5	—6.4	93	S	15	6.7	.....	5cs	0	SW	.....	0	0	Fair	J. Fortescue, W. Wood.
Havana, Cuba, W. I	29.98	761.0	29.98	761.5	74	23.3	81	SE	2.4	1.1	.....	0	0	.....	.....	0.06	1.5	Clear	Chas. Hasselbrink.
Kingston, Jamaica, W. I	30.06	763.5	30.07	763.8	78	25.6	90	Calm	0	0	.....	2c	2s	E	.....	0	0		James Gall.
Navassa, W. I	29.82	757.4	29.90	759.4	82	27.8	.....	NE	25	11.2	.....	.....	.....	.....	.....	0	0	Fair	F. M Everett.
St. Thomas, W. I	.....	.....	.....	.....	83	28.3	83	Calm	0	0	.....	8c	2ks	Calm	.....	0.15	3.8	Clearing	G. O. Ge'lich.
Paramaribo, D. Guiana, S. A	.....	.....	29.93	760.2	85	29.4	72	E	.....	.....	2	4c	5k	E	.....	0	0	Fair	C. J. Hering.
Batavia, Dutch Guiana, S. A	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Dr. H. Groot.
Medellin, Colombia, S. A	25.19	639.8	.....	.....	66.0	18.9	89	NW	.....	.....	1	.....	9ks;s	.....	.....	6.65	16.5	Cloudy	Thomas Herran.
Honolulu, Oahu, H. I	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Daniel Smith.
Makawao, Maui, H. I	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.: Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.8 ft., or 313.3 m.: Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.: Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Ploche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,362.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,323 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Ploche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fe, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
NavyYard Mare Island, Cal.	30.17	766.3	51	10.6	47	8.3	100	Calm	0	0	.....	.....	1	.....	.....	0	0	.....	.....	Heavy mist..	
Navy Yard, Pensacola, Fla.	30.25	768.3	.....	.....	61	16.1	77	NE	11	4.9	.....	.....	10	.....	.....	0	0	.....	.....	D. clouds.....	
NavyYard, Portsmouth, N.H	30.05	763.3	59	15.0	33	0.6	89	NW	13	5.8	.....	.....	.....	.....	SW	0	0	.....	.....	Clear	
Naval Hospital, Yokohama, Japan.....	30.00	762.0	54.5	12.5	46.5	8.1	44	NE	.....	.....	5	.....	7k	.....	WSW	0	0	.....	.....	Cloudy.....	
Adams. Punta Arenas, Patagonia.	29.66	753.4	53	11.7	53	11.7	67	W	.....	.....	1	.....	4	.....	W	0	0	None	.....	D. clouds....	
Alert. Yokohama, Japan.....	30.14†	765.5†	49	9.4	49	9.4	78	NE	.....	.....	4	.....	7	.....	NNE	.....	.....	.....	.....	D. clouds.....	
Alliance, Constantinople, Turkey.	30.30	769.6	65	18.3	60	15.6	50	N	.....	.....	2–3	.....	1	.....	N	.....	.....	.....	.....	Pleasant.....	
Ashuelot. Tientsin, China.....	30.58	776.7	38	3.3	26	— 3.3	100	SSW	.....	.....	1	.....	1	.....	Calm	.....	.....	.....	.....	D. clouds.....	
Canonicus, New Orleans, La.....	30.03	762.7	47	8.3	62	16.7	83	E	.....	.....	2	.....	10	.....	SE	.....	.....	.....	.....	Cloudy.....	
Colorado, New York, N. Y.....	30.27	768.8	37	2.8	36	2.2	61	NW	22	9.8	.....	.....	3	.....	NW	0	0	.....	.....	Fair.....	
Despatch, Constantinople, Turkey.	30.33	770.4	75	23.9	57	13.9	94	NE	.....	.....	2	.....	1	.....	Calm	.....	.....	.....	.....	Clear	
Essex, N. 4° 04′ W. 1° 04′.....	29.87	758.7	84	28.9	87	30.6	88	SSW	.....	.....	2	.....	3	.....	W	.....	.....	Smooth	S	D. clouds.....	
Franklin, Norfolk, Va.....	30.46	773.7	43	6.1	43	6.1	??	NNW	11	4.9	.....	.....	1	.....	NNW	0	0	.....	.....	Clear	
Guard, N. 33° 00′, W. 33° 51′.....	30.55	776.0	70	21.1	69	20.6	75	ENE	.....	.....	3–5	.....	3	.....	E	.....	.....	Long	N&E	D. clouds.....	
Lackawana, San Francisco, Cal.....	30.23	767.8	.....	.....	56	13.3	87	Calm	.....	.....	0	.....	3	.....	.....	.....	.....	.....	.....	Drizzling.....	
Marion, Smyrna, Turkey.....	30.19	766.8	62	16.7	64	17.8	58	W	.....	.....	1	.....	0	.....	.....	0	0	Smooth	W	Blue sky.....	
Michigan, Erie, Pa.....	29.98	761.5	73	22.8	38	3.3	63	NNW	.....	.....	2	.....	5	.....	NW	.....	.....	.....	.....	Cloudy.....	
Monongahela, N. 34° 22′, E. 20° 20′.....	30.08	764.0	67	19.4	67	19.4	89	E	.....	.....	5–6	.....	kn	.....	.....	Moderate.	Moderate.	Moderate.	E	Raining.....	
New Hampshire, Port Royal, S.C.....	30.40	772.1	.....	.....	57	13.9	69	NE	17	7.6	.....	.....	5	.....	NE	0	0	.....	.....	D. clouds.....	
Omaha, Callao, Peru.....	30.03	762.7	73	22.8	72	22.2	90	SE	1	0.4	.....	.....	10	.....	SE	0	0	Smooth	.....	Dull	
Onward, Callao, Peru.....	30.02†	762.5†	74	23.3	71	21.7	90	SSE	.....	.....	1	.....	10	.....	.....	.....	.....	Long	W	Overcast.....	
Ossipee, Norfolk, Va.....	30.46	773.7	70	21.1	43	6.1	67	NNW	.....	.....	3	.....	0	.....	.....	.....	.....	.....	.....	Blue sky.....	
Palos, Shanghai, China.....	30.57	776.5	50	10.0	40	4.4	81	NNW	.....	.....	2	.....	0	.....	.....	.....	.....	.....	.....	Clear.....	
Plymouth, Hampton Roads, Va.....	30.39	771.9	55	12.8	43	6.1	92	NNW	.....	.....	4	.....	0	.....	.....	.....	.....	Moderate.	N	Clear	
Powhatan, Hampton Roads, Va.....	.....	.....	44	6.7	44	6.7	92	N	6.0	2.7	.....	.....	0	.....	.....	0	0	.....	.....	Clear.....	
Ranger, Shanghai, China.....	30.64	778.2	67	19.4	44	6.7	84	NNW	.....	.....	1	.....	1	.....	Calm	.....	.....	.....	.....	Clear.....	
Rio Bravo, Brownsville, Texas.....	29.70	754.4	.....	.....	74	23.3	86	SSE	.....	.....	3	.....	7	.....	SW	.....	.....	.....	.....	D. clouds.....	
Santee, Annapolis, Md.....	30.46	773.7	56	13.3	36	2.2	61	NW	.....	.....	2	.....	1	.....	W	0	0	.....	.....	Clear.....	
Saratoga, Hampton Roads, Va.....	.....	.....	.....	.....	55	12.8	93	E	.....	.....	4	.....	3	.....	E	0	0	.....	.....	Clear.....	
St. Louis, League Island, Pa	30.20	767.1	35	1.7	32	0.0	79	NW	5	2.2	.....	.....	0	.....	.....	0	0	.....	.....	Clear	
Swatara, Hampton Roads, Va.....	30.40	772.1	.....	.....	45	7.2	68	NNW	.....	.....	5	.....	1	.....	N&W	.....	.....	.....	.....	D. clouds.....	
Tennessee, Yokohama, Japan.....	30.15	765.8	71	21.7	48	8.9	49	NNE	12	5.4	.....	.....	9	.....	W	0	0	Light	N&E	D. clouds.....	
Trenton, Villefranche, France.....	30.19	766.8	.....	.....	63	17.2	62	SSW	5	2.2	.....	.....	5	.....	SW	0	0	.....	.....	D. clouds.....	
Vandalia, Villefranche, France.,...	30.13	765.3	64	17.8	61	16.1	71	SW	.....	.....	1–2	.....	3	.....	SE	.....	.....	.....	.....	D. clouds.....	
Wabash, Boston, Mass.....	30.10	764.5	52	11.1	33	0.6	89	NW	18	8.0	.....	.....	1	.....	NW	0	0	.....	.....	D. clouds.....	
Wyoming, Washington, D. C.....	30.51†	774.9†	50	10.0	35	1.7	.....	NW	.....	.....	1	.....	1	.....	.....	.....	.....	.....	.....	Hazy.....	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. ‡ Barometer corrected for instrumental error and reduced to sea-level. The position given for the Plymouth is that at noon, local time, instead of that at 7:35 a. m., Washington time.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.	Character.	Direction from—		
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—				
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of ——————, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama, Panama Bay			29.68	753.9	78	25.6	95	NNW			3		8		NW			D. clouds	Capt. Howard.
S. S. City of Peking, N. 30° 57′, W. 140° 59′			30.59*	777.0*	52	11.1	73	NNE			1		0			Moderate.	NW	Blue sky	Lt. Z. L. Tanner, U.S.N
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio, N. 30° 10′, E. 154° 50′			30.17	766.3	72	22.2		S			5		8		WSW	Short	SSW	D clouds	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

NOTE.—The originals give the wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. *Aneroid.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson.
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.

S. S. Belgic																			Capt. John Metcalf.
S. S. Gaelic, N. 35° 20′, W. 131° 2′			30.27*	768.8*	63	17.2	94	N			5		ks		NW	Heavy	NW	Raining	Capt. W. H. Kidley
S. S. Oceanic, N. 38° 0′, E. 149° 4′			29.96	761.0	46	7.8	54	NNW			5-7		8		NW	High	NW	Showery	Capt. H. Parsell.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. *Aneriod.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig, N. 49° 48′, W. 14° 21′	W	10	30.00	762.0	53.5	11.9	64	WNW			6		ck		NW	Very rough		Squally	Capt. K. Undütsch.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio, N. 41° 42′, W. 61° 39′			29.90	759.4	51.5	10.8	93	WSW			6		k		WSW	High	W	Blue sky	Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, nor distinguish between upper and lower clouds.

UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell		Weather.	Observer
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Lo'wr	Upper.	Lower.	Character.	Direction From—		
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second	0—10.	0—10.	0—10.	From—	From—				
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, N. 50° 59', W. 12° 25'			29.92*	760.0*	57	13.9	94	WNW			6		7		W	Moderate.	NNW	Cloudy	Captain Sargent.
S. S. Ohio. Liverpool			29.46	748.3	46	7.8	92	S			3		10		S			Overcast	Captain Morrison.
S. S. Pennsylvania																			Captain Harris.

Note.—The originals give the barometer as read off; the wind-force by the scale 0 to 12. *Aneroid; correction for elevation applied, instrumental error not known.

RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

S. S. Nederland																			Capt. Randle.
S. S. Switzerland, N. 49° 33', W. 20° 04'			30.30*	769.6*	53	11.7		WNW	25	11.2			10		WSW; WNW	Heavy	W	Overcast	Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

*Aneroid; regulated to standard at Antwerp.

ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

S. S. Hibernian																			Capt. W. Richardson.
S. S. Scandinavian																			

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, Kennebunk, Maine			29.97	761.2	44	6.7	76	NW	13	5.8			0					Clear	Capt. James Jorgensen.

Note.—The originals for the schooner Addie Fuller give the amount of cloudiness by the scale 0 to 4; the barometer as read off.

Collated at the Office of the Chief Signal Officer of the Army, Washington, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer, U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON NOVEMBER 20, 1877.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.

7:35 A. M. WASHINGTON mean time.

1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:38 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.

1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Barometer: Corrected for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours	.....	.....	30.21	767.3	68.4	20.2	62	Calm	.....	.....	0	.....	1	.....	.....	0	0	Very fair	Michel.
Algiers	.....	.....	30.04	762.9	61.9	16.6	75	W	.....	.....	1	.....	1	.....	.....	0.205	5.2	Very fair	Peter.
La Calle	.....	.....	29.98	761.5	60.4	15.8	91	NW	.....	.....	2	.....	9	.....	.....	0.35	9.	Covered	Fleury.
Tunis	.....	.....	29.95	760.6	66.6	19.2	70	W	.....	.....	3	.....	6	.....	.....	0	0	Cloudy	Jacques.
Sfax	.....	.....	29.95	760.7	59.0	15.0	.....	NW	.....	.....	3	.....	3	.....	.....	0	0	Pretty fair	Husson.
Saida	.....	.....	30.18	766.5	60.3	15.7	41	NNW	.....	.....	2	.....	2	.....	.....	0	0	Fair	Millot.
Tebessa	.....	.....	30.00	762.0	.....	.....	.....	Calm	.....	.....	0	.....	9	.....	.....	.....	.....	Covered	Bourgeois.
Geriville	.....	.....	30.10	764.6	49.3	9.6	92	NW	.....	.....	3	.....	4	.....	.....	0	0	Cloudy	Lemaillot.
Laghouat	.....	.....	30.12	765.1	60.8	16.0	41	N	.....	.....	2	.....	2	.....	.....	0	0	Fair	Guyot.
Biskra	.....	.....	30.02	762.5	69.4	20.8	40	NW	.....	.....	1	.....	0	.....	.....	0	0	Clear	Kuntz.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,330? m.; or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

STATIONS.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Barometer: Corrected for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Agram	29.20	741.6	29.75	755.6	50.0	10.0	72	Calm	.....	.....	0	.....	7	.....	.....	0.724	18.4	Raining	Prof. Ivan Stozir
Cracow, I. R. Observatory	28.95	735.4	29.72	755.0	45.7	7.6	83	NE	.....	.....	2	.....	10	.....	.....	0	0	.....	Dr. Wierzbiski.
Eperies	28.96	735.5	29.86	758.5	37.4	3.0	76	S	.....	.....	4	.....	10s	.....	.....	0	0	.....	Julius Mikolik.
Gratz	28.48	723.4	29.75	755.7	43.2	6.2	71	SSE	.....	.....	2	.....	5	.....	.....	0	0	.....	Andreas Rospini.
Hermannstadt	28.50	723.8	30.00	762.0	28.0	—2.2	79	ESE	.....	.....	1	.....	10	.....	.....	0	0	.....	Prof. Reissenberger.
Kremsmünster	28.34	719.8	29.71	754.6	38.8	3.8	80	Calm	.....	.....	0	.....	10	.....	.....	0.236	6.0	.....	Prof. C. Wagner.
Lemberg	28.80	731.4	29.80	757.0	39.9	4.4	79	SW	.....	.....	1	.....	8	.....	.....	0	0	.....	Dr. T. Stanecki.
Pola	29.05	753.2	29.77	756.1	54.7	12.6	89	WSW	.....	.....	1	.....	10s	.....	.....	0.020	0.50	.....	I.R.Hydrographic Office.
Szathmar	29.48	748.8	29.96	760.9	41.0	5.0	81	SE	.....	.....	3	.....	9	.....	.....	0	0	.....	Johann Tamas, S. J.
Szegedin	29.52	749.7	29.80	756.9	51.8	11.0	68	S	.....	.....	3	.....	3	.....	.....	0	0	.....	Karl Stancel.
Trieste	29.69	754.0	29.79	756.6	52.5	11.4	77	E	.....	.....	1	.....	10	.....	.....	1.197	30.4	Rainy	P. Busin.
Vienna	29.01	736.9	29.72	754.9	41.2	5.1	75	S	.....	.....	1	.....	.....	.....	.....	0	0	.....	I. R. Central Met. Obs'y.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time, and at Trieste at 7 a. m. of the following day. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

STATIONS.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Barometer: Corrected for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Arlon	28.13	714.6	29.66	753.4	41.5	5.3	81	SW	.....	.....	2	.....	10	.....	.....	0.138	3.5	.....	Prof. M. Passau.
Brussels	29.37	746.0	29.58	751.2	44.1	6.7	79	WSW	.....	.....	5	.....	5	.....	WSW;SW	0.098	2.50	.....	Royal Observatory.
Furnes	29.55	750.6	29.58	751.2	47.1	8.4	88	WSW	.....	.....	4	.....	9	.....	.....	0.051	1.3	.....	M. E. de Cae.
Maeseyck	29.42	747.3	29.55	750.6	45.1	7.3	74	WSW	.....	.....	6	.....	5	.....	.....	0.154	3.9	.....	M. Pierrot.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:9, instead of 1:6 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	OBSERVER.
Aberdeen	29.36	745.7	29.46	748.3	42.0	5.6	.....	NW	30	13.4	.....	.....	3	.....	.....	0.025	0.63	Squally	W. Boswell.
Ardrossan	29.60	751.8	29.62	752.3	46	7.8	.....	NNW	.....	.....	4	.....	3	.....	.....	.....	.....	Blue sky	William McNeil.
Armagh, Observatory	.....	.....	29.80	756.9	43.0	6.1	.....	WNW	9	4.0	.....	.....	4	.....	.....	.....	.....	D. clouds	S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)	.....	.....	29.62	752.3	46.9	8.3	.....	WNW	38	17.0	.....	.....	7	.....	.....	.....	.....	D. clouds	John Hartnup.
Birr Castle, (Parsonstown)	.....	.....	29.91	759.7	44.4	6.9	.....	WNW	.....	.....	1	.....	9	.....	.....	.....	.....	D. clouds	J. L. E. Dreyer.
Bradford, Yorkshire	29.19	741.4	29.58	751.3	43.2	6.3	.....	W	.....	.....	4	.....	2	.....	.....	0.23	5.8	D. clouds	J. McLandsborough.
Bridgetown, (Barbados)	29.88	758.9	29.91	759.7	81.0	27.2	.....	NE	.....	.....	2	.....	3	.....	.....	.....	.....	D. clouds	Pvt. G. W. Roberts, A.
Cambridge, Observatory	.....	.....	29.54	750.3	44.0	6.7	.....	WNW	.....	.....	1	.....	5	.....	.....	.....	.....	D. clouds	H. Todd. [H. C.
Cardington	.....	.....	29.58	751.3	44.0	6.7	.....	NW	.....	.....	2	.....	4	.....	.....	.....	.....	D. clouds	John McLaren.
Chatham, School M. E.	29.42	747.3	29.55	750.6	43.2	6.2	.....	W	.....	.....	1	.....	10	.....	.....	.....	.....	Overcast	Lt. W. G. Morris, R. E.
Dartmoor	28.39	721.1	29.68	758.9	42.0	5.6	.....	NW	.....	.....	6	.....	4	.....	.....	.....	.....	Showery	Alexander Watt.
Davos Platz (Switzerland)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Francis Redford, M. A.
Donaghadee	29.68	753.9	29.71	754.6	44	6.7	.....	NW	.....	.....	5	5	.....	.....	.....	.....	.....	D. clouds	J. Mac Gowan.
Dover	29.55	750.6	29.57	751.1	44	6.7	.....	WNW	.....	.....	3	5	.....	.....	.....	.....	.....	½ clouded	J. Costello.
Eccles, (near Manchester)	.....	.....	29.58	751.3	46.0	7.8	.....	WNW	12.0	5.4	.....	3	.....	.....	.....	.....	.....	D. clouds	Thomas Mackereth.
Falmouth, Observatory	29.66	753.4	29.89	759.2	47.7	8.7	.....	NW	.....	.....	5	5	.....	.....	.....	.....	.....	D. clouds	The Staff.
Fort Napier, (Natal)	27.86	707.6	30.08	764.0	72.7	22.6	.....	NE	.....	.....	2	0	.....	.....	.....	.....	.....	Blue sky	Pvt. G. Salmon, A. H. C.
Free Town, (Sierra Leone)	.....	.....	29.91	759.7	85.0	29.4	.....	Calm	.....	.....	0	3	.....	.....	.....	.....	.....	D. clouds	
Galway, Queen's College	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	30.07	763.8	30.12	765.0	66.3	19.1	.....	NW	.....	.....	4	.....	1	.....	.....	.....	.....	Blue sky	Corpl. C. Aitken, A. H. C.
Glasgow, Observatory	29.41	747.0	29.61	752.1	43.2	6.2	.....	WNW	.....	.....	4	.....	.....	.....	.....	.....	.....	Blue sky	D. G. Maclean.
Great Yarmouth	29.47	748.5	29.48	748.8	41	5.0	.....	WNW	.....	.....	4	6	.....	.....	.....	.....	.....	Drizzling	G. T. Watson.
Greenwich, Royal Obs'y	29.42	747.3	29.59	751.6	42.2	5.7	.....	NW	.....	.....	3	10	.....	.....	.....	.....	.....	Overcast	The Staff, for G. B. Airy.
Guernsey	29.55	750.6	29.78	756.4	48	8.9	.....	NW	.....	.....	6	5	.....	.....	.....	Blank	Blank	Squally	Dr. S. E. Hoskins, F. R. S.
Helston	.....	.....	29.89	759.2	49	9.4	.....	NW	.....	.....	6	6ck	.....	.....	.....	0.43	10.9	Showery	M. P. Moyle.
Holyhead	29.68	753.9	29.73	755.1	47	8.3	.....	NNW	.....	.....	7	3	.....	.....	.....	.....	.....	D. clouds	John Tilston.
Jersey	29.51	749.5	29.81	757.2	48.6	9.2	.....	NW	.....	.....	6	8	.....	.....	.....	Blank	Blank	Squally	J. Fisher.
Kew, Observatory	.....	.....	29.61	752.1	43.8	6.6	.....	WNW	16	7.2	.....	5	.....	.....	.....	.....	.....	D. clouds	The Staff.
Kingstown	29.78	756.4	29.81	757.2	45	7.2	.....	WNW	.....	.....	5	6	.....	.....	.....	.....	.....	D. clouds	George Mitchell.
Leicester, Museum	.....	.....	29.56	750.8	45.8	7.7	.....	NW	.....	.....	4	1	.....	.....	.....	.....	.....	D. clouds	Wm. J. Harrison, F. G. S.
Malta, (Mediterranean)	29.70	754.4	29.77	756.1	65.2	18.3	.....	NE	.....	.....	6	8	.....	.....	.....	.....	.....	Overcast	Sgt. C. Arbeiter, A. H. C.
Nairn	29.50	749.3	29.59	751.6	40	4.4	.....	NW	.....	.....	3	2	.....	.....	.....	.....	.....	¼ clouded	W. D. Penny.
Nassau, (Bahamas)	.....	.....	30.05	763.3	72.2	22.3	.....	NE	.....	.....	3	10	.....	.....	.....	Blank	Blank	Overcast	C. S. Duncombe.
Nottingham, Observatory	29.39	746.5	29.58	751.3	45.1	7.3	.....	WNW	.....	.....	4	2c;d	.....	.....	NW	0.139	3.53	Blue sky	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.08	738.6	29.61	752.1	43.5	6.4	.....	NW	.....	.....	5–6	2	.....	.....	.....	.....	.....	D. clouds	Rev. Stephen Whitty
Oxford, Radcliffe Obs'y	.....	.....	29.64	752.8	44	6.7	.....	W	.....	.....	2	2	.....	.....	.....	.....	.....	Blue sky	F. Lucas
Plymouth	29.74	755.4	29.51	757.2	48.3	9.1	.....	NW	.....	.....	4	0	.....	.....	.....	.....	.....	Blue sky	John Merrifield.
Roche's Point	29.91	759.7	29.95	760.7	46	7.8	.....	NW	.....	.....	4	2	.....	.....	.....	.....	.....	Fine	W. Kennedy.
Saint Ann's Head	29.67	753.6	29.84	757.9	47	8.3	.....	WNW	.....	.....	6	5	.....	.....	.....	.....	.....	Showery	John C. Walker.
Sandwick Manse, (Orkneys.)	.....	.....	29.51	749.5	40.5	4.7	.....	NW	28	12.5	.....	5	.....	.....	.....	.....	.....	Showery	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey	.....	.....	30.00	762.0	61.8	16.6	.....	SE	.....	.....	1	1	.....	.....	.....	.....	.....	Blue sky	Sergt. W. H. Lyne.
Sheffield	29.32	744.7	29.56	750.8	45.8	7.7	.....	WNW	.....	.....	5	2	.....	.....	.....	0	0	Blue sky	W. F. Cooper.
Silloth Rectory	29.59	751.6	29.62	752.3	47.8	8.8	83	NW	.....	.....	4	2	.....	.....	.....	0	0	D. clouds	Rev. F. Redford, M. A.
Stonyhurst, Observatory	.....	.....	.....	.....	43.2	6.2	.....	NW	.....	.....	3	7	.....	.....	.....	.....	.....	D. clouds	Rev. S. J. Perry.
Stornoway, Lews C., (Hebr.)	.....	.....	29.57	751.1	39	3.9	.....	N	.....	.....	4	2	.....	.....	.....	.....	.....	D. clouds	John Smith.
Stratfield Turgiss	29.40	746.7	29.62	752.3	43.4	6.3	.....	NW	.....	.....	2	3	.....	.....	.....	.....	.....	D. clouds	Rev. C. H. Griffith, F. M. S.
Thurso	.....	.....	29.50	749.3	43	6.1	.....	N	.....	.....	6	6	.....	.....	.....	.....	.....	D. clouds	John Trotter.
Truro, Royal Institution	.....	.....	29.91	759.7	52	11.1	.....	NW	.....	.....	7	4	.....	.....	.....	.....	.....	D. clouds	W. Newcombe.
Valencia, Observatory	.....	.....	30.03	762.7	48.7	9.3	.....	NW	19	8.5	.....	6	.....	.....	.....	.....	.....	D. clouds	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)	.....	.....	.....	.....	96.5	35.8	25	S	13	5.8	.....	0	0	.....	.....	.....	.....	.....	Henry Mercer.
Cape Good Hope, Obs'y	29.86	758.4	29.90	759.4	61.5	16.4	82	Calm	.....	.....	0	7k	.....	.....	.....	0	0	.....	The Staff, for E. J. Stone.
Hobart Town, (Tasmania)	.....	.....	29.47	748.5	47.8	8.8	83	NW	.....	.....	4	2	.....	.....	.....	.....	.....	.....	Francis Abbott, F. R. A. S.
Leith, Restalrig Park	.....	.....	.....	.....	43.2	6.2	.....	NW	.....	.....	3	7	.....	.....	.....	.....	.....	.....	Andrew Gibb.
Mauritius, Observatory	29.82	757.4	30.01	762.2	77.0	25.0	64	E	14.5	6.5	.....	0	6	.....	E	0	0	Fine	C. Meldrum.
Melbourne, Observatory	29.62	752.3	29.71	754.6	60.0	15.6	76	SW	16	7.2	.....	.....	4	.....	NW	0	0	Fine	R. L. J. Ellery.
Monach L't-house, (Hebrides)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Youngclause.
North Unst, (Shetland Is.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Robert Burnet.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m.

Marine Series. Vessels.																Sea or swell. Height scale 0—9	Sea or swell. Direction from—		
S. S. Algeria, N. 49° 0′, W. 31° 55′	.....	.....	29.99	761.7	58	14.4	.....	SW	.....	.....	5	.....	10	.....	WSW	15*	SW	Misty	Capt. W. Watson.
S. S. Batavia, N. 42° 45′, W. 60° 30′	.....	.....	30.16	766.1	39	3.9	.....	WNW	.....	.....	4	.....	7	.....	.....	4	WNW	Showery	Capt. J. E. Mouland.
Ship Camperdown	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. A. T. Miller.
Brig Catherine	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. Adam Smith.
Barque Celeste	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. D. F. McKechnie
S. S. Hibernia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. W. R. Cato.
Barque Maroon	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. A. T. Brown.
Ship Mikado	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. C. C. Prehn.
S. S. Seine	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. H. Manning.
Barque Sorata	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. Jas. J. Price.
Schooner Traveller	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. Alex. Simpson.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
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.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. *Feet.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
San José	26.19	665.2	.....	.....	67.6	19.8	95	NE	.....	.....	1	.....	1ks	.....	NE	Inap	Inap.	.....	Federico Maison.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.34	745.3	29.39	746.5	42.4	5.8	94	SW	.....	.....	4	.....	10	.....	.....	.....	.....	.....	.....
Fanöe	29.27	743.4	29.29	743.9	45.0	7.2	79	W	.....	.....	4	.....	9	.....	.....	.....	.....	.....	.....
Godthaab, (Greenland)	29.78	756.3	29.82	757.4	17.2	—8.2	79	ENE	.....	.....	4	.....	0	.....	.....	.....	.....	.....	.....
Stykkisholm, (Iceland)	29.84	757.8	29.88	758.9	27.9	— 2.3	100	NE	.....	.....	6	.....	8	.....	.....	.....	.....	.....	.....
Thorshavn, (Faröe)	29.51	749.5	29.54	750.4	36.9	2.7	77	NW	.....	.....	2	.....	4	.....	.....	.....	.....	.....	.....
Vestervig	29.07	738.3	29.24	742.6	42.8	6.0	99	W	.....	.....	4	.....	6	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

Alençon, Normal School	29.27	743.5	29.82	757.5	50.0	10	85	NW	.....	.....	3	.....	5	.....	SE	0.244	6.2	Cloudy	Collignon, Director.
Amiens, Normal School	29.52	749.9	29.63	752.7	43.9	6.6	86	SE	.....	.....	3	.....	5	.....	W	0.173	4.4	Cloudy	Bonvarne, Director.
Avignon, Normal School	29.78	756.4	29.86	758.4	46.8	8.2	83	N	.....	.....	1	.....	5	.....	WNW	0	0	Cloudy	Mr. Giraud, Director.
Bar-sur-Seine	29.15	740.3	29.72	754.8	45.9	7.7	79	SW	.....	.....	2	.....	8kn	.....	SW	0.071	1.8	Very cloudy	C. Saillard.
Beaumette Obs'y (Angers)	29.66	753.4	29.83	757.6	49.1	9.5	61	WSW	4.5	2.0	.....	.....	10	.....	W	0.620	0.5	Raining	Albert Cheux.
Beauvais	29.42	747.2	29.71	754.6	42.8	6	82	W	.....	.....	3	.....	10	.....	W	0.148	3.75	Covered	Normal School.
Besançon	28.87	733.4	29.74	755.3	46.8	8.2	83	SSW	.....	.....	3	.....	10	.....	.....	0.463	11.5	Covered	Normal School.
Bourg-en-Bresse	28.88	733 6	29.79	756.6	47.7	8.7	73	S	.....	.....	4	.....	10cn	.....	SW	0.217	5.5	Covered	Normal School.
Bourges, Normal School	29.26	743.2	29.82	757.4	46.4	8	82	W	.....	.....	4	.....	10	.....	E	0.110	2.8	Covered	A. Wagner, Director.
Brest, Naval Observatory	29.64	752.9	29.86	758.5	50.5	10.3	62	NNW	.....	.....	5	.....	3n	.....	NNW	0.295	7.50	.....	The Staff.
Carcassonne, Normal School	29.48	748.7	29.89	759.2	52.9	11.6	93	W	.....	.....	2	.....	10	.....	W	0	0	Covered	Vateau, Director.
Caen	29.65	753.1	29.72	755.0	46.0	7.8	86	E	.....	.....	2	.....	5	.....	E	0	0	Cloudy	Normal School.
Chartres, Normal School	29.16	740.6	29.72	754.9	51.4	10.8	60	W	.....	.....	2	.....	8	.....	SE	0.110	2.8	.....	Lequin, Director.
Châlons-sur-Marne, N. Sch'l	29.33	745.0	29.65	753.2	44.6	7.0	83	NW	.....	.....	3	.....	5ck	.....	NW	0.118	3.0	Cloudy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.43	722.1	29.79	756.7	48.2	9.0	76	NW	.....	.....	4	.....	8	.....	W	0.118	3.0	Very cloudy	Alluard, Director.
Commercy, Normal School	28.82	732.1	29.72	755.0	41.4	5.2	94	W	.....	.....	2	.....	8	.....	W	0.20	5.	Very cloudy	Dr. Goulet, Director.
Commune de Gréasque*	28.74	730.0	29.88	759.0	50.0	10.0	64	W	.....	.....	2	.....	8	.....	W	0	0	¾ covered	. Kina.
Grenoble	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Normal School.
La Roche-sur-Yon, N. School	29.64	752.8	29.86	758.4	49.6	9.8	66	NW	.....	.....	6	.....	5	.....	NW	0.551	14.0	Cloudy	Mouillot, Director.
Le Mans, Normal School	29.47	748.6	29.78	756.5	43.9	6.6	79	WNW	.....	.....	6	.....	2	.....	W	0.12	3.	Slightly cl'dy	Poirrier, Director.
Lons-Le-Saulnier, N.School	28.83	732.3	29.76	755.6	47.1	8.4	81	SSW	.....	.....	2	.....	5	.....	E	0.165	4.2	Sprinkling	Pin, Director.
Lorient, Naval Observatory	29.83	757.6	29.93	760.1	51.4	10.8	54	W	.....	.....	3	.....	5	.....	N	0.039	1.0	⅜ covered	T. Carré, Director.
Mâcon, Normal School	29.09	738.8	29.76	755.9	48.2	9	89	Calm	.....	.....	0	.....	5	.....	W	0	0	Cloudy	M. Marchal, Director.
Metz	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. A. Schuster, Dir.
Mirecourt	28.05	727.8	29.71	754.7	42.3	5.7	88	SW	.....	.....	2	.....	.....	.....	S	0	0	Slightly cl'dy	Normal School.
Nismes, Normal School	29.64	752.8	29.80	757.0	48.6	9.2	81	SE	.....	.....	1	.....	2	.....	NE	0	0	Slightly cl'dy	Boyer, Director.
Orleans, Normal School	29.32	744.8	29.71	754.5	44.6	7	83	WNW	.....	.....	4	.....	8	.....	NW	0.16	4.	Very cloudy	Bernard, Director.
Paris, Observatory	29.46	748.3	29.71	754.5	44.6	7.0	78	W	.....	.....	1	.....	9k	.....	WNW	0.074	1.87	Almost cov.	National Observatory.
Privas	28.79	731.2	29.87	758.7	45.1	7.3	85	N	.....	.....	4	.....	10	.....	N	0.04	1.	Covered	Normal School
Rochefort, Naval Obs'y	29.89	759.1	29.92	759.9	49.6	9.8	84	W	.....	.....	3	.....	0	.....	.....	0.12	3.	Clear	Lt. Decante, Director.
Rouen, Normal School	29.58	751.2	29.66	753.4	46.0	7.8	76	W	.....	.....	2	.....	5	.....	W	0.472	12.0	Cloudy	F. Lucard, Director.
Tarbes, Normal School	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	T. Hugues, Director.
Villefranche	29.13	739.9	29.85	758.2	48.4	9.1	82	NW	.....	.....	4	.....	10	.....	.....	0	0	Covered	Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.75	755.6	29.78	756.3	80.6	27	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0	.....	L'Abbé Marchési.
Marseilles, Observatory	.....	.....	29.86	758.4	53.4	11.9	67	W	.....	.....	1-2	.....	9	.....	.....	0.209	5.30	Cloudy	The Staff.
Mont-Louis	24.74	628.4	30.06	763 4	40.1	4.5	53	WSW	7.4	3.33	.....	.....	10	.....	W	0	0	.....	Mr. Falguère.
Nice	.....	.....	29.70	754.4	56.5	13.6	26	E	.....	.....	.....	.....	.....	.....	SW	0	0	Fair	Dr. A. Niepce.
Perpignan	29.42	747.2	29.69	754.2	43.9	6.6	82	W	.....	.....	3	.....	10	.....	W	0.102	2.6	.....	Marié Davy, Director.
Pic du Midi, (Summit,) H. P.	21.07	535.1	29.89	759.3	57.7	14.3	59	NW	20.5	9.17	.....	.....	8	.....	W	0	0	.....	Dr. Flues.
Pic du Midi, (Summit,)	21.07	535.1	.....	.....	19.8	— 6.8	.....	NW	.....	.....	4-6	.....	10	.....	.....	.....	.....	Snowy	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.35	567.7	.....	.....	24.8	— 4.0	.....	NW	.....	.....	6-8	.....	10	.....	.....	0.669	17.0	Snowy	Gen'l de Nansouty.
Saint Maur, (near Paris)	29.54	750.3	29.71	754.5	45.0	7.2	77	WSW	.....	.....	2	.....	10	W	W	0.008	0.2	.....	E. Renou.
Toulouse, Observatory	29.23	742.4	29.95	760.7	50.9	10.5	92	NW	.....	.....	4	.....	10	.....	.....	0.236	6.00	Raining	The Staff.
Tours	29.61	752.2	29.81	757.2	43.9	6.6	91	WNW	.....	.....	3	.....	7	.....	WNW	0.205	5.2	.....	C. Marquet.
Versailles, (near Paris)	.....	.....	29.69	754.2	45.3	7.4	71	WNW	.....	.....	2	.....	8	.....	.....	0.094	2.40	Very cloudy	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.50	774.8	30.53	775.4	44.2	6.8	74	E	4.0	1.8	.....	.....	10kn	.....	E	0	0	Covered	Marc Dechevrens, S. J.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; for Montsouris, the barometer reduced to freezing but not to sea-level. At Mirecourt the cloud direction is apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg																			
Berlin	29.40	746.7	29.57	751.1	46.0	7.8	75	S			2		10			0.036	0.91	Raining	Prof. Dr. Hoh.
Breslau	29.15	740.4	29.67	753.7	42.1	5.6	72	SSW			3		10			0	0		Prof. Arndt.
Carlsruhe	29.24	742.6	29.67	753.5	45.3	7.4	83	SW			2		10			0.118	3.0	Raining	Royal University Obs'y.
Cassel	29.01	736.8	29.61	752.0	44.2	6.8	84	SW			3		5	SSW		0.011	0.27		Albert Senz.
Crefeld	29.38	746.2	29.54	750.3	47.3	8.5	64	W			4		2			0.12	3.		Dr. H. Möhl.
Emden	29.45	748.0	29.48	748.9	44.6	7.0	82	SW			3		4			0.122	3.1		Director Lose.
Frankfort on the Main	29.30	744.3	29.67	753.7	46.4	8		SSW			1		7			0.067	1.7		Prof. Prestel.
Friedrichshafen	28.32	719.3	29.78	756.3	43.2	6.2	85	SSW			4		10	SW		0.236	6.0		Physical Society.
Hamburg	29.39	746.5	29.46	748.3	45.5	7.5	93	SW			4		8kn			0.173	4.4	Fair	M. Wilhelm.
Kiel	29.38	746.2	29.39	746.6	43.3	6.3	85	SW			5		10			0.195	4.94		Captain F. Hegemann.
Königsberg, (Prussia)	29.65	753.1	29.73	755.1	38.8	3.8	92	SE										Cloudy	Prof. G. Karsten.
Köslin			29.59	751.5	38.5	3.6		S			2		5			0.067	1.7		Prof. E. Luther.
Leipsic, Observatory	29.22	742.1	29.64	752.8	43.9	6.6	78	SW			3		10	WSW		0	0		H. Müller.
Memel, Naval School	29.74	755.5	29.79	756.7	39.9	4.4	85	S			2		10ks						Prof. Bruhns.
Neufahrwasser	29.69	754.0	29.70	754.4	39.7	4.3	84	S			5		10			0	0	Dust-haze	Reinbrecht von Skalweit.
Posen	29.41	747.0	29.71	754.6	41.0	5.0	77	S			5		10					Covered	A. Lothes.
Strassburg Obs., (in Alsace	29.16	740.6	29.71	754.7	46.0	7.8	80	SW			3		8	SW		0.047	1.20		Dr. Magener.
Stuttgart	28.74	730.0	29.69	754.1	45.3	7.4	69	W			2		9	W		0.031	0.8		Dr. Schur.
Treves, (Trier)	29.02	737.1	29.54	750.2	44.4	6.9	80	SW			6		7			0.161	4.10	Foggy	Prof. Schoder.
Weissenburg, (Bavaria)	28.17	715.5	29.70	754.3	41.4	5.2	84	W	3	1.5			10		SW	Blank	Blank	Covered	Prof. Flesch.
Wustrow, Naval School	29.49	749.0	29.52	749.8	42.1	5.6	88	SSE			6		10					Covered	Dr. Von Bebber.
German Naval Series.																			E. F. Schütz.

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4, Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens

Athens	29.56	750.7	29.95	760.7	57.9	14.4		E										Cloudy	Dr. J. F. J. Schmidt.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and wind-force; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.97	761.2	30.02	762.4	83.2	28.4	64	WSW	9.07	4.07			2			0	0	D. clouds	
Deesa	29.55	750.5	30.02	762.6	84.8	29.3	26	Calm					1	SW		0	0	D. clouds	
Bombay	29.88	759.0	29.92	760.0	84.9	29.4	71	NW	13.0	5.8			0			0	0	Blue sky	
Poona	27.94	709.6	29.93	760.3	82.0	27.6	51	E					0			0	0	Blue sky	
Lahore	29.38	746.3	30.15	765.7	72.8	22.7	39	NW	3.9	1.7			7			0	0	Cloudy	
Belgaum	27.42	696.3	29.96	761.0	76.1	24.5	49	E	6.0	2.7			1			0	0	D. clouds	
Bangalore																			
Roorkee	29.07	738.4	29.98	761.6	74.8	23.8	44	NW	1.5	0.7			4			0	0	Dust-storm	
Agra	29.44	747.7	30.01	762.1	79.9	26.6	48	W					8			0	0		
Trichinopoly																			
Nagpur	28.97	735.7	30.02	762.4	78.6	25.9	43	Calm	3.3	1.5			0			0	0	Blue sky	
Madras																			
Lucknow	29.61	752.1	29.99	761.7	77.3	25.2	46	NW	2.3	1.0			0			0	0	Blue sky	
Allahabad	29.68	753.8	29.99	761.8	75.6	24.2	56	Calm	1.9	0.8			2	SW		0	0	D. clouds	
Patna	29.81	757.2	30.00	761.9	74.3	23.5	75	Calm	1.1	0.5			0			0	0	Blue sky	
Hazaribagh	27.97	710.3	30.02	762.5	69.8	21.0	53	NW	5.1	2.3			0			0	0	Blue sky	
Cuttack	29.91	759.8	30.00	761.9	76.7	24.8	63	Calm	1.7	0.8			0			0	0	Blue sky	
Calcutta (Alipore)	29.98	761.5	30.00	762.0	72.7	22.6	78	WNW	2.0	0.9			0			0	0	Blue sky	
Goalpara	29.58	751.2	29.97	761.3	75.0	23.9	69	Calm	1.4	0.6			0			0	0	Blue sky	
Chittagong	29.90	759.5	30.00	761.9	75.5	24.2	75	Calm	1.3	0.6			0			0	0	Blue sky	
Sibsagar	29.65	753.2	30.00	762.0	69.8	21.0	85	NNE	1.0	0.4			8			0	0	D. clouds	
Rangoon																			
Jubbulpore	28.66	728.0	30.05	763.3	75.5	24.2	63	NE	1.7	0.8			0			0	0	Blue sky	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	21.82	554.1	29.70	754.3	41.4	5.2	83	NW			8		8	NW		0	0		Ab. Dom. Morgini.
Stelvio	21.82	554.2	29.72	755.0	39.0	3.9		WSW			4		9			0	0		Signora Ernesta Manfredi.
Udine	29.36	745.7	29.77	756.2	45.7	7.6	90	Calm	0	0			10			0.012	0.3		Prof. Giovanni Clodig.
Padua	29.05	753.2	29.76	756.0	45.9	7.7	86	N	1.8	0.8			10			0.248	6.3		Prof. Dott. Lorenzoni.
Vicenza	29.58	751.3	29.78	756.3	45.9	7.7	87	E	0	0			10	W		0	0		Conte Alm. Da Schio.
Verona	29.57	751.0	29.79	756.7	51.4	10.8	86	WSW	0	0			10			0.322	8.2		Dott. B. Bertoncelli.
Bergamo	28.44	722.4	29.78	756.3	42.8	6.0	85	S			1		10			0.031	0.8		Prof. Trionfini Carlo.
Domodossola	28.74	729.9	29.79	756.6	46.8	8.2	72	Calm			0		10			0	0		Prof. Giuseppe Calza.
Milan	29.26	743.3	29.79	756.7	46.0	7.8		NNE			1		10	ESE		0	0		Ab. Gio. Capelli.
Pavia	29.43	747.5	29.78	756.5	45.5	7.5	84	S			1		10			0	0		Prof. Gio. Cantoni.
Moncalieri	28.89	733.7	29.81	757.1	45.5	7.5	84	ESE	0	0			10	NE		0	0		Prof. P. F. Denza.
Mondovi																			Prof. D. C. Bruno.
Porto Maurizio	29.53	750.1	29.76	755.8	54.1	12.3	72	E			2		10	SE		0.004	0.1		Prof. L. Vassallo.
Genoa	29.57	751.1	29.74	755.4	52.7	11.5	63	N	1.3	0.6			10	SE		0	0		Prof. G. M. Garibaldi.
Piacenza	29.52	749.9	29.78	756.5	45.3	7.4	83	NW	0.7	0.3			10	SE		0	0		Dott. G. Manzi.
Parma	29.46	748.2	29.78	756.4	45.5	7.5	81	NNW			4		9			0	0		Prof. P. Pigorini.
Florence	29.47	748.4	29.76	756.0	55.0	12.8	88	NW			2		10	SW		0.043	1.1		Cav. F. Meucci.
Leghorn	29.08	753.8	29.76	756.0	58.5	14.7	63	W	9.8	4.4			7			0.039	1.0		Prof. P. Monte.
Siena	28.56	725.5	29.78	756.3	52.0	11.1	96	SE	0.7	0.3			10	W		0.118	3.0		Prof. L. Toscani.
Urbino	28.26	717.9	29.83	757.7	51.8	11.0	87	SW			2		10			0.236	6.0		Prof. P. Serpieri.
Pesaro	29.74	755.3	29.79	756.6	49.3	9.6	85	N	19.2	8.6			10			0.079	2.0		Prof. Luigi Guidi.
Ancona	29.64	752.8	29.74	755.5	55.8	13.2	79	NW			4		10			0	0		Prof. F. DeBosis.
Grosseto	29.09	754.1	29.80	756.9	58.6	14.8	89	N			2		8	NE		0	0		Avv. P. Ponticelli.
Rome	29.67	753.5	29.84	758.0	60.3	15.7	79	S	3.1	1.4			10			0	0		Prof. P. A. Secchi.
Naples, O. U.	29.67	753.7	29.87	758.8	66.9	19.4	65	S			2		6	SW		0	0		Prof. L. Palmieri.
Lecce					61.7	16.5	69	ENE	9.4	4.2			8			0.016	0.4		Prof. C. De Giorgi.
Cosenza					58.3	14.6	74	NW	0.7	0.3			9			0	0		Prof. F. D. Conti.
Cagliari	29.67	753.5	29.85	758.3	61.7	16.5	69	NW			2		8	NW		0	0		Prof. A. Pacinotti.
Riposto, (Sicily)	29.69	754.0	29.737	755.22	60.6	15.9	87	SE			2		10	SW		1.091	27.7		Prof. F. Caflero.
Palermo	29.58	751.4	29.84	757.8	61.7	16.5	81	WSW	1.3	0.6			10			0.559	14.2		Prof. G. Cacciatore.
Caltanissetta	27.87	707.9	29.817	757.22	55.0	12.8	89	WNW			2		10			0.382	9.7		Prof. A. Pagani.
Syracuse	29.65	753.1	29.72	755.0	61.0	16.1	90	NE			6		10	E		1.453	36.9		Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.34	745.1	29.89	759.2	62.2	16.8	78	NW	1.3	0.6			7			0.327	8.3		Prof. F. Brioschi.

Note.—The originals give the wind-force on the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,543.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo 379.6 m., or 1,245.8 ft.; Mondovi, 556 m., or 1,824.2 ft.; Siena, 348.5 m., or 1,143.3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Tokei (Yeddo)																			The Observatory.
Tokei (Yeddo) University	30.34	770.5	30.45	773.4	39	3.9	77									0	0	Clear	Prof. P. V. Veeder.

MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Señor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Aguascallentes																			I. N. Marin, M. D.
Córdoba																			C. Peña, M. D.
Cuernavaca																			L. Castillo, A. E.
Guadalajara																			Prof. L. Perez.
Guanajuato																			Prof. V. Fernandez.
Leon																			Prof. M. Leal.
Mexico																			Central Observatory.
Orizaba	23.08	586.3	30.17	766.4	66.5	18.6	62	Calm	0	0		0	9k		SW	0	0	Cloudy	N. N.
Orizaba																			I. Orozco, M. D.
Pabellon, (Aguascalts)																			M. V. de Leon, M. E.
Puebla																			Prof. B. Gonzalez.
Toluca																			Prof. C. Velazquez.
Tlacotalpam																			Prof. F. R. Bayly.
San Luis Potosi																			G. Barroeta, M. D.
Vera-Cruz																			Prof. J. Rossell.
Zacatecas																			J. A. Bonilla, M. E.
Puebla, (Catholic Institute)																			P. Spina. [M. M. D. D.
Morelia																			M. Tena, F. L. Páramo.

Note.—The elevation of Aguascallentes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,299 m., or 7,542.9 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m,, or 8,611.8 ft.; San Luis Potosí, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	29.53	750.0	29.53	750.0	48.6	9.2		WSW			5					0.138	3.5		
Groningen	29.38	746.3	29.44	747.7	44.6	7.0		SW			3					0.122	3.1		
Helder	29.41	747.0	29.41	747.0	46.6	8.1		SW			4					0.157	4.0		
Hellevoetsluis			29.50	749.3	45.3	7.4	84	WSW			5								
Utrecht	29.45	748.1	29.50	749.3	45.0	7.2	76	SSW			5		5			0.331	8.4	Cloudy	H. v d Brink.

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	29.19	741.3	29.24	742.7	42.8	6.0	79	S	2.2	1.0	.....	.....	4	.....	.....	0.031	0.8	.....	
Brönö	29.33	744.9	29.37	745.9	37.8	3.2	73	SW	18	8	.....	.....	8	.....	.....	0.354	9.0	.....	
Christiania	29.22	742.2	29.37	746.0	39.4	4.1	87	E	4	2	.....	.....	10	.....	.....	0.161	4.1	Raining	
Tromsö	29.34	745.1	29.38	746.2	33.8	1.0	81	Calm	0	0	.....	.....	10	.....	.....	0	0	.....	

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	30.40	772.2	30.60	777.1	61.5	16.4	72	NE	5.6	2.5	.....	.....	3	.....	.....	0	0	.....	Dr. J. A. Sampaio.
Campo Major	29.22	742.2	30.25	768.3	60.8	16.0	63	NNW	2.5	1.1	.....	.....	1	NW	.....	0	0	.....	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.23	767.8	30.32	770.0	68.9	20.5	65	E	8.1	3.6	.....	.....	5	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.95	760.6	30.30	769.7	61.3	16.3	70	NNE	19.9	8.9	.....	.....	7	.....	.....	0	0	.....	The Staff.
Ponta Delgada, (Azores)	30.51	774.9	30.58	776.7	65.5	18.6	66	NE	6.3	2.8	.....	.....	6	.....	.....	0	0	.....	

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

Naval Series. Vessels.	Sea or swell. Height scale 0–9	Sea or swell. Direction from—		
S. S. India.				A. D. Pedroso, Com'd't. Lt. S. A. P. de Mirando

Note.—The originals give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.33	745.0	29.77	756.1	35.6	2.0	93	SSE	11	5	.....	.....	10	.....	.....	.....	.....	Light rain	Astronomical Obs.
Wilna	29.47	748.4	29.89	759.3	40.3	4.6	87	S	2	1	.....	.....	10	.....	.....	.....	.....	Heavy clouds	Astronomical Obs.
Dorpat	29.60	751.9	29.85	758.2	39.6	4.2	93	S	2	1	.....	.....	6	.....	.....	.....	.....	.....	Prof. Dr. Weihrauch.
St. Petersburg	29.78	756.3	29.79	756.7	40.8	4.9	84	SW	11	5	.....	.....	10	.....	.....	.....	.....	.....	Central Physical Obs.
Kuopio	29.27	743.4	29.60	751.7	37.8	3.2	83	W	7	3	.....	.....	10	.....	.....	.....	.....	.....	Ch. Forsten.
Kieff	29.34	745.3	30.01	762.2	35.8	2.1	87	SSE	9	4	.....	.....	10	.....	.....	.....	.....	.....	Physical Cabinet.
Nikolaiev	30.07	763.6	30.13	765.4	45.0	7.2	80	S	9	4	.....	.....	10	.....	.....	.....	.....	.....	Kurdakof.
Kertch	30.22	767.6	30.24	768.1	46.0	7.8	76	ENE	7	3	.....	.....	9	.....	.....	.....	.....	.....	Lagorio.
Moscow	29.52	749.7	30.09	764.3	33.8	1.0	89	S	4	2	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Lugan	29.97	761.2	30.18	766.6	34.2	1.2	85	E	2	1	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Archangel	29.54	750.4	29.56	750 9	33.1	0.6	100	S	13	6	.....	.....	10	.....	.....	.....	.....	.....	Ogorodnikof.
Tiflis	28.91	734.2	30.37	771.3	45.9	7.7	67	E	4	2	.....	.....	10	.....	.....	.....	.....	.....	Physical Observatory.
Astrakhan	30.53	775.4	30.45	773 3	33.8	0.7	70	SSE	7	3	.....	.....	10	.....	.....	.....	.....	.....	Sebastianof.
Kasan	29.87	758.8	30.16	766.0	29.8	— 1.5	82	SW	4	2	.....	.....	10	.....	.....	.....	.....	.....	Physical Cabinet.
Orenburg	30.04	763.0	30.44	773.2	23.2	— 4.9	62	E	9	4	.....	.....	0	.....	.....	.....	.....	.....	Tschernischef.
Ekaterinburg	29.19	741.5	30.19	766.9	26.6	— 3.0	80	W	2	1	.....	.....	5	.....	.....	.....	.....	Heavy clouds	Meteorological Obs.
Nukuss	30.17	766.3	30.41	772.5	38.7	3.7	70	SW	0	0	.....	.....	0	.....	.....	.....	.....	.....	
Kasaly	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Bobrof.
Tashkend	28.85	732.8	30.67	778.9	33.4	0.8	46	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Michelson.
Barnaul	29.91	759.6	30.47	773.9	21.4	— 5.9	72	SW	4	2	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Yeniseisk	29.91	759.8	30.26	768.6	18.7	— 7.4	92	SW	9	4	.....	.....	10	.....	.....	.....	.....	Snowing	Marks.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Usolzef.
Oorga	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Mossin.
Peking, (China)	30.39	771.9	30.53	775.5	27.9	— 2.3	77	Calm	0	0	.....	.....	4	.....	.....	.....	.....	.....	Physical Observatory.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nikolaievsk, on the Amoor	.....	.....	.....	.....	14.9	— 9.5	87	W	11	5	.....	.....	6k	.....	.....	.....	.....	.....	

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Ekaterinburg, 306. 4? m., or 1,005.2? ft.; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Rave, Director.
Bilbao, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Manuel de Naveran.
Burgos, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Domingo Martin y Perez.
Madrid, Royal Observatory	27.90	708.6	30.15	765.8	53.6	12.0	66	NW	1.5	0.67	.....	0	10	.....	.....	0	0	Covered	The Staff.
Murcia, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Olayo Diaz, Director.
Santiago, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.94	760.5	30.01	762.2	72.0	22.2	82	SE	2.9	1.3	.....	7c	0	.....	.....	0	0	Fair	Benito Vines, S. J.
San Fernando, Naval Obs'y.	30.14	765.6	30.24	768.2	61.3	16.3	68	WNW	11.5	5.1	.....	1	1	N	NW	0	0	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.	.....	.....	29.85	758.2	78.8	26.0	89	SE	0	0	.....	5k	3kn	.....	.....	0.030	1.00	Cloudy	Leonardo de Tejeda, Chief of Engineers.

Note.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON.

SWEDISH SERIES.

Furnished by the cöoperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Low'r 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.47	748.5	29.51	749.5	31.6	— 0.2		Calm			0		10			0	0		
Umea	29.50	749.4	29.56	750.7	27.3	— 2.6	100	Calm			0		5			0	0		
Hernosand	29.46	748.2	29.51	749.5	30.2	— 1.0	88	Calm			0		4			0	0		
Stockholm	29.38	746.3	29.56	750.8	42.1	5.6	88	SSE			2		10					Raining	
Wisby	29.57	751.1	29.63	752.6	42.8	6.0	88	SW			4		10			0	0		
Sub-Series.																			
Upsala	29.48	748.8	29.56	750.7	39.0	3.9	96	SE	6.0	2.7			10			0.322	8.20		Dr. Hildebrandsson.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.35	720.0	29.80	756.8	47.1	8.4	71	S			2		8			0.122	3.1	Covered	The Observatory.
Zurich	28.12	714.3	29.80	756.8	43.2	6.2	85	W			1		10			0.138	3.5	Covered	The Observatory.

Note.—For Geneva the corresponding departures from the normal values are: Barometer, —6.5 mm; Thermometer, +2.4 cent.; Relative Humidity, —6 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople			30.06	763.4	58.5	14.7	49	ESE	7	3.0			0			0	0		The Observatory.
Fao, (Persian Gulf)																			
Salonica			30.06	763.4	60.8	16		N			1		5						B. Stefanidès.
Valona			29.80	759.2	64.0	17.8		W			1		5			0	0	Cloudy	A. Bertrand.
Varna																			Imperial Observatory.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.07	761.2	30.08	764.1	68.0	20.0	49	N			2		0			0	0	Blue sky	Prof. C. V. A. Van Dyck

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	30.17	766.3	30.24	768.1	29.5	— 1.4	93	Calm	0	0		5							Hon. J. Ferguson.
Brockville, Ontario			30.62	777.7	18	— 7.8		Calm	0	0		0	0			0	0	Clear	W. R. Rigg.
*Chatham, N. B			30.21	767.3	28	— 2.2	89	NW	7	3.1		8c	2ks	W	W	0.01	0.3	Fair	G. A. Blair.
Charlottetown, P. E. Island.			30.15	765.8	34	1.1	77	NW	5	2.2			10s		Calm	0.60	15.2	Cloudy	H. J. Cundall, C. E.
Cornwall, Ontario	30.37	771.4	30.58	776.7	20.2	— 6.6	100	NW			1	0	1s			0	0	Fair	James Smith, M. A.
Dalhousie, N. B	30.29	769.4	30.33	770.4	29	— 1.7	86	NW			1					0	0	Gloomy	H. A. Johnson.
Esquimault, B. C	30.21	767.3	30.26	768.6	39.1	3.9	100	N					10			0	0	Cloudy	W. H. Bevis.
*Father Point, Quebec			30.36	771.1	27	— 2.8	64	NW	15	6.7		5c	5s	Calm	Calm	0	0	Cloudy	J. McWilliams.
Fredericton, N. B	30.26	768.6	30.33	770.4	29.1	— 1.6	84	NW	6.0	2.7			10s			0	0	Cloudy	Prof. Harrison.
*Fort Garry, Manitoba			29.81	757.2	36	2.2	90	S	16	7.2		5k	5n	S	S	0	0	Cloudy	James Stewart.
Goderich, Ontario																			H. J. Strang, M. A
Granton, Ontario	29.36	745.7	30.54	775.7	23.3	— 4.8	96	E			1	0	0			0	0	Clear	James Grant.
*Halifax, N. S	30.04	763.0	30.18	766.6	32	0.0	80	NW	11	4.9		0	1ks		NW	0.006	0.15	Fair	F. Allison, M. A.
Hamilton, Ontario	30.18	766.6	30.58	776.7	27.7	— 2.4	84	NE			1	0				0	0	Clear	Geo. Dickson, M. A
Heart's Content, N. F	29.60	751.8	29.92	752.3	38	3.3	72	NW			6	0	6ks		NW	0	0	Cloudy	E. Weedon.
*Kingston, Ontario	30.28	769.1	30.64	778.2	20	— 6.7	92	N	1	0.4		0	0			0	0	Clear	S. Woods, M. A.
Little Glace Bay, N. S	30.01	762.2	30.05	763.3	36.8	2.7	78	NW	12	5.4		9c		NW		0.09	2.3	Cloudy	C. H. Rigby.
*Montreal, Quebec	30.34	770.6	30.55	776.0	25	— 3.9	75	N	6	2.7		Haze	5s			0.02	0.5	Cloudy	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.84	757.9	30.61	777.5	14	—10.0	73	NE	6	2.7		0	0			0	0	Clear	Rev. R. Mosley.
Peterboro, Ontario	29.80	756.9	30.63	778.0	16.6	— 8.6	44	E			1	0	0			0	0	Clear	J. F. Jeffers, B. A.
Port Dover, Ontario	29.81	757.2	30.56	776.2	24	— 4.4	93	NE	6	2.7		0	0			0	0	Clear	H. Morgan.
Port Hastings, N. S	30.02	762.5	30.07	763.8	38.4	3.6		W	6	2.7						0	0	Fine	Peter Grant.
Port Stanley, Ontario	29.82	757.4	30.51	774.9	26	— 3.3	87	E	8	3.6		2c	0	E		0	0	Clear	M. Payne.
*Quebec, Quebec	30.12	765.0	30.46	773.7	20	— 6.7	56	NW	16	7.2		0	0			0	0	Clear	Capt. Ashe, R. N
*Rockliffe, Ontario	30.12	765.0	30.62	777.7	18	— 7.8	90	NW	4	1.8			10s		NW	Inap.	Inap.	Cloudy	W. H. McIntyre.
St. John, N. B	30.14	765.5	30.31	769.9	29	— 1.7	89	NW	8	3.6			10k			0	0	Overcast	G. Murdock, C. E.
*Saugeen, Ontario	29.77	756.1	30.52	775.2	22	— 5.6	93	SE	6	2.7		0	0			0	0	Clear	K. Stewart.
Stayner, Ontario			30.60	777.2	15	— 9.4	93	Calm	0	0		0	0			0	0	Clear	R. J. Cole.
Stratford, Ontario	29.16	740.7	30.54	775.7	21.6	— 5.8	95	SE	7.0	3.1		0				0	0	Fine	C. J. MacGregor, M. A.
*Sydney, C. B	30.01	762.2	30.04	763.0	35	1.7	86	W	3	1.3		8c	2ks	S	NW	0.01	0.3	Fair	T. C. Hill.
*Toronto, Ontario	30.18	766.6	30.60	777.2	21	— 6.1	84	N	10	4.5		0	2s		Calm	0	0	Clear	Magnetic Observatory.
Windsor, N. S	30.20	767.1	30.29	769.4	32.5	0.3	79	NW	12	5.4		2cs	6k			0	0	Fair	Prof. John E. Oram.
Woodstock, Ontario																			J. Montgomery.
Sub-Series.																			
St. Johns, Newfoundland					37.0	2.8	81	W				10ks	10s;n			0.04	1.0	Threatening	John Delany.

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Byt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Barometer: Corrected for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er. 0—10.	Clouds. Amount. Low'r. 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	30.27	768.8	30.52	775.2	21	— 6.1	70	NW	11	4.9	.....	0	2s	.....	Calm	0	0	Clear	
Alpena, Michigan	29.80	756.9	30.49	774.4	32	0 0	79	S	3	1.3	.....	.....	10s	.....	S	0	0	Cloudy	
Atlantic City, New Jersey	30.47	773.9	30.49	774.4	32	0.0	69	N	16	7.2	.....	0	0	.....	.....	0	0	Clear	
Augusta, Georgia	30.18	766.6	30.37	771.4	50	10.0	75	NE	4	1.8	.....	2ck	2s	W	E	0	0	Fair	
Baltimore, Maryland	30.47	773.9	30.52	775.2	38	3.3	54	NE	2	0.9	.....	2c	2s	Calm	Calm	0	0	Fair	
Barnegat, New Jersey	30.48	774.2	30.50	774.7	31	— 0.6	68	N	16	7.2	.....	2c	0	NW	.....	0	0	Clear	
Bismarck, Dakota	27.82	706.6	29.49	749.0	34	1.1	89	SE	8	3.6	.....	.....	10s	.....	SE	0	0	Cloudy	
Boise City, Idaho	27.46	697.5	30.23	767.8	30	— 1.1	84	E	1	0.4	.....	0	0	.....	.....	0.09	2.3	Clear	
Boston, Massachusetts	30.29	769.4	30.46	773.7	27	— 2.8	64	NW	12	5.4	.....	0	1s,hz.	.....	.....	0	0	Clear	
Brackettville, Texas	28.75	730.2	29.78	756.4	52	11.1	53	W	9	4.0	.....	0	0	.....	.....	0	0	Clear	
Breckenridge, Minnesota	28.85	732.8	29.86	758.4	37	2.8	90	SE	28	12.5	.....	.....	10s	.....	Calm	0	0	Cloudy	
Brownsville, Texas	29.87	758.7	29.94	760.5	55	12.8	87	N	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Buffalo, New York	29.80	756.9	30.57	776.5	23	— 5.0	60	NE	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Burlington, Vermont	30.29	769.4	30.57	776.5	28	— 2.2	77	NW	4	1.8	.....	.....	10s	.....	NW	0	0	Cloudy	
Cairo, Illinois	29.71	754.6	30.10	764.5	55	12.8	50	E	8	3.6	.....	.....	10s	.....	E	0	0	Cloudy	
Camp Grant, Arizona	25.20	647.1	30.00	762.0	39	3.9	25	NE	.....	.....	1	0	0	.....	.....	0	0	Clear	
Camp Verde, Arizona	26.83	681.5	30.32	770.1	32	0.0	50	Calm	.....	.....	.....	10c	0	Calm	.....	0	0	Cloudy	
Campo, California	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Cape Hatteras, N. Carolina	30.34	770.6	30.35	770.9	53	11.7	66	NE	14	6.3	.....	0	2s	.....	Calm	0	0	Fair	
Cape Henry, Virginia	30.43	772.9	30.46	773.7	47	8.3	70	N	16	7.2	.....	2ck	2s	SE	Calm	0	0	Fair	
Cape Lookout, N. Carolina	30.40	772.1	30.41	772.4	49	9.4	85	NE	20	8.9	.....	2k	0	NE	.....	0	0	Fair	
Cape May, New Jersey	30.46	773.7	30.49	774.4	32	0.0	60	N	7	3.1	.....	2cs	0	W	.....	0	0	Fair	
Charleston, South Carolina	30.27	768.8	30.34	770.6	55	12.8	87	NE	11	4.9	.....	2cs	1s	Calm	E	0	0	Fair	
Cheyenne, Wyoming	23.82	605.0	29.76	755.9	37	2.8	52	W	4	1.8	.....	8c	0	Calm	.....	0	0	Fair	
Chicago, Illinois	29.55	750.6	30.27	768.8	40	4.4	73	SE	11	4.9	.....	5cs	0	Calm	.....	0	0	Fair	
Cincinnati, Ohio	29.63	752.6	30.30	769.6	41	5.0	74	E	4	1.8	.....	5cs	5s	Calm	Calm	0	0	Cloudy	
Cleveland, Ohio	29.72	754.9	30.49	774.4	31	— 0.6	79	E	5	2.2	.....	5c	5s	SW	Calm	0	0	Cloudy	
Concho, Texas	27.98	710.7	29.64	752.8	58	14.4	53	NW	12	5.4	.....	8cs	0	NW	.....	0	0	Cloudy	
Corsicana, Texas	29.28	743.7	29.74	755.4	56	13.3	93	W	2	0.9	.....	.....	10s	.....	Calm	2.61	66.3	Cloudy	
Davenport, Iowa	29.55	750.6	30.21	767.3	35	1.7	79	E	10	4.5	.....	1c	7s	Calm	Calm	0	0	Cloudy	
Denison, Texas	28.97	735.8	29.76	755.9	52	11.1	100	N	4	1.8	.....	.....	10n	.....	Calm	1.48	37.6	Heavy rain	
Denver, Colorado	24.58	624.3	29.80	756.9	30	— 1.1	68	S	4	1.8	.....	0	2s	.....	Calm	0	0	Clear	
Detroit, Michigan	29.73	755.1	30.44	773.2	35	1.7	80	E	4	1.8	.....	5cs	5s	NW	E	0.01	0.3	Cloudy	
Dodge City, Kansas	27.32	693.9	29.63	752.6	41	5.0	100	NE	3	1.3	.....	.....	Fog	.....	Calm	0.03	0.8	Foggy	
Dubuque, Iowa	29.49	749.0	30.22	767.6	33	0.6	89	SE	3	1.3	.....	5cs	0	Calm	.....	0	0	Fair	
Duluth, Minnesota	29.17	748.5	30.18	766.6	36	2.2	80	NW	6	2.7	.....	.....	10s	.....	NW	0	0	Cloudy	
Eagle Pass, Texas	29.18	741.2	29.93	760.2	48	8.9	70	NW	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Eastport, Maine	30.26	768.6	30.33	770.4	32	0.0	79	N	14	6.3	.....	.....	10s	.....	N	0.11	2.8	Cloudy	
Erie, Pennsylvania	29.72	754.9	30.49	774.4	30	— 1.1	78	Calm	0	0	.....	2c	0	.....	.....	0	0	Fair	
Escanaba, Michigan	29.68	753.9	30.37	771.4	38	3.3	81	S	16	7.2	.....	.....	10s	.....	S	0.03	0.8	Cloudy	
Florence, Arizona	28.45	722.6	30.05	763.3	40	4.4	18	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Fort Bayard, New Mexico	24.02	610.1	30.02	762.5	34	1.1	51	NE	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Fort Craig, New Mexico	25.52	648.2	.....	.....	26	— 3.3	75	NW	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Fort Gibson, Indian Ter	29.26	743.2	29.79	756.7	50	10.0	86	N	7	3.1	.....	.....	10s	.....	E	0.11	2.8	Cloudy	
Fort Griffin, Texas	28.56	725.4	29.83	757.7	50	10.0	86	NW	8	3.6	.....	.....	10ks	.....	W	0.26	6.6	Cloudy	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	28.57	725.7	29.68	753.9	47	8.3	100	N	.....	.....	5	.....	10s	.....	N	3.13	79.5	Cloudy	
Galveston, Texas	29.80	756.9	29.85	758.2	59	15.0	81	W	4	1.8	.....	0	0	.....	.....	2.53	64.3	Clear	
Grand Haven, Michigan	29.70	754.4	30.39	771.9	30	— 1.1	78	SE	11	4.9	.....	0	0	.....	.....	0.01	0.3	Clear	
Indianapolis, Indiana	29.46	748.3	30.27	768.8	37	2.8	71	NE	2	0.9	.....	8cs	0	Calm	.....	0	0	Fair	
Indianola, Texas	29.85	758.2	29.88	758.9	59	15.0	81	NW	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Jacksboro, Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Jacksonville, Florida	30.14	765.5	30.17	766.3	70	21.1	66	NE	10	4.5	.....	.....	10s	.....	E	0	0	Cloudy	
Keokuk, Iowa	29.44	747.8	30.07	763.8	37	2.8	80	E	8	3.6	.....	0	4s	.....	Calm	0	0	Fair	
Key West, Florida	29.97	761.2	30.01	762.2	76	24.4	69	E	11	4.9	.....	2k	0	E	.....	0	0	Fair	
Kittyhawk, North Carolina	30.43	772.9	30.46	773.7	51	10.6	72	NE	19	8.5	.....	2ck	2s	W	Calm	0	0	Fair	
Knoxville, Tennessee	29.28	743.7	30.32	770.1	45	7.2	60	NE	3	1.3	.....	5ck	Sm'e	SW	.....	0	0	Smoky	
La Crosse, Wisconsin	29.43	747.5	30.20	767.1	33	0.6	70	SE	4	1.8	.....	Haze	Haze	.....	.....	0.28	7.1	Hazy	
La Mesilla, New Mexico	26.08	662.4	30.23	767.8	33	0.6	70	E	2	0.9	.....	0	0	.....	.....	0.06	1.5	Clear	
Laredo, Texas	.....	.....	.....	.....	47	8.3	85	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Leavenworth, Kansas	29.13	739.9	29.99	761.7	42	5.6	75	NE	2	0.9	.....	10cs	0	Calm	.....	0.02	0.5	Cloudy	
Los Angeles, California	29.67	753.6	30.01	762.2	48	8.9	48	N	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Louisville, Kentucky	29.67	753.6	30.25	768.3	42	5.6	73	NE	5	2.2	.....	5ck	Fog	SW	Calm	0	0	Fair	
Lynchburg, Virginia	29.80	756.9	30.51	774.9	42	5.6	55	Calm	0	0	.....	5c	Haze	NW	Calm	0	0	Fair	
Maricopa Wells, Arizona	.....	.....	.....	.....	32	0.0	30	N	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Marquette, Michigan	29.57	751.1	30.30	769.6	36	2.2	70	S	6	3.0	.....	.....	10s	.....	Calm	0	0	Cloudy	
Mason, Texas	28.21	716.5	29.96	761.0	50	10.0	78	W	8	3.6	.....	0	5s	.....	.....	0	0	Fair	
Memphis, Tennessee	29.62	752.3	29.94	760.5	53	11.7	100	E	20	8.9	.....	.....	10n	.....	E	0.85	21.6	Light rain	
Milwaukee, Wisconsin	29.60	751.8	30.32	770.1	40	4.4	91	SE	17	7.6	.....	.....	8s	.....	SE	Inap.	Inap.	Cloudy	
Mobile, Alabama	29.92	760.0	29.96	761.0	65	18.3	89	SE	20	8.9	.....	.....	10s	.....	SE	0.07	1.8	Cloudy	
Montgomery, Alabama	29.89	759.2	30.13	765.3	59	15.0	69	E	15	6.7	.....	.....	10s	.....	SW	Inap.	Inap.	Threatening	
Morgantown, West Virginia	29.31	744.5	30.43	772.9	35	1.7	70	Calm	0	0	.....	0	Sm'e	.....	.....	0	0	Clear	
Mt. Washington, N. H.	23.81	604.8	30.17	766.3	6	—14.4	76	NW	36	16.1	.....	0	10s	.....	NW	0	0	Fair	
Nashville, Tennessee	29.62	752.3	30.16	766.1	52	11.1	86	E	5	2.2	.....	.....	10s	.....	E	0	0	Cloudy	
New Haven, Connecticut	30.39	771.9	30.51	774.9	29	— 1.7	67	N	2	0.9	.....	0	0	.....	.....	0	0	Clear	
New London, Connecticut	30.45	773.4	30.51	774.9	26	— 3.3	75	NW	4	1.8	.....	0	Haze	.....	Calm	0	0	Clear	
New Orleans, Louisiana	29.80	756.9	29.87	758.7	64	17.8	89	S	12	5.4	.....	.....	10n	.....	S	2.94	74.7	Light rain	
Newport, Rhode Island	30.42	772.7	30.47	773.9	30	— 1.1	57	NW	9	4.0	.....	0	0	.....	.....	0	0	Clear	
New York, New York	30.33	770.4	30.52	775.2	31	— 0.6	69	NW	5	2.2	.....	0	Fog	.....	NW	0	0	Clear	
Norfolk, Virginia	30.42	772.7	30.48	774.2	41	5.0	82	NE	4	1.8	.....	5ck	Fog	Calm	Calm	0	0	Fair	
North Platte, Nebraska	26.97	685.0	29.55	750.6	38	3.3	90	S	16	7.2	.....	.....	10s	.....	S	0	0	Cloudy	
Olympia, Washington Ter.	30.25	768.3	30.29	769.4	38	3.3	90	S	4	1.8	.....	1c	0	Calm	.....	0.04	1.0	Clear	
Omaha, Nebraska	28.90	734.0	30.01	762.2	35	1.7	90	SE	2	0.9	.....	Haze	5s	Calm	Calm	Inap.	Inap.	Fair	
Oswego, New York	30.26	768.6	30.60	777.2	32	0.0	79	E	6	2.7	.....	10k	0	N	.....	0	0	Cloudy	
Pembina, Dakota	28.97	735.8	29.80	756.9	37.5	3.1	86	S	12	5.4	.....	.....	10s	.....	Calm	0	0	Cloudy	
Philadelphia, Pennsylvania	30.48	774.2	30.53	775.4	30	— 1.1	68	N	16	7.2	.....	0	Sm'e	.....	Calm	0	0	Clear	
Phœnix, Arizona	.....	.....	.....	.....	37	2.8	37	SE	.....	.....	.....	1cs	0	N	.....	0	0	Clear	
Pike's Peak, Colorado	17.64	448.0	29.85	758.2	10	—12.2	38	NW	40	17.9	.....	0	0	.....	.....	0	0	Clear	
Pioche, Nevada	24.10	612.1	29.87	758.7	34	1.1	34	N	9	4.0	.....	0	0	.....	.....	0	0	Clear	
Pittsburg, Pennsylvania	29.57	751.1	30.44	773.2	33	0.6	79	E	6	2.7	.....	2c	0	N	.....	0	0	Fair	
Port Huron, Michigan	29.78	756.4	30.49	774.4	27	— 2.8	88	SE	6	2.7	.....	0	0	.....	.....	0.03	0.8	Clear	
Portland, Maine	30.38	771.6	30.43	772.9	32	0.0	59	NW	8	3.6	.....	8k	Haze	N	.....	0	0	Cloudy	
Portland, Oregon	30.34	770.6	30.45	773.4	36	2.2	100	Calm	0	0	.....	.....	Fog	.....	Calm	0.10	2.5	Foggy	
Prescott, Arizona	24.80	629.9	30.16	766.1	31	— 0.6	58	SW	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Punta Rassa, Florida	30.08	764.0	30.10	764.5	70	21.1	95	E	10	4.5	.....	.....	10n	.....	E	0	0	Cloudy	
Red Bluff, California	29.86	758.4	30.23	767.8	48	8.9	43	N	16	7.2	.....	0	0	.....	.....	0	0	Clear	
Rochester, New York	29.91	759.7	30.58	776.7	23	— 5.0	73	SW	4	1.8	.....	2k	0	E	.....	0	0	Fair	
Roseburg, Oregon	29.81	757.2	30.41	772.4	36.5	2.5	95	E	4	1.8	.....	.....	10s	.....	Calm	0.67	14.5	Cloudy	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	BAROMETER. Corrected for instrum'tal error and temperature. Inches.	BAROMETER. Corrected for instrum'tal error and temperature. Millimeters	BAROMETER. Reduced to sea-level. Inches.	BAROMETER. Reduced to sea-level. Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Upper. From—	CLOUDS. Direction. Lower. From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	WEATHER.	OBSERVER.
Sacramento, California	30.08	764.0	30.16	766.1	44	6.7	67	N	11	4.9	.....	0	0	.....	.....	0	0	Clear.	
St. Louis, Missouri	29.51	749.5	30.09	764.3	45	7.2	61	E	6	2.7	.....	.....	10s	.....	Calm	0	0	Cloudy	
St. Marks, Florida	30.12	765.0	30.13	765.3	63	17.2	94	E	6	2.7	.....	.....	10s	.....	S	0	0	Cloudy	
St. Paul, Minnesota	29.23	742.4	30.09	764.3	32	0.0	89	E	10	4.5	.....	0	0	.....	.....	0	0	Clear	
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salt Lake City, Utah	25.81	655.6	30.14	765.5	34	1.1	61	SW	12	5.4	.....	0	0	.....	.....	0.12	3.0	Clear.	
San Antonio, Texas	29.17	740.9	29.76	755.9	49	9.4	93	SW	3	1.3	.....	0	0	.....	.....	0.02	0.5	Clear.	
San Diego, California	29.97	761.2	30.04	763.0	51	10.6	59	NE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Sandusky, Ohio	29.74	755.4	30.46	773.7	37	2.8	80	SE	10	4.5	.....	2c	Sm'e	Calm	Calm	0	0	Fair	
Sandy Hook, New Jersey	30.48	774.2	30.50	774.7	32	0.0	69	N	10	4.5	.....	0	Sm'e	.....	.....	0	0	Clear	
San Francisco, California	30.10	764.5	30.16	766.1	52	11.1	79	N	6	2.7	.....	Haze	0	.....	.....	0	0	Clear	
Santa Fé, New Mexico	23.19	589.0	29.73	755.1	28	— 2.2	67	NE	5	2.2	.....	0	Haze	.....	.....	0	0	Clear	
Savannah, Georgia	30.19	766.8	30.29	769.4	58	14.4	87	E	11	4.9	.....	2cs	8ck	Calm	SE	Inap.	Inap.	Cloudy	
Shreveport, Louisiana	29.53	750.0	29.74	755.4	63	17.2	94	E	8	3.6	.....	.....	10s	.....	Calm	1.00	25.4	Cloudy	
Smithville, North Carolina	30.37	771.4	30.41	772.4	47	8.3	92	N	9	4.0	.....	0	8s	.....	NE	0	0	Cloudy	
Springfield, Massachusetts	30.29	769.4	30.43	772.9	27	— 2.8	66	Calm	0	0	.....	5c	0	N	.....	0	0	Fair	
Stanwix, Arizona	.....	.....	.....	.....	34	1.1	43	NW	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Stockton, Texas	26.94	684.3	29.94	760.5	45	7.2	84	W	12	5.4	.....	.....	10s	.....	W	0.30	7.6	Cloudy	
Thatcher's Island, Mass.	30.38	771.6	30.44	773.2	32	0.0	79	NW	20	8.9	.....	8k	0	NE	.....	0	0	Fair	
Toledo, Ohio	29.72	754.9	30.44	773.2	36	2.2	70	Calm	0	0	.....	5c	0	Calm	.....	0.01	0.3	Fair	
Tucson, Arizona	27.60	701.0	30.15	765.8	36	2.2	45	S	.....	.....	.....	.....	Fog	.....	.....	0	0	Foggy	
Tybee Island, Georgia	30.24	768.1	30.27	768.8	61	16.1	88	NE	24	10.7	.....	10cs	0	W	.....	0	0	Cloudy	
Umatilla, Oregon	30.02	762.5	.....	.....	35	1.7	90	SW	4	1.8	.....	0	0	.....	.....	0.17	4.3	Clear	
Vicksburg, Mississippi	29.62	752.3	29.87	758.7	62	16.7	88	E	12	5.4	.....	.....	10s	.....	E	1.53	38.9	Cloudy	
Virginia City, Montana	24.30	617.2	29.78	756.4	11	—11.7	80	W	4	1.8	.....	0	0	.....	.....	0.18	4.6	Clear	
Visalia, California	29.80	756.9	30.18	766 6	44	6.7	92	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Washington, D. C.	30.40	772.1	29.52	775.2	33	0.6	79	N	1	0.4	.....	2c;hz	8mk;fg	W	N;S	0	0	Fair	
Wickenburg, Arizona	.....	.....	.....	.....	27	— 2.8	8	NW	.....	.....	.....	5c	0	.....	.....	0	0	Fair	
Wilmington, N. Carolina	30.35	770.9	30.44	773.2	41	5.0	83	NE	6	2.7	.....	0	5s	.....	NE	0	0	Fair	
Winnemucca, Nevada	25.88	657.3	30.24	768.1	22	— 5.6	72	SW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Wood's Holl, Mass.	30.41	772.4	30.47	773.9	31	— 0.6	58	N	13	5.8	.....	0	5s	.....	NE	0	0	Fair	
Yankton, Dakota	28.68	728.5	30.00	762.0	38	3.3	90	SE	10	4.5	.....	0	8s	.....	SW	0.08	2.0	Cloudy	
Yuma, Arizona	29.87	758.7	30.03	762.7	46	7.8	48	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
SUB-SERIES.																			
York Factory, B. A.	29.50	749.3	29.55	750.6	36.0	2.2	100	SW	9	4.0	.....	4k	6s	N	N	0	0	Snowing	J. Fortescue, W. Wood.
Havana, Cuba, W. I.	29.95	760.7	29.97	761.2	73	22.8	81	SE	2.4	1.1	.....	10c	0	Calm	.....	0	0	Fair	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.00	762.5	30.07	763.8	79	26.1	76	Calm	0	0	.....	8c	2s	Calm	SE	0.03	0.8	.....	James Gall.
Navassa, W. I.	29.84	757.9	29.92	760.0	82	27.8	.....	NE	30	13.4	.....	.....	.....	.....	.....	0	0	Fair	F. M Everett.
St. Thomas, W. I.	.....	.....	.....	.....	86	30.0	83	E	1	0.4	.....	2c	2ks	NE	.....	0	0	.....	G. O. Gellich.
Paramaribo, D. Guiana, S. A.	.....	.....	29.94	760.5	85	29.4	72	E	.....	.....	2	4k	.....	E	.....	0	0	Clear	C. J. Hering.
Batavia, Dutch Guiana, S. A.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Dr. H. Groot.
Medellin, Colombia, S. A.	25.19	639.8	.....	.....	67.0	19.4	82	Calm	.....	.....	0	3cs;k	.....	.....	.....	0.23	5.8	Fair	Thomas Herran.
Honolulu, Oahu, H. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Daniel Smith.
Makawao, Maui, H. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters: Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.6 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,323 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.67 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not certain. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
NavyYard MareIsland,Cal.	30.14	765.5	49	9.4	48	8.9	63	NE	7	3.1	.....	.....	4s	.....	Calm	0	0	.....	.....	Fine...	.....
Navy Yard, Pensacola, Fla.	30.11	764.8	.....	. .....	66	18.9	100	ENE	31	13.9	.....	.....	10	.....	.....	3.15	80. 0	.....	.....	D. clouds.....	.....
NavyYard,Portsmouth,N.H	30.43	772.9	61	16.1	26	— 3.3	??	NW	.....	.....	1	.....	.....	.....	.....	0	0	.....	.....	Clear	.....
Naval Hospital, Yokohama, Japan.....	30.26	768.6	52	11.1	41	5.0	83	N	.....	.....	2	.....	2k	.....	SW	0	0	.....	.....	Fair.....	.....
Adams. Punta Arenas, Patagonia.	29.40	746 7	53	11 7	52	11.1	75	WNW	.....	.....	2	.....	10	.....	NW	Heavy	Heavy	Light	NE	D. clouds.....	.....
Alert, Yokohama, Japan.....	30.43†	772.9†	49	9.4	49	9.4	71	N	.....	.....	2	.....	3	.....	N	.....	.....	.....	.....	Hazy.....	.....
Alliance, Constantinople, Turkey.	30.24	768.1	62	16.7	60	15.6	82	SSW	.....	.....	0–1	.....	1	.....	Calm	.....	.....	.....	.....	Pleasant.....	.....
Ashuelot. Tientsin, China.....	30.53	775.4	42	5.6	34	1.1	62	SSW	.....	.....	1–2	.....	9	.....	W	.....	.....	.....	.....	D. clouds.....	.....
Canonicus, New Orleans, La.....	29.86	758.4	48	8.9	63	17.2	94	ESE	.....	.....	3	.....	10	.....	.....	.....	.....	.....	.....	Cloudy.....	.....
Colorado, New York, N. Y.....	30.48	774.2	32	0.0	31	— 0 6	68	NNW	2	0.9	.....	.....	4	.....	NNW	0	0	.....	.....	Fair.....	.....
Despatch, Constantinop'e, Turkey.	30.17	766.3	70	21.1	61	16.1	61	ESE	.....	.....	1	.....	1	.....	Calm	.....	.....	.....	.....	Clear.....	.....
Essex, N. 4° 06′ E. 2° 16″.....	29.84	757.9	83	28 3	86	30.0	92	SW	.....	.....	1	.....	0?	.....	.....	.....	.....	Smooth	S	Overcast.?...	.....
Franklin, Norfolk, Va.....	30.40	772.1	45	7.2	44	6.7	76	NE	3.5	1.6	.....	.....	2	.....	NE	0	0	.....	.....	D. clouds.....	.....
Guard, N. 34° 15′, W. 33° 40′.....	30.55	776.0	71	21.7	69	20.6	80	E	.....	.....	4	.....	3	.....	E	.....	.....	Moder-ate	E	D. clouds.....	.....
Lackawana, San Francisco, Cal.....	30.23	767.8	.....	.....	57	13.9	75	N	.....	.....	0–1	.....	2	.....	.....	.....	.....	.....	.....	D. clouds.....	.....
Marion, Smyrna, Turkey.....	30.17	766.3	61	16.1	62	16.7	56	WSW	.....	.....	1	.....	0	.....	.....	0	0	Smooth	.. ...	Blue sky.....	.....
Michigan, Erie, Pa.....	29.96	761.0	58	14.4	30	— 1.1	68	NE	.....	.....	2	.....	0	.....	.....	0	0	.....	.....	Clear	.....
Monongahela, N. 34° 52, E. 21° 42′.....	29.85	758.2	66	18.9	66	18.9	89	S	.....	.....	5	.....	kn	.....	.....	Heavy	Heavy	Rough	S&E	Squally	.....
New Hampshire, Port Royal, S.C.....	30.42	772 7	.....	....	55	12.8	??	NE	16	7.2	.....	.....	8	.....	SE	0	0	.....	. .....	D. clouds. ...	.....
Omaha, Callao , Peru.....	30.08	764.0	74	23.3	73	22.8	95	SE	2	0.9	.....	.....	10	.....	SE	0	0	Smooth	.....	Pleasant.....	.....
Onward, Callao, Peru.....	30.02†	762.5†	74	23.3	71	21.7	90	SE	.....	.....	2	.....	9	.....	.....	.....	.....	Long	W	Misty.....	.....
Ossipee, Norfolk, Va.....	30.51	774.9	68	20.0	45	7.2	76	NNE	.....	.....	2	.....	7	.....	NNE	.....	.....	.....	.....	D. clouds.....	.....
Palos, Shanghai, China.....	30.56	776.2	57	13.9	53	11.7	73	E	.....	.....	2	.....	10	.....	.....	.....	.....	.....	.....	Clear?.....	.....
Plymouth. N. 35° 27′, W. 73° 33′.....	30.44	773.2	61	16.1	63	17.2	94	ENE	.....	.....	4	.....	5	.....	.....	.....	.....	Moder-ate.	ENE	.....	.....
Powhatan, Hampton Roads, Va.....	....	.....	42	5.6	46	7.8	92	NE	8.4	3.8	.....	.....	0	.....	.....	0	0	.....	.....	Clear.....	.....
Ranger, Shanghai, China.....	30.64	778.2	68	20.0	56	13.3	75	E	.....	.....	1	.....	10	.....	ESE	.....	.....	.....	.....	Cloudy.....	.....
Rio Bravo, Brownsville, Texas.....	29.81	757 2	.....	..... .	54	12.2	87	NW	.....	.....	3	.....	2	.....	NW	.....	.....	.....	.....	Hazy..	.....
Santee, Annapolis, Md.....	30.58	776.7	66	18.9	39	3.9	73	NW	.....	. ....	1	.....	2	.....	NW	0	0	.....	.....	Clear.....	.....
Saratoga, Hampton Roads, Va.....	.....	.....	.....	.....	51	10.6	??	E	.....	.....	4	.....	3	.....	E	0	0	.....	.....	Clear.	.....
St. Louis, League Island, Pa	30.36	771.1	33	0.6	33	0.6	70	ENE	3	1.3	.....	.....	0	.....	.....	0	0	.....	.....	Clear.	.....
Swatara, Hampton Roads, Va.....	30.53	775.4	.....	.....	48	8.9	49	NE	.....	. ....	4	.....	3	.....	N&E	.....	.....	.....	.....	D. clouds.....	.....
Tennessee, Yokohama, Japan.....	30.44	773.2	68	20.0	44	6.7	68	NNW	6	2.7	.....	.....	3	.....	WSW	0	0 ·	Light	ENE	Hazy.....	.....
Trenton, Villefranche, France.....	29.81	757.2	.....	.....	60	15.6	71	S	3	1.3	.....	.....	8	.....	S	0	0	.....	.....	D clouds....	.....
Vandalia, Villefranche, France.,...	29.76	755.9	60	15.6	58	14.4	76	SW	.....	.....	0–1	.....	8	.....	WSW	.....	.....	.....	.....	D. clouds....	.....
Wabash, Boston, Mass.....	30.45	773.4	47	8.3	27	— 2.8	??	NW	10	4.5	.....	.....	2	.....	NW	0	0	.....	.....	D. clouds.....	.....
Wyoming, Washington, D. C.....	30.57†	776.5†	.....	.....	31	— 0.6	.....	Calm	.....	.....	0	.....	3	.....	.....	.....	.....	.....	.....	D. clouds.....	.....

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. ‡ Barometer corrected for instrumental error and reduced to sea-level. The position given for the Plymouth is that at noon, local time, instead of that at 7:35 a. m., Washington time.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	TRUE COURSE TOWARD—	HOURLY RATE IN KNOTS.	BAROMETER REDUCED TO SEA-LEVEL.		TEMPERATURE OF THE AIR.		RELATIVE HUMIDITY.	WIND.				CLOUDS.				SEA-SWELL.		WEATHER.	OBSERVER.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.	CHARACTER.	DIRECTION FROM—		
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—				
S. S. Alaska																			Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama, Panama Bay			29.67	753.6	79	26.1	95	NW			3		8		NW			D. clouds	Capt. Howard.
S. S. City of Peking, N. 39° 57′, W. 135° 03′			30.33*	770 4*	59	15.0	94	S			5		5		S	Moderate.	S	D clouds	Lt. Z. L. Tanner, U.S.N
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio, N. 31° 07′, E. 149° 52′			30.18	766.6	70	21.1		S			4					Long	NNW	Blue sky	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

NOTE.—The originals give the wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. *Aneroid.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson.
S. S. Celtic																			Capt. R. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.

S. S. Belgic																			Capt. John Metcalf.
S. S. Gaelic, N. 33° 54′, W. 135° 14′			30.21*	767.3*	67	19.4	95	NNW			4		c		NNW	Long	WNW	D. clouds	Capt. W. H. Kidley
S. S. Oceanic, N. 39° 37′, E. 154° 0′			30.16	766.1	48	8.9	85	W			3–5		6		NW	High	NW;N	Squally	Capt. H. Parsell

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. *Aneriod.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andre[illegible]n
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig, N. 49° 38′, W. 20° 51′	885½W	10.5	30.25	768.3	58.0	14.4	88	WSW			4		k		NW	Swell	NW	Overcast	Capt. K. Undi[illegible]
S. S. Nürnberg																			Capt. A. Jaeger
S. S. Ohio, N. 40° 58′, W. 64° 23′			30.26	768.6	43.0	6.1	83	WNW			5		ks		WSW	Rough	WNW	Squally	Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, nor distinguish between upper and lower clouds.

UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Lo'wr	Upper.	Lower.	Character	Direction From—		
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second	0—10.	0—10.	0—10.	From—	From—				
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, Irish Channel			29.71*	754.6*	55	12.8	??	WNW			4		8		WNW		SE	Cloudy	Captain Sargent.
S. S. Ohio. Liverpool			29.57	751.1	51	10.6	93	NW			5		7		NW			Overcast	Captain Morrison.
S. S. Pennsylvania																			Captain Harris.
RED STAR LINE MARINE SERIES.																			
Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.																			
S. S. Nederland																			Capt. Randle.
S. S. Switzerland, N. 49° 14′, W. 25° 45′			30.32*	770.1*	56	13.3		WSW	30	13.4			5		WSW	Moderate.	W	Partly o'cast	Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.
*Aneroid; regulated to standard at Antwerp.																			
ALLAN LINE MARINE SERIES.																			
Furnished by the coöperation of A. Schumacher, & Co., Agents.																			
S. S. Hibernian																			Capt. W. Richardson.
S. S. Scandinavian																			
MARINE SERIES. (Miscellaneous.)																			
Furnished by the coöperation of the Observer named.																			
Schooner Addie Fuller, Kennebunk, Maine			30.37	771.4	36	2.2	70	Calm	0	0			0					Clear	Capt. James Jorgensen.

NOTE.—The originals give the barometer as read off; the wind-force by the scale 0 to 12. *Aneroid; correction for elevation applied, instrumental error not known.

NOTE.—The originals for the schooner Addie Fuller give the amount of cloudiness by the scale 0 to 4; the barometer as read off.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer. U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON NOVEMBER 21, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours	.....	.....	30.24	768.1	66.7	19.3	57	NW	.....	.....	1	.....	2	.....	.....	0	0	Fair	Michel.
Algiers	.....	.....	30.08	763.9	62.2	16.8	59	N	.....	.....	1	.....	1	.....	.....	0.280	7.1	Very fair	Peter.
La Calle	.....	.....	29.98	761.5	58.1	14.5	68	NNW	.....	.....	3	.....	9	.....	.....	0.39	10.	Covered	Fleury.
Tunis	.....	.....	29.92	760.0	59.5	15.3	58	NW	.....	.....	4	.....	9	.....	.....	0.059	1.5	Covered	Jacques.
Sfax	.....	.....	29.87	761.2	64.4	18.0	.....	W	.....	.....	1	.....	7	.....	.....	0	0	Very cloudy	Husson.
Saida	.....	.....	30.21	767.2	52.2	11.2	68	N	.....	.....	3	.....	2	.....	.....	0	0	Fair	Millot.
Tebessa	.....	.....	30.02	762.5	.....	.....	.....	W	.....	.....	2	.....	9	.....	.....	.....	.....	Covered	Bourgeois.
Geriville	.....	.....	30.12	765.1	49.6	9.8	76	NNW	.....	.....	3	.....	4	.....	.....	0	0	Cloudy	Lemaillot.
Laghouat	.....	.....	30.16	766.1	57.2	14.0	57	W	.....	.....	4	.....	4	.....	.....	0	0	Cloudy	Guyot.
Biskra	.....	.....	30.06	763.4	68.4	20.2	37	NW	.....	.....	3	.....	6	.....	.....	0	0	Cloudy	Kuntz.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,380? m.; or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Agram	29.17	740.9	29.72	755.0	44.1	6.7	70	NE	.....	.....	3	.....	10	.....	.....	0.224	5.7	Raining	Prof. Ivan Stozir
Cracow, I. R. Observatory	29.00	736.6	29.78	756.5	38.8	3.8	97	W	.....	.....	1	.....	10	.....	.....	0.193	4.9	.....	Dr. Wierzbiski.
Eperies	28.83	732.3	29.72	754.9	43.9	6.6	73	Calm	.....	.....	0	.....	10s	.....	.....	0	0	.....	Julius Mikolik.
Gratz	28.48	723.5	29.75	755.7	44.4	6.9	41	NW	.....	.....	5	.....	10	.....	.....	0.512	13.0	.....	Andreas Rospini.
Hermannstadt	28.27	718.0	29.75	755.6	31.6	—0.2	88	NW	.....	.....	1	.....	10	.....	.....	0.197	5.00	.....	Prof. Reissenberger.
Kremsmünster	28.53	724.7	29.02	750.9	38.1	3.4	87	W	.....	.....	2	.....	10	.....	.....	0.295	7.5	.....	Prof. C. Wagner.
Lemberg	28.71	729.3	29.71	754.7	43.0	6.1	76	SE	.....	.....	1	.....	8	.....	.....	0	0	.....	Dr. T. Stanecki.
Pola	29.50	749.2	29.61	752.1	45.1	7.3	79	ENE	.....	.....	5	.....	10s	.....	.....	0.732	18.59	.....	I.R.HydrographicOffice.
Szathmar	29.31	744.5	29.79	756.6	41.2	5.1	78	E	.....	.....	2	.....	10	.....	.....	0	0	.....	Johann Tamas, S. J.
Szegedin	29.36	745.7	29.64	752.8	50.0	10.0	74	S	.....	.....	2	.....	10	.....	.....	0.014	0.35	.....	Karl Stancel.
Trieste	29.61	752.1	29.71	754.7	47.5	8.6	86	E	.....	.....	1	.....	10	.....	.....	Inap.	Inap.	Rainy	P. Busin.
Vienna	29.10	739.2	29.81	757.2	42.3	5.7	79	NW	.....	.....	2	.....	.....	.....	.....	0.343	8.7	.....	I. R. Central Met. Obs'y.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time, and at Trieste at 7 a. m. of the following day. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Arlon	28.41	721.6	29.06	760.9	39.0	3.9	82	SW	.....	.....	1	.....	9	.....	.....	0.492	12.5	.....	Prof. M. Passau.
Brussels	29.64	752.9	29.85	758.1	43.7	6.5	82	SW	.....	.....	4	?	10	NNW	SW	0.289	7.35	.....	Royal Observatory.
Furnes	29.77	756.2	29.80	756.8	46.0	7.8	92	SSW	.....	.....	2	.....	10	.....	.....	0.043	1.1	.....	M. E. de Cae.
Maeseyck	29.71	754.5	29.84	757.8	43.0	6.1	86	SSW	.....	.....	0	.....	7	.....	.....	0.295	7.5	.....	M. Pierrot.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	29.30	744.2	29.40	746.7	36.9	2.7	.....	S	8	3.6	.....	.....	9	.....	.....	0.275	6.99	Misty	W. Boswell.
Ardrossan	29.28	743.7	29.30	744.2	43	6.1	.....	SE	.....	.....	3	.....	9	.....	.....	.....	.....	Raining	William McNeil.
Armagh, Observatory	.....	.....	29.27	743.4	47.5	8.6	.....	SSW	17	7.6	.....	.....	10	.....	.....	.....	.....	Raining	S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)	.....	.....	29.46	748.3	40.8	4.9	.....	SE	27	12.1	.....	.....	10	.....	.....	.....	.....	Raining	John Hartnup.
Birr Castle, (Parsonstown)	.....	.....	29.38	746.2	52.1	11.2	.....	SW	.....	.....	4	.....	10	.....	.....	.....	.....	Raining	J. L. E. Dreyer.
Bradford, Yorkshire	29.07	738.4	29.47	748.5	42.1	5.6	.....	SW	.....	.....	4	.....	10	.....	.....	0.01	0.3	Overcast	J. McLandsborough.
Bridgetown, (Barbados)	29.90	759.4	29.93	760.2	82.0	27.8	.....	NE	.....	.....	1	.....	3	.....	.....	.....	.....	D. clouds	Pvt. G. W. Roberts, A. H.Todd. [H.C.
Cambridge, Observatory	.....	.....	29.67	753.6	42.0	5.6	.....	S	.....	.....	2	.....	10	.....	.....	.....	.....	Drizzling	
Cardington	.....	.....	29.67	753.6	42.6	5.9	.....	S	.....	.....	1	.....	10	.....	.....	.....	.....	Overcast	John McLaren.
Chatham, School M. E	29.57	751.1	29.70	754.4	44.2	6.8	.....	SW	.....	.....	2	.....	10	.....	.....	.....	.....	Drizzling	Lt. W. G. Morris, R. E.
Dartmoor	28.13	714.5	29.62	752.3	43.2	6.2	.....	W	.....	.....	6	.....	10	.....	.....	.....	.....	Rain & fog	Alexander Watt.
Davos Platz (Switzerland)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Francis Redford, M. A.
Donaghadee	29.25	742.9	29.23	743.7	47	8.3	.....	SSW	.....	.....	2	.....	10	.....	.....	.....	.....	Raining	J. Mac Gowan.
Dover	29.71	754.6	29.74	755.4	47	8.3	.....	SW	.....	.....	3	.....	8	.....	.....	.....	.....	¾ clouded	J. Costello.
Eccles, (near Manchester)	.....	.....	29.50	749.3	41.2	5.1	.....	S	3.6	1.6	.....	.....	10	.....	.....	.....	.....	Drizzling	Thomas Mackereth.
Falmouth, Observatory	29.50	749.3	29.73	755.1	53.7	12.1	.....	WSW	.....	.....	4	.....	10	.....	.....	.....	.....	Overcast	The Staff.
Fort Napier, (Natal)	27.56	700.0	29.77	756.1	76.6	24.8	.....	NE	.....	.....	2	.....	10	.....	.....	.....	.....	Blue sky	Pvt. G. Salmon, A.H.C.
Free Town, (Sierra Leone)	.....	.....	29.92	760.0	86.0	30.0	.....	Calm	.....	.....	0	.....	3	.....	.....	.....	.....	D. clouds	
Galway, Queen's College	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	30.12	765.0	30.17	766.3	65.2	18.4	.....	NW	.....	.....	3	.....	0	.....	.....	.....	.....	Blue sky	Corpl. C. Aitken, A.H.C.
Glasgow, Observatory	29.13	739.9	29.33	745.0	38.0	3.3	.....	SSE	.....	.....	2	.....	10	.....	.....	.....	.....	Raining	D. G. Maclean.
Great Yarmouth	29.70	754.4	29.71	754.6	42	5.6	.....	SW	.....	.....	3	.....	6	.....	.....	.....	.....	Hazy	G. T. Watson.
Greenwich, Royal Obs'y	29.51	749.5	29.69	754.1	43.0	6.1	.....	S	.....	.....	2	.....	10	.....	.....	.....	.....	Raining	The Staff, for G. B. Airy.
Guernsey	29.53	750.0	29.76	755.9	53	11.7	.....	SW	.....	.....	5	.....	10	.....	.....	.....	.....	Raining	Dr. S. E. Hoskins, F.R.S.
Helston	.....	.....	29.76	755.9	54	12.2	.....	W	.....	.....	6	.....	10n	.....	.....	0.45	11.4	Showery	M. P. Moyle.
Holyhead	29.31	744.5	29.36	745.7	52	11.1	.....	SW	.....	.....	3	.....	10	.....	.....	.....	.....	Raining	John Tilston.
Jersey	29.52	749.8	29.81	757.2	52.5	11.4	.....	W	.....	.....	6	.....	10	.....	.....	.....	.....	Raining	J. Fisher.
Kew, Observatory	.....	.....	29.69	754.1	43.9	6.6	.....	S	12	5.4	.....	.....	10sd	.....	.....	.....	.....	Raining	The Staff.
Kingstown	29.34	745.2	29.37	746.0	53	11.7	.....	WSW	.....	.....	4	.....	10	.....	.....	.....	.....	Raining	George Mitchell.
Leicester, Museum	.....	.....	29.60	751.8	40.8	4.9	.....	SW	.....	.....	2	.....	10	.....	.....	.....	.....	Drizzling	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.70	754.4	29.78	756.4	63.6	17.6	.....	W	.....	.....	6	.....	8	.....	.....	.....	.....	Drizzling	Sgt. C. Arbeiter, A.H.C.
Nairn	29.18	766.6	29.28	743.7	38	3.3	.....	Calm	.....	.....	0	.....	10	.....	.....	.....	.....	Overcast	W. D. Penny.
Nassau, (Bahamas)	.....	.....	30.01	762.2	74.2	23.4	.....	E	.....	.....	1	.....	10	.....	.....	.....	.....	Overcast	C. S. Duncombe.
Nottingham, Observatory	29.39	746.5	29.58	751.3	40.7	4.8	.....	S	.....	.....	3	.....	10d	.....	S	0.161	4.09	Raining	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.03	737.3	29.56	750.8	39.1	3.9	.....	S	.....	.....	3	.....	10	.....	.....	.....	.....	Raining	Rev. Stephen Whitty
Oxford, Radcliffe Obs'y	.....	.....	29.61	752.1	43	6.1	.....	S	.....	.....	1	.....	10	.....	.....	.....	.....	Raining	F. Lucas
Plymouth	29.62	752.3	29.70	754.4	51.3	10.7	.....	W	.....	.....	3	.....	10	.....	.....	.....	.....	Misty	John Merrifield.
Roche's Point	29.44	747.8	29.48	748.8	54	12.2	.....	WSW	.....	.....	5	.....	10	.....	.....	.....	.....	Showery	W. Kennedy.
Saint Ann's Head	29.38	746.2	29.53	750.0	54	12.2	.....	WSW	.....	.....	6	.....	10	.....	.....	.....	.....	Misty	John C. Walker.
Sandwick Manse, (Orkneys)	.....	.....	29.34	745.2	38.2	3.4	.....	S	15	6.7	.....	.....	10	.....	.....	.....	.....	Misty	Rev. C. Clouston, LL. D
Scutari, Cemetery, (Turkey)	.....	.....	29.78	756.4	60.8	16.0	.....	SE	.....	.....	2	.....	9	.....	.....	.....	.....	Gloomy	Sergt. W. H. Lyne.
Sheffield	29.19	741.4	29.44	747.8	40.9	4.9	.....	SSW	.....	.....	3	.....	10	.....	.....	0.83	21.1	Overcast	W. F. Cooper.
Silloth Rectory	29.17	740.9	29.20	741.7	47.4	8.6	94	W	.....	.....	3	.....	10	.....	.....	0.580	14.73	Raining	Rev. F. Redford, M. A.
Stonyhurst, Observatory	.....	.....	.....	.....	39.8	4.3	.....	S	.....	.....	3	.....	10	.....	.....	.....	.....	Misty	Rev. S. J. Perry.
Stornoway, Lews C., (Hebr.)	.....	.....	29.03	737.3	37	2.8	.....	ESE	.....	.....	6	.....	5	.....	.....	.....	.....	Raining	John Smith.
Stratfield Turgiss	29.50	749.3	29.72	754.9	42.9	6.1	.....	S	.....	.....	1	.....	10	.....	.....	.....	.....	Raining	Rev. C. H. Griffith, F.M.S.
Thurso	.....	.....	29.28	743.7	36	2.2	.....	SSE	.....	.....	2	.....	8	.....	.....	.....	.....	Overcast	John Trotter.
Truro, Royal Institution	.....	.....	29.70	754.4	55	12.8	.....	SW	.....	.....	7	.....	10	.....	.....	.....	.....	Gloomy	W. Newcombe.
Valencia, Observatory	.....	.....	29.46	748.3	53.6	12.0	.....	SW	41	18.3	.....	.....	10	.....	.....	.....	.....	Raining	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Henry Mercer.
Cape Good Hope, Obs'y	29.81	757.2	29.85	758.2	75.0	23.9	61	S	32	14.3	.....	0	1	.....	.....	.....	.....	.....	The Staff, for E. J. Stone.
Hobart Town, (Tasmania)	.....	.....	29.66	753.4	60.0	15.6	82	W	.....	.....	3	.....	10k	.....	.....	0	0	Covered	Francis Abbott, F.R.A.S.
Leith, Restalrig Park	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Andrew Gibb.
Mauritius, Observatory	29.84	757.9	30.03	762.7	78.7	25.9	62	ENE	17.0	7.6	.....	0	6	.....	E	0.02	0.5	Squally	C. Meldrum.
Melbourne, Observatory	29.82	757.4	29.91	759.7	55.8	13.2	72	SE	6	2.7	.....	.....	8	.....	E	0.04	1.0	Fine	R. L. J. Ellery.
Monach L't-house, (Hebrides)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Youngclause.
North Unst, (Shetland Is.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Robert Burnet.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m.

Marine Series. Vessels.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. 0—10.	Clouds. Direction. From—	Sea or swell. Height scale 0—9	Sea or swell. Direction from—	Weather.	Observer.
S. S. Algeria, N. 60° 30′, W. 23° 10′	29.53	750.0	51	10.6	.....	WSW	.....	.....	7	8	.....	20*	W	Showery	Capt. W. Watson.
S. S. Batavia, N. 42° 35′, W. 66° 40′	30.53	775.4	36	2.2	.....	NNW	.....	.....	3	10	.....	2	WNW	Overcast	Capt. J. E. Mouland.
Ship Camperdown	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. A. T. Miller.
Brig Catherine	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. Adam Smith.
Barque Celeste	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. D. F. McKechnie.
S. S. Hibernia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. W. R. Cato
Barque Maroon	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. A. T. Brown.
Ship Mikado	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. C. C. Prehn.
S. S. Seine	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. H. Manning.
Barque Sorata	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. Jas. J. Price.
Schooner Traveller	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. Alex Simpson.
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NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. *Feet.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	OBSERVER
San José	26.21	665.7			66.2	19.0	92	NE			2	c	k		NE	0	0		Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.41	747.0	29.46	748.2	39.6	4.2	90	W			2		10						
Fanöe	29.49	749.0	29.51	749.5	41.9	5.5	88	WNW			2		8						
Godthaab, (Greenland)	29.71	754.5	29.75	755.6	24.3	— 4.3	81	S			4		10						
Stykkisholm, (Iceland)	29.24	742.8	29.29	743.9	30.0	— 1.1	96	SE			8		8						
Thorshavn, (Faröe)	29.16	740.7	29.20	741.6	37.8	3.2	90	SE			4		10						
Vestervig	29.26	743.3	29.43	747.6	41.7	5.4	97	WNW			6		6						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

Alençon, Normal School	29.43	747.6	29.98	761.6	48.2	9	93	SW			1		10			0	0	Covered	Collignon, Director.
Amiens, Normal School	29.72	755.0	29.84	757.8	46.4	8.0	81	SW			3		5		W	0.16	4.	Cloudy	Bonvarne, Director.
Avignon, Normal School	29.90	759.5	29.98	761.5	49.6	9.8	50	N			4		0			0.04	1.	Clear	Mr. Giraud, Director.
Bar-sur-Seine	29.43	747.6	30.02	762.4	43.3	6.3	79	SW			1		10		SW	0.154	3.9	Covered	C. Saillard.
Beaumette Obs'y (Angers)	29.85	758.2	30.01	762.3	49.8	9.9	92	SW	2.7	1.2			10		W	0.110	2.8	Raining	Albert Cheux.
Beauvais	29.63	752.6	29.92	760.0	45.3	7.4	79	WSW			3		10		WSW	0.069	1.75	Covered	Normal School.
Besançon	29.17	740.8	30.08	764.0	42.1	5.6	81	S			3		5		S&N	0.169	4.3	Cloudy	Normal School.
Bourg-en-Bresse	29.19	741.5	30.11	764.8	42.3	5.7	82	W			2		10cn		N	0.370	9.4	Covered	Normal School.
Bourges, Normal School	29.49	749.1	30.06	763.4	41.7	5.4	91	E			4		5		SW	0.094	2.4	Cloudy	A. Wagner, Director.
Brest, Naval Observatory	29.60	751.9	29.82	757.4	55.2	12.9	83	W			5		7		W	0.138	3.50	Squally	The Staff.
Carcassonne, Normal School	29.73	755.1	30.15	765.8	50.4	10.2	86	W			2		10		W	0.24	6.	Covered	Vateau, Director.
Caen	29.72	754.9	29.79	756.7	44.2	6.8	88	N			1		10		N	0	0	Covered	Normal School.
Chartres, Normal School	29.37	745.9	29.94	760.5	43.9	6.6	79	S			4		10			0.16	4.	Covered	Lequin, Director.
Châlons-sur-Marne, N. Sch'l	29.62	752.3	29.98	761.6	42.4	5.8	97	SW			3		5ck		SE	0	0	Cloudy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.68	728.4	30.04	763.1	43.2	6.2	77	NW			1		10		W	0.362	9.2	Covered	Alluard, Director.
Commercy, Normal School	29.08	738.5	30.02	762.5	41.5	5.3	84	WSW			4		5		WSW	0.244	6.2	Cloudy	Dr. Goulet, Director.
Commune de Gréasque*	28.78	731.1	29.93	760.1	45.9	7.7	72	NW			6		2		NW	0.16	4.	¾ covered	V. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	29.74	755.5	29.93	761.1	46.4	8.0	88	S			6		10			0.010	0.25	Covered	Mouillot, Director.
Le Mans, Normal School	29.65	753.2	29.97	761.2	40.5	4.7	97	SW			4		10			0.047	1.2	Covered	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.13	740.0	30.07	763.8	42.6	5.9	82	E			2		5			0	0	Cloudy	Pin, Director.
Lorient, Naval Observatory	29.82	757.5	29.92	760.0	57.2	14.0	79	W			5		8		W	0.157	4.0	¾ covered	T. Carré, Director.
Mâcon, Normal School	29.37	745.9	30.08	763.9	41.9	5.5	88	Calm			0		10			0	0	Covered	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	28.91	734.4	29.99	761.7	40.5	4.7	91	SSW					8		NE	0	0	Very cloudy	Normal School.
Nismes, Normal School	29.79	756.6	29.99	761.8	52.9	11.6	37	N			6		0			0	0	Clear	Boyer, Director.
Orleans, Normal School	29.55	750.6	29.94	760.4	42.8	6	91	SSW			3		8		W	0.071	1.8	Very cloudy	Bernard, Director.
Paris, Observatory	29.70	754.4	29.95	760.6	45.3	7.4	76	SW			1		10n		SW			Rainy	National Observatory.
Privas	29.10	739.0	30.19	766.8	46.4	8	44	NE			6		1		N	0	0	Clear	Normal School
Rochefort, Naval Obs'y	30.03	762.7	30.06	763.5	50.0	10.0	86	SSW			4		10		SSW	0.12	3.	Covered	Lt. Decante, Director.
Rouen, Normal School	29.76	756.0	29.85	758.2	43.7	6.5	85	SSE			2		10			0.189	4.8	Covered	F. Lucard, Director.
Tarbes, Normal School																			T. Hugues, Director.
Villefranche	29.33	745.0	30.07	763.6	45.5	7.5	77	SE			1		8		NW	0	0	Very cloudy	Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.73	755.2	29.76	755.9	80.6	27										0.79	20.		L'Abbé Marchési.
Marseilles, Observatory			29.90	759.4	49.5	9.7	44	NW			6-8		2			0	0	Partly cl'dy	The Staff.
Mont-Louis	24.82	630.4	30.13	765.4	37.9	3.3	38	NE	9 3	4.17			7		NW	0.047	1.2		Mr. Falguère.
Nice			29.65	753.0	58.6	14.8	67	NE					1		N	0	0	Clear	Dr. A. Niepce.
Paris, Montsouris Obs'y	29.65	753.2	29.93	760.2	44.6	7.0	77	SW			3		10			Inap.	Inap.	Sprinkling	Marié Davy, Director.
Perpignan			30.04	763.1	55.2	12.9	50	NE	33.6	15.00			4		NW	0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.	21.20	538.4			19.4	— 7.0		W			3		10					Snowy	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.48	571.0			23.9	— 4.5		W			3		10			1.169	29.7	Snowy	Gen'l de Nansouty.
Saint Maur, (near Paris)	29.78	756.4	29.95	760.6	45.5	7.5	77	SW			2		10	WNW		0.205	5.2		E. Renou.
Toulouse, Observatory	29.46	748.3	30.19	766.8	50.7	10 4	61	WNW			3		9			0.021	0.54		The Staff.
Tours	29.80	757.0	30.00	762.0	42.4	5.8	83	SW			2		10			0.071	1.8	Rainy	C. Marquet.
Versailles, (near Paris)			29.93	760.3	44.2	6.8	79	WNW			2		10			0	0	Covered	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.39	772 0	30.42	772.6	46.8	8.2	76	E	5.4	2.4			10kn		S	0	0	Covered	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; for Montsouris, the barometer reduced to freezing but not to sea-level. At Mirecourt the cloud direction is apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,868 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg																			
Berlin	29.52	749.8	29.69	754.1	45.0	7.2	81	SW			2		7						Prof. Dr. Hoh.
Breslau	29.26	743.3	29.79	756.7	43.7	6.5	61	W			3		5			0.020	0.51		Prof. Arndt.
Carlsruhe	29.63	750.0	29.97	761.1	41.4	5.2	62	SW			4		6			0	0		Royal University Obs'y.
Cassel	29.24	742.6	29.84	758.0	44.2	6.8	80	W			2		8	SW		0.217	5.5		Albert Senz.
Crefeld	29.65	753.0	29.81	757.1	45.1	7.3	68	SW			5		4k			0	0		Dr. H. Möhl.
Emden	29.72	754.8	29.75	755.7	43.7	6.5	73	W			3		1			0.28	7.		Director Lose.
Frankfort on the Main	29.56	750.9	29.94	760.4	44.2	6.8		SW			2		7			0.094	2.4		Prof. Prestel.
Friedrichshafen	28.56	725.3	30.03	762.7	41.4	5.2	67	WNW			8		8	NW		0.232	5.9		Physical Society.
Hamburg	29.56	750.8	29.63	752.6	42.8	6.0	87	W			4		7kn			0	0		M. Wilhelm.
Kiel	29.53	750.1	29.55	750.5	42.8	6.0	83	W			4		5			0.087	2.2	Showery	Captain F. Hegemann.
Königsberg, (Prussia)	29.58	751.3	29.66	753.4	40.8	4.9	88	SW								0.124	3.15		Prof. G. Karsten.
Köslin			29.56	750.8	41.0	5.0		S			4		4					Cloudy	Prof. E. Luther.
Leipsic, Observatory	29.38	746.3	29.81	757.1	43.9	6.6	70	WSW			5		7	W		0.016	0.4		H. Müller.
Memel, Naval School	29.61	752.2	29.66	753.4	41.2	5.1	92	S			2		10ks			0.016	0.4		Prof. Bruhns.
Neufahrwasser	29.63	752.6	29.65	753.0	41.2	5.1	85	S			3		10						Reinbrecht von Skalweit.
Posen	29.43	747.5	29.73	755.1	41.9	5.5	85	WSW			3–4		4			0.020	0.5		A. Lothes.
Strassburg Obs., (in Alsace	29.45	748.1	30.02	762.5	42.1	5.6	59	SW			3		5					Fair	Dr. Magener.
Stuttgart	28.99	736.4	29.96	760.9	41.0	5.0	57	W			3		7			0.080	2.02		Dr. Schur.
Treves, (Trier)	29.30	744.3	29.82	757.5	41.9	5.5	72	WSW			5		9	W		0	0		Prof. Schoder.
Weissenburg, (Bavaria)	28.39	721.2	29.95	760.6	37.9	3.3	71	W	9	4			9kn		W	0.074	1.87	Foggy	Prof. Flesch.
Wustrow, Naval School	29.58	751.3	29.61	752.1	42.6	5.9	85	WSW			4		10			0	0		Dr. Von Bebber.
German Naval Series.																		Covered	E. F. Schütz.

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet: Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4, Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens

Athens	29.28	743.8	29.68	753.8	59.9	15.5		E										Cloudy	Dr. J. F. J. Schmidt.

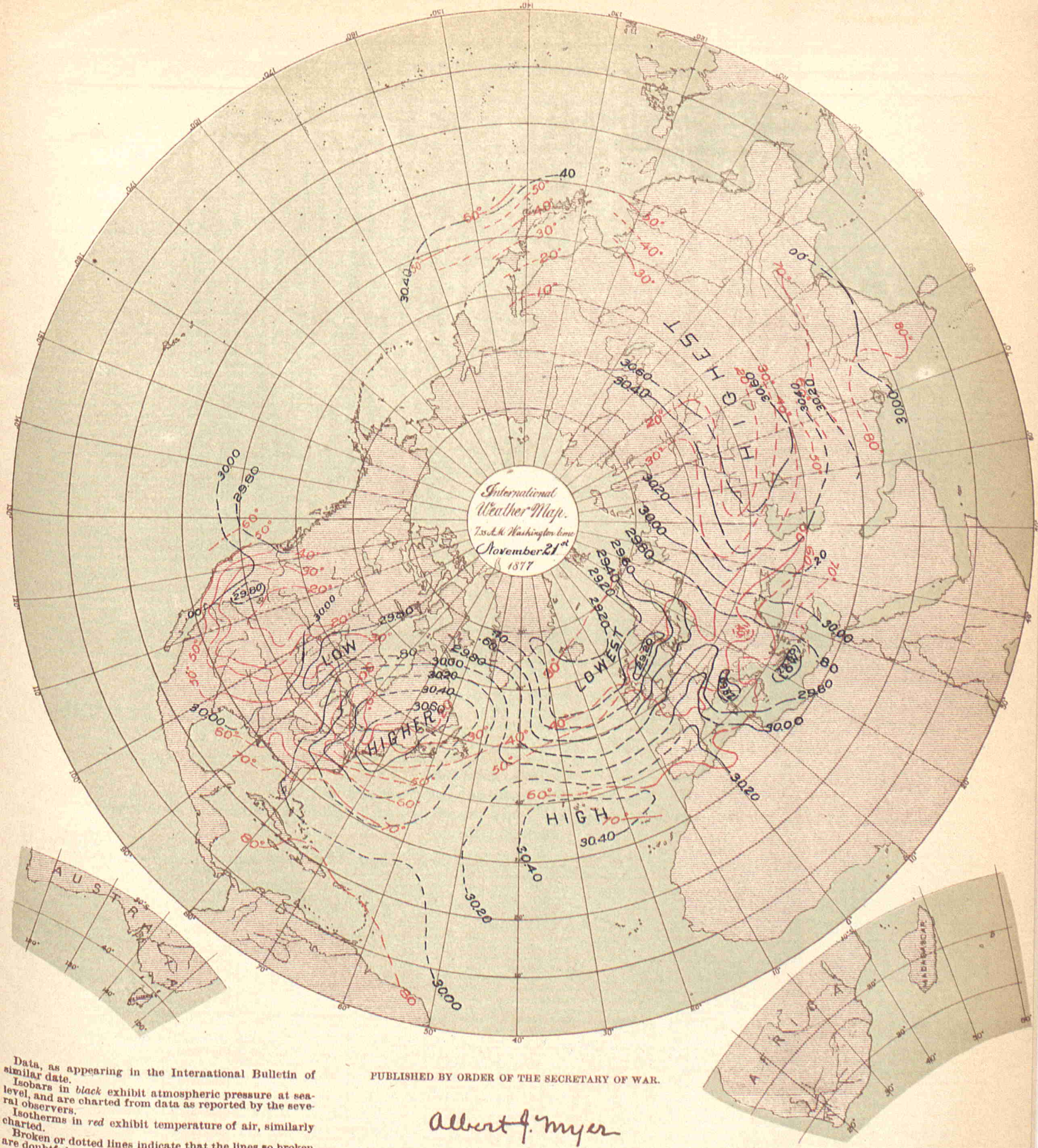
Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and wind-force; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.96	760.9	30.01	762.2	82.9	28.3	63	WSW	11.0?	4.9?		1	WSW			0	0	D. clouds	
Deesa	29.55	750.5	30.02	762.6	85.3	29.6	33	Calm				0				0	0	Blue sky	
Bombay	29.90	759.5	29.94	760.5	84.1	28.9	72	WNW	7.0	3.1		0				0	0	Blue sky	
Poona	27.96	710.2	29.96	760.9	82.0	27.8	49	E				0				0	0	Blue sky	
Lahore	29.29	744.0	30.06	763.4	70.7	21.5	40	W	2.5	1.1		10				0	0	Cloudy	
Belgaum	27.41	696.3	29.94	760.7	79.5	26.4	40	E	5.0	2.2		1				0	0	D. clouds	
Bangalore																			
Roorkee	29.09	738.9	30.01	762.2	73.4	23.0	28	NW	2.1	0.9		2				0	0		
Agra	29.45	747.9	30.02	762.5	76.7	24.8	53	NW								0	0		
Trichinopoly																			
Nagpur	28.96	735.7	30.02	762.4	78.1	25.6	36	E	3.6	1.6		0				0	0	Blue sky	
Madras																			
Lucknow	29.62	752.3	30.00	762.0	73.3	22.9	43	NW	2.9	1.3		0				0	0	Blue sky	
Allahabad	29.68	753.8	30.00	761.9	73.9	23.3	55	Calm	2.4	1.1		0				0	0	Blue sky	
Patna	29.81	757.2	30.00	761.9	77.7	25.4	59	SE	0.9	0.4		2	E	E		0	0		
Hazaribagh	27.97	710.4	30.02	762.5	70.8	21.6	54	NW	4.9	2.2		0				0	0	Blue sky	
Cuttack	29.94	760.4	30.02	762.5	76.0	24.4	64	Calm	0.3	0.1		0				0	0	Blue sky	
Calcutta (Alipore)	29.98	761.6	30.00	762.1	73.2	22.9	76	NW	1.0	0.4		0				0	0	Blue sky	
Goalpara	29.67	753.6	30.07	763.7	75.2	24.0	70	E	0.6	0.3		0				0	0	Blue sky	
Chittagong	29.93	760.2	30.02	762.5	75.8	24.3	69	NE	0.7	0.3		1				0	0	Blue sky	
Sibsagar	29.71	754.6	30.05	763.4	70.6	21.4	87	NNE	0.5	0.2		5		SW		0	0	D. clouds	
Rangoon																			
Jubbulpore	28.65	727.8	30.04	762.9	76.0	24.4	59	NW	1.5	0.7		0				0	0	Blue sky	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,092.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 1—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	21.84	554.7	29.79	756.7	16.5	— 8.6	51	NE	.....	.....	6	.....	0	.....	.....	0.787*	20.0*	.....	Ab. Dom. Morgini.
Stelvio	21.85	554.9	29.82	757.4	13.1	—10.6	.....	ENE	.....	.....	4	.....	8	.....	.....	0.122	3.1	.....	Signora Ernesta Manfredi.
Udine	29.27	743.5	29.68	753.9	49.5	9.7	45	E	1.3	0.6	.....	.....	10	.....	.....	0.441	11.2	.....	Prof. Giovanni Olodig.
Padua	29.58	751.4	29.69	754.2	45.3	7.4	79	ENE	12.5	5.6	.....	.....	10	.....	.....	0.874	22.2	.....	Prof. Dott. Lorenzoni.
Vicenza	29.50	749.3	29.70	754.3	46.6	8.1	65	E	4.9	2.2	.....	.....	10	E	.....	0.425	10.8	.....	Conte Alm. Da Schio.
Verona	29.42	747.3	29.65	753.0	49.6	9.8	86	NW	0	0	.....	.....	10	.....	.....	0	0	.....	Dott. B. Bertoncelli.
Bergamo	28.36	720.3	29.70	754.4	43.9	6.6	82	NNW	.....	.....	1	.....	2	.....	.....	0	0	.....	Prof. Trionfini Carlo.
Domodossola	28.77	730.7	29.82	757.3	50.0	10.0	30	N	.....	.....	6	.....	0	.....	.....	0	0	.....	Prof. Giuseppe Calza.
Milan	29.15	740.5	29.68	753.8	54.0	12.2	.....	N	.....	.....	6	.....	1	WNW	.....	0	0	.....	Ab. Gio. Capelli.
Pavia	29.31	744.5	29.67	753.6	53.6	12.0	19	N	.....	.....	8	.....	0	.....	.....	0	0	.....	Prof. Gio. Cantoni.
Moncalieri	28.79	731.2	29.71	754.6	54.3	12.4	34	NNW	1.8	0.8	.....	.....	0	.....	.....	0	0	.....	Prof. P. F. Denza.
Mondovi	27.79	705.9	29.72	755.0	47.7	8.7	21	NNW	.....	.....	2	.....	0	.....	.....	0	0	.....	Prof. D. C. Bruno.
Porto Maurizio	29.47	748.5	29.69	754.1	57.9	14.4	32	SW	.....	.....	2	.....	1	.....	.....	0	0	.....	Prof. L. Vassallo.
Genoa	29.48	748.9	29.65	753.2	58.8	14.9	13	N	8.7	3.9	.....	.....	1	N	.....	0.020	0.5	.....	Prof. G. M. Garibaldi.
Piacenza	29.43	747.5	29.69	754.1	47.7	8.7	64	SE	8.7	3.9	.....	.....	3	NE	.....	0.154	3.9	.....	Dott. G. Manzi.
Parma	29.45	748.0	29.77	756.2	45.3	7.4	74	SSE	.....	.....	4	.....	9	.....	.....	1.398	35.5	.....	Prof. P. Pigorini.
Florence	29.34	745.2	29.80	757.8	47.8	8.8	62	NE	.....	.....	4	.....	8	N	.....	0.441	11.2	.....	Cav. F. Meucci.
Leghorn	29.48	748.9	29.57	751.1	53.4	11.9	39	N	6.3	2.8	.....	.....	9	N	.....	0.138	3.5	.....	Prof. P. Monte.
Siena	28.86	720.2	29.58	751.2	43.5	6.4	86	N	9.4	4.2	.....	.....	10	NE	.....	0.114	2.9	.....	Prof. L. Toscani.
Urbino	28.05	712.5	29.62	752.4	43.5	6.4	82	N	.....	.....	2	.....	10	.....	.....	0.709	18.0	.....	Prof. P. Serpieri.
Pesaro	29.58	751.2	29.63	752.5	47.5	8.6	85	N	32.2	14.4	.....	.....	10	S	.....	0.315	8.0	.....	Prof. Luigi Guidi.
Ancona	29.61	752.2	29.72	754.9	52.5	11.4	71	NNE	.....	.....	6	.....	10	N	.....	0.181	4.6	.....	Prof. F. DeBosis.
Grosseto	29.43	747.5	29.54	750.4	49.6	9.8	73	NNW	.....	.....	4	.....	6	NW	.....	0.350	8.9	.....	Avv. P. Ponticelli.
Rome	29.39	746.5	29.57	751.0	55.4	13.0	55	SW	4.3	1.9	.....	.....	2	.....	.....	0.008	0.2	.....	Prof. P. A. Secchi.
Naples, O. U	29.42	747.2	29.62	752.3	59.7	15.4	47	NNW	.....	.....	4	.....	6	SW	.....	0.543	13.8	.....	Prof. L. Palmieri.
Lecce	.....	.....	.....	.....	60.6	15.9	85	SW	9.4	4.2	.....	.....	10	.....	.....	0.026	0.7	.....	Prof. C. De Giorgi.
Cosenza	28.78	731.1	29.68	753.9	57.9	14.4	74	SE	3.8	1.7	.....	.....	9	.....	.....	0.854	21.7	.....	Prof. F. D. Conti.
Cagliari	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. A. Pacinotti.
Riposto, (Sicily)	.....	.....	.....	.....	61.5	16.4	75	ENE	.....	.....	2	.....	9	NE	.....	0.220	5.6	.....	Prof. F. Cafiero.
Palermo	29.43	747.6	29.60	754.1	57.7	14.3	52	WNW	13.7	6.1	.....	.....	9	N	.....	0.169	4.3	.....	Prof. G. Cacciatore.
Caltanissetta	27.74	704.6	29.69	754.2	55.6	13.1	73	WNW	.....	.....	6	.....	10	.....	.....	0.024	0.6	.....	Prof. A. Pagani.
Syracuse	29.58	751.4	29.66	753.3	62.2	16.8	64	NW	.....	.....	2	.....	6	W	.....	0.157	4.0	.....	Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.48	748.8	30.04	762.9	56.7	13.7	55	ESE	11.9	5.3	.....	.....	7	.....	.....	0.031	0.8	.....	Prof. F. Brioschi.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,548.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Siena, 348.5 m., or 1,143.3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft *Unmelted snow.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Tokei (Yeddo)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	The Observatory.
Tokei (Yeddo) University	30.30	774.6	30.61	777.5	38	3.3	76	.....	.....	.....	.....	.....	.....	.....	.....	0	0	Clear	Prof. P. V. Veeder.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Señor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Aguascalientes	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	I. N. Marin, M. D.
Córdoba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	C. Peña, M. D.
Cuernavaca	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	L. Castillo, A. E.
Guadalajara	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. L. Perez.
Guanajuato	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. V. Fernandez.
Leon	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. M. Leal.
Mexico	23.18	588.7	30.29	769.5	44.9	7.2	51	Calm	0	0	.....	1c	0	.....	.....	0	0	Blue sky	Central Observatory.
Orizaba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	N. N.
Orizaba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	I. Orozco, M. D.
Pabellon, (Aguascalts)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. V. de Leon, M. E.
Puebla	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. B. Gonzalez.
Toluca	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. C. Velazquez.
Tlacotalpam	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. F. R. Bayly.
San Luis Potosi	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	G. Barroeta, M. D.
Vera-Cruz	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. J. Rossell.
Zacatecas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. A. Bonilla, M. E.
Puebla, (Catholic Institute)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	P. Spina. [M. M. D. D.
Morelia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Tena, F. L. Páramo.

Note.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,230 m., or 7,312.9 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,921.4 m., or 6,303.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosi, 1,893 m. or 6,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

Furnished by the cooperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	29.81	757.1	29.81	757.1	47.5	8.6	.....	SW	.....	.....	4	.....	.....	.....	.....	0.087	2.3	.....	
Groningen	29.65	753.0	29.70	754.4	44.4	6.9	.....	WNW	.....	.....	4	.....	.....	.....	.....	0.169	4.3	.....	
Helder	29.71	754.5	29.71	754.5	46.2	7.9	.....	WSW	.....	.....	4	.....	.....	.....	.....	0.413	10.5	.....	
Hellevoetsluis	.....	.....	29.77	756.1	46.8	8.2	82	SW	.....	.....	5	.....	.....	.....	.....	.....	.....	.....	
Utrecht	29.73	755.2	29.78	756.4	45.5	7.5	76	SW	.....	.....	4	.....	5	.....	.....	0.276	7.0	Cloudy	H. v d Brink.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	29.24	742.8	29.30	744.2	37.8	3.2	97	SE	8.3	3.7	.....	.....	5	.....	.....	0.322	8.2	Raining	
Brönø	29.14	740.2	29.18	741.2	39.2	4.0	67	S	9	4	.....	.....	9	.....	.....	0	0	.....	
Christiania	29.07	738.4	29.22	742.2	37.2	2.9	94	S	0	0	.....	.....	10	.....	.....	0.693	17.6	Raining	
Tromsö	29.35	745.6	29.40	746.7	31.6	— 0.2	74	Calm	0	0	.....	.....	5	.....	.....	0	0	.....	

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	30.21	767.2	30.40	772.1	60.4	15.8	87	NE	2.5	1.1	.....	.....	4	.....	.....	0	0	.....	Dr. J. A. Sampaio
Campo Major	29.23	742.4	30.26	768.5	59.9	15.5	61	WSW	3.8	1.7	.....	.....	2	.....	.....	0	0	.....	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.17	766.3	30.26	768.5	71.2	21.8	49	E	11.2	5.0	.....	.....	1	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.93	760.1	30.28	769.2	68.8	14.9	61	NNE	16.1	7.2	.....	.....	2	NW	.....	0	0	.....	The Staff.
Ponta Delgada, (Azores)	30.35	770.9	30.42	772.7	67.3	19.6	58	SSE	.....	.....	.....	.....	6	.....	.....	0	0	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

Naval Series. Vessels.	Sea or swell. Height scale 0–9	Sea or swell. Direction from—		
S. S. India.				A. D. Pedroso, Com'd't. Lt. S. A. P. de Mirando
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the cooperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.33	744.9	29.75	755.7	38.8	3.8	95	SSW	2	1	.....	.....	10	.....	.....	.....	.....	Raining	Astronomical Obs.
Wilna	29.35	745.5	29.78	756.4	39.2	4.0	88	S	4	2	.....	.....	10	.....	.....	.....	.....	Heavy clouds	Astronomical Obs.
Dorpat	29.45	747.9	29.69	754.2	37.0	2.8	91	S	7	3	.....	.....	10	.....	.....	.....	.....	.....	Prof. Dr. Weihrauch.
St. Petersburg	29.73	755.1	29.74	755.5	37.0	2.8	93	SSE	13	6	.....	.....	10	.....	.....	.....	.....	Rain and fog	Central Physical Obs.
Kuopio	29.34	745.2	29.67	753.6	36.5	2.5	91	S	13	6	.....	.....	10	.....	.....	.....	.....	.....	Ch. Forsten.
Kieff	29.22	742.1	29.86	758.4	44.4	6.9	86	SSE	9	4	.....	.....	10	.....	.....	.....	.....	.....	Physical Cabinet.
Nikolaiev	29.51	759.6	29.98	761.4	50.7	10.4	82	SE	0	0	.....	.....	10	.....	.....	.....	.....	.....	Kurdakof.
Kertch	30.03	762.7	30.05	763.2	51.8	11.0	81	E	4	2	.....	.....	10	.....	.....	.....	.....	.....	Lagorio.
Moscow	29.53	750.1	30.11	764.7	31.3	— 0.4	85	S	7	3	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Lugan	29.98	761.5	30.19	766.8	46.2	7.9	58	SE	13	6	.....	.....	2	.....	.....	.....	.....	.....	Meteorological Obs.
Archangel	29.89	759.3	29.91	759.8	34.2	1.2	96	SSW	9	4	.....	.....	10	.....	.....	.....	.....	.....	Ogorodnikof.
Tiflis	28.94	735.1	30.40	772.2	46.4	8.0	57	E	4	2	.....	.....	0	.....	.....	.....	.....	.....	Physical Observatory.
Astrakhan	30.67	779.5	30.49	774.4	37.0	2.8	79	ESE	13	6	.....	.....	10	.....	.....	.....	.....	.....	Sebastianof.
Kasan	30.11	764.8	30.39	772.0	29.1	— 1.6	86	Calm	0	0	.....	.....	10	.....	.....	.....	.....	.....	Physical Cabinet.
Orenburg	30.17	766.4	30.59	776.9	17.1	— 8.3	65	NE	13	6	.....	.....	0	.....	.....	.....	.....	.....	Tschernischef.
Ekaterinburg	29.29	744.0	30.29	769.4	27.9	— 2.3	79	WSW	13	6	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Nukuss	30.31	769.8	30.56	776.1	35.8	2.1	64	NNE	7	3	.....	.....	0	.....	.....	.....	.....	.....	
Kasaly	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Bobrof.
Tashkend	28.84	732.6	30.67	778.9	32.0	0.0	96	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Michelson.
Barnaul	30.05	763.3	30.61	777.6	24.6	— 4.1	87	SW	4	2	.....	.....	0	.....	.....	.....	.....	.....	Meteorological Obs.
Yeniseisk	30.04	763.1	30.39	772.0	12.4	—10.9	85	W	13	6	.....	.....	5	.....	.....	.....	.....	.....	Marks.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Usolzef.
Oorga	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Mossin.
Peking, (China)	30.43	772.8	30.57	776.4	30.4	— 0.9	73	Calm	0	0	.....	.....	3	.....	.....	.....	.....	Lunar halo	Physical Observatory.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nikolaievsk, on the Amoor	.....	.....	.....	.....	7.3	—13.7	59	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Ekaterinburg, 306.4? m., or 1,005.2? ft.; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft. ☞ At Ekaterinburg the latest levellings show that the altitude of the barometer has always been 267 m., or 875.9 ft., instead of 306.4? m., or 1,005.2? ft.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Rave, Director.
Bilbao, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Manuel de Naveran
Burgos, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Domingo Martin y Perez.
Madrid, Royal Observatory	27.97	710.4	30.24	768.0	52.0	11.1	60	S	2.2	1.00	.....	1	0	NW	.....	0	0	Almost clear	The Staff.
Murcia, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Olayo Diaz, Director.
Santiago, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.94	760.4	30.00	762.1	73.1	22.8	86	Calm	0	0	.....	10pc	1k	.....	.....	0	0	Cloudy	Benito Vines, S. J.
San Fernando, Naval Obs'y.	30.13	765.3	30.23	767.9	64.0	17.8	54	N	9.8	4.4	.....	2	2	N	N	0	0	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.	.....	.....	29.84	757.9	78.4	25.8	91	SE	0	0	.....	3s	1k	.....	.....	0	0	Clear	Leonardo de Tejeda, Chief of Engineers.

NOTE.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the cöoperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Low'r 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	28.61	752.0	29.65	753.0	34.9	1.6	.....	SE	.....	.....	2	.....	10	.....	.....	.....	.....	Raining	
Umea	29.42	747.2	29.47	748.5	35.2	1.8	100	S	.....	.....	2	.....	10	.....	.....	0.150	3.8	Raining	
Hernosand	29.31	744.4	29.36	745.7	37.0	2.8	93	SE	.....	.....	6	.....	10	.....	.....	0.173	4.4	.....	
Stockholm	29.24	742.7	29.42	747.2	39.0	3.9	88	SSW	.....	.....	2	.....	1	.....	.....	0.181	4.6	.....	
Wisby	29.46	748.2	29.51	749.7	43.2	6.2	82	SW	.....	.....	4	.....	5	.....	.....	0.087	2.2	.....	
Sub-Series.																			
Upsala	29.31	744.4	29.38	746.3	39.6	4.2	93	S	10.3	4.6	.....	.....	8	.....	SW	0.013	0.32	.....	Dr. Hildebrandsson.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.61	726.8	30.08	763.9	42.3	5.7	57	NNW	.....	.....	1	.....	6	.....	.....	0.437	11.1	Cloudy	The Observatory.
Zurich	28.38	720.9	30.07	763.7	40.5	4.7	57	W	.....	.....	2	.....	3	.....	.....	0	0	Bright	The Observatory.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—For Geneva the corresponding departures from the normal values are: Barometer, +0.4 mm; Thermometer, 0.0 cent.; Relative Humidity, —21 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	29.83	757.6	61.0	16.1	51	SE	17	7.5	.....	.....	10	.....	SW	0	0	.....	The Observatory.
Fao, (Persian Gulf)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Salonica	.....	.....	29.73	755.2	57.4	14.1	.....	NE	.....	.....	1	.....	10	.....	.....	Blank	Blank	.....	B. Stefanides.
Valona	.....	.....	29.71	754.7	65.8	18.8	.....	SW	.....	.....	1	.....	10	.....	.....	1.06	27.	Covered	A. Bertrand.
Varna	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Imperial Observatory.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.93	760.2	30.05	763.2	71.1	21.7	38	NE	.....	.....	3	.....	10cs	.....	.....	0	0	Overcast	Prof. C. V. A. Van Dyck

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	30.54	775.7	30.61	777.5	23.6	— 4.7	94	Calm	0	0	.....	0	.....	.....	.....	.....	.....	.....	Hon. J. Ferguson.
Brockville, Ontario	.....	.....	30.60	777.2	18	— 7.8	.....	NE	1	0.4	.....	2c	0	SW	.....	0	0	Fair	W. R. Bigg.
*Chatham, N. B	.....	.....	30.61	777.5	20	— 6.7	92	NW	6	2.7	.....	5k	2ks	NW	NW	0	0	Fair	G. A. Blair.
Charlottetown, P. E. Island.	.....	.....	30.55	776.0	31	— 0.6	73	N	10	4.5	.....	.....	10s	.....	Calm	0.085	2.16	Cloudy	H. J. Cundall, C. E.
Cornwall, Ontario	30.37	771.4	30.58	776.7	17.7	— 7.9	100	NW	.....	.....	1	1c	0	.....	.....	0	0	Clear	James Smith, M. A.
Dalhousie, N. B	30.61	777.5	30.64	778.2	22	— 5.6	96	W	.....	.....	1	.....	.....	.....	.....	0	0	Bright	H. A. Johnson.
Esquimault, B. C	29.65	753.1	29.70	754.4	44.8	7.1	63	NE	.....	.....	.....	.....	10	.....	.....	0.13	3.3	Cloudy	W. H. Bevis.
*Father Point, Quebec	.....	.....	30.66	778.7	23	— 5.0	86	SW	3	1.3	.....	.....	10s	.....	W	0	0	Cloudy	J. McWilliams.
Fredericton, N. B	30.60	777 2	30.67	779.0	21.7	— 5.7	90	NW	2.0	0.9	.....	0	0	.....	.....	0	0	Clear	Prof. Harrison.
*Fort Garry, Manitoba	.....	.....	29.71	754.6	31	— 0.6	95	NW	17	7.6	.....	.....	10n	.....	N	0.02	0.5	Light snow	James Stewart.
Goderich, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	H. J. Strang, M. A
Granton, Ontario	29.17	740.9	30.34	770.6	29.2	— 1.6	98	E	.....	.....	2	.....	10n	.....	.....	0	0	Cloudy	James Grant.
*Halifax, N. S	30.36	771.1	30.51	774.9	33	0.6	82	NE	12	5.4	.....	.....	10ks	.....	N	0.001	0.03	Cloudy	F. Allison, M. A.
Hamilton, Ontario	30.19	766.8	30.59	777.0	29.7	— 1.3	77	NE	.....	.....	1	0	.....	.....	.....	0.12	3.0	Clear	Geo. Dickson, M. A
Heart's Content, N. F	30.27	768.8	30.30	769.6	35	1.7	80	NE	.....	.....	2	.....	10	.....	.....	0	0	Overcast	E. Weedon.
*Kingston, Ontario	30.19	766.8	30.56	776.2	21	— 6.1	86	NE	3	1.3	.....	5c	0	Calm	.....	0	0	Fair	S. Woods, M. A.
Little Glace Bay, N. S	30.41	772.4	30.45	773.4	33.0	0.6	93	N	10	4.5	.....	7c	.....	N	.....	Inap.	Inap.	Snow squall	C. H. Rigby.
*Montreal, Quebec	30.43	772.9	30.65	778.5	21	— 6.1	79	E	4	1.8	.....	0	0	.....	.....	0	0	Clear	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.70	754.4	30.44	773.2	24	— 4.4	87	E	12	5.4	.....	0	0	.....	.....	0	0	Clear	Rev. R. Mosley.
Peterboro, Ontario	29.73	755.1	30.54	775.7	21.4	— 5.9	40	NE	.....	.....	1	2ck	0	.....	.....	0	0	Bright	J. F. Jeffers, B. A.
Port Dover, Ontario	29.74	755.4	30.48	774.2	27	— 2.8	88	N	6	2.7	.....	10ck	0	NW	.....	0	0	Fair	H. Morgan.
Port Hastings, N. S	30.53	775.4	30.58	776.7	34.6	1.4	.....	N	4	1.8	.....	.....	.....	.....	.....	0	0	Fine	Peter Grant.
Port Stanley, Ontario	29.64	752.8	30.32	770.1	31	— 0.6	79	E	12	5.4	.....	5ck	0	S	.....	0	0	Fair	M. Payne.
*Quebec, Quebec	30.33	770.4	30.68	779.3	21	— 6.1	64	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	Capt. Ashe, R. N
*Rockliffe, Ontario	30.08	764.0	30.57	776.5	20	— 6.7	92	E	8	3.6	.....	.....	8s	.....	SE	0	0	Fair	W. H. McIntyre.
St. John, N. B	30.46	773.4	30.62	777.7	26	— 3.3	87	N	4	1.8	.....	5k	0	.....	.....	0	0	Fair	G. Murdock, C. E.
*Saugeen, Ontario	29.56	750.8	30.30	769.6	31	— 0.6	90	SE	23	10.3	.....	2cs	0	.....	.....	0	0	Clear	K. Stewart.
Stayner, Ontario	.....	.....	30.43	772.9	25	— 3.9	95	SE	8	3.6	.....	0	0	.....	.....	0	0	Clear	R. J. Cole.
Stratford, Ontario	29.00	736.6	30.35	770.9	28.0	— 2.2	88	SE	10.0	4.5	.....	.....	2s	.....	.....	0	0	Fine	C. J. MacGregor, M. A.
*Sydney, C. B	30.43	772.9	30.46	773.7	34	1.1	78	N	8	3.6	.....	10n	.....	.....	N	Inap.	Inap.	Cloudy	T. C. Hill.
*Toronto, Ontario	30.02	762.5	30.17	766.3	42	5.6	90	SE	8	3.6	.....	10n	.....	.....	SE	0.21	5.3	Cloudy	Magnetic Observatory.
Windsor, N. S	30.40	772.1	30.50	774.7	32.0	0.0	80	N	16	7.2	.....	10k	.....	.....	.....	0	0	Fair	Prof. John E. Oram.
Woodstock, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Montgomery.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	35.0	1.7	90	NE	.....	.....	.....	10ks	10sn	.....	.....	0.02	0.5	Cloudy	John Delany.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	30.42	772.7	30.67	779.0	19	— 7.2	69	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Alpena, Michigan	29.56	750.8	30.23	767.8	40	4.4	73	SE	10	4.5	.....	.....	10s	.....	SE	0	0	Cloudy	
Atlantic City, New Jersey	30.54	775.7	30.56	776.2	42	5.6	67	NE	20	8.9	.....	0	8ks	.....	N	0	0	Cloudy	
Augusta, Georgia	29.97	761.2	30.15	765.8	52	11.1	93	NE	10	4.5	.....	.....	10ks;s	.....	SE;E	0.10	2.5	Threatening	
Baltimore, Maryland	30.52	775.2	30.57	776.5	33	0.6	61	NE	5	2.2	.....	2k	5s	NE	NE	0	0	Fair	
Barnegat, New Jersey	30.55	776.0	30.58	776.7	38	3.3	63	NE	16	7.2	.....	8k	0	NE	.....	0	0	Fair	
Bismarck, Dakota	28.15	715.0	29.87	758.7	32	0.0	79	W	14	6.3	.....	0	5s	.....	NW	0.06	1.5	Clearing	
Boise City, Idaho	27.14	689.3	29.85	758.2	28	— 2.2	77	NE	1	0.4	.....	.....	10s	.....	.....	0	0	Cloudy	
Boston, Massachusetts	30.48	774.2	30.65	778.5	26	— 3.3	75	NW	9	4.0	.....	0	7s	.....	NE	0	0	Fair	
Brackettville, Texas	28.95	735.3	29.99	761.7	50	10.0	50	E	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Breckenridge, Minnesota	28.82	732.0	29.83	757.7	35	1.7	90	W	17	7.6	.....	.....	10s	.....	Calm	0.06	1.5	Cloudy	
Brownsville, Texas	30.04	763.0	30.11	764.8	55	12.8	80	NW	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Buffalo, New York	29.63	752.6	30.37	771.4	32	0.0	79	NE	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Burlington, Vermont	30.37	771.4	30.65	778.5	25	— 3.9	88	Calm	0	0	.....	0	5s	.....	Calm	0	0	Fair	
Cairo, Illinois	29.46	748.3	29.85	758.2	56	13.3	87	E	3	1.3	.....	.....	10n	.....	S	0.81	20.6	Light rain	
Camp Grant, Arizona	25.22	640.6	30.02	762.5	50	10.0	8	E	.....	.....	1	2c	0	Calm	.....	0	0	Fair	
Camp Verde, Arizona	26.81	681.0	30.30	769.6	29	— 1.7	56	NW	.....	.....	.....	10c	0	Calm	.....	0	0	Cloudy	
Campo, California	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Cape Hatteras, N. Carolina	30.28	769.1	30.29	769.4	59	15.0	76	NE	17	7.6	.....	.....	10s	.....	E	0	0	Cloudy	
Cape Henry, Virginia	30.44	773.2	30.47	773.9	52	11.1	73	NE	30	13.4	.....	.....	10s	.....	E	0	0	Cloudy	
Cape Lookout, N. Carolina	30.29	769.4	30.31	769.9	60	15.6	82	NE	32	14.3	.....	.....	10n	.....	E	0.10	2.5	Light rain	
Cape May, New Jersey	30.51	774.9	30.54	775.7	30	— 1.1	78	N	8	3.6	.....	8c	0	W	.....	0	0	Fair	
Charleston, South Carolina	30.09	764.3	30.16	766.1	65	18.3	83	E	16	7.2	.....	.....	10s	.....	E	Inap.	Inap.	Cloudy	
Cheyenne, Wyoming	24.06	611.1	30.00	762.0	21	— 6.1	85	SW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Chicago, Illinois	29.23	742.4	29.92	760.0	47	8.3	92	SE	8	3.6	.....	.....	10n	.....	Calm	0.03	0.8	Light rain	
Cincinnati, Ohio	29.35	745.5	29.99	761.7	54	12.2	49	SE	9	4.0	.....	.....	10s	.....	SE	0	0	Cloudy	
Cleveland, Ohio	29.49	749.0	30.24	768.1	39	3.9	56	ESE	20	8.9	.....	.....	10s	.....	SE	0	0	Cloudy	
Concho, Texas	28.30	718.8	30.05	763.3	42	5.6	91	NE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Corsicana, Texas	29.60	751.8	30.07	763.8	50	10.0	86	NW	7	3.1	.....	0	0	.....	.....	0.03	0.8	Clear	
Davenport, Iowa	29.22	742.2	29.85	758.2	48	8.9	92	SE	9	4.0	.....	.....	10n	.....	Calm	0.45	11.4	Light rain	
Denison, Texas	29.27	743.4	30.08	764.0	47	8.3	85	N	12	5.4	.....	0	0	.....	.....	0.08	2.0	Clear	
Denver, Colorado	24.36	618.7	30.08	764.0	23	— 5.0	73	SE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Detroit, Michigan	29.47	748.5	30.16	766.1	40	4.4	82	E	10	4.5	.....	.....	10s	.....	Calm	0	0	Cloudy	
Dodge City, Kansas	27.57	700.3	29.99	761.7	28	— 2.2	82	NW	18	8.0	.....	0	1s	.....	NW	0	0	Clear	
Dubuque, Iowa	29.16	740.7	29.85	758.2	46	7.8	92	SE	3	1.3	.....	.....	10n	.....	Calm	0.57	14.5	Light rain	
Duluth, Minnesota	29.09	738.9	29.77	756.1	41	5.0	91	E	6	2.7	.....	.....	10n	.....	E	0.26	6.6	Light rain	
Eagle Pass, Texas	29.33	745.0	30.09	764.3	44	6.7	84	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Eastport, Maine	30.54	775.7	30.61	777.5	27	— 2.8	67	N	18	8.0	.....	0	5s	.....	NE	0	0	Fair	
Erie, Pennsylvania	29.51	749.5	30.25	768.3	38	3.3	54	S	24	10.7	.....	5cs	.....	.....	.....	0	0	Fair	
Escanaba, Michigan	29.39	746 5	30.05	763.3	40	4.4	82	SE	9	4.0	.....	.....	10s	.....	SE	0	0	Cloudy	
Florence, Arizona	28.92	734.6	30.02	762.5	45	7.2	24	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Fort Bayard, New Mexico	24.09	611.9	30.09	764.3	34	1.1	51	NE	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Fort Craig, New Mexico	25.65	651.5	.....	.....	26	— 3.3	75	W	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Fort Gibson, Indian Ter	29.48	748.8	30.03	762.7	47	8.3	85	N	11	4.9	.....	.....	10s	.....	N	0.21	5.3	Cloudy	
Fort Griffin, Texas	28.93	734.8	30.24	768.1	43	6.1	75	Calm	0	0	.....	0	0	.....	.....	0.06	1.5	Clear	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	28.92	734.6	30.06	763.5	42	5.6	74	NW	.....	.....	5	0	0	.....	.....	0	0	Clear	
Galveston, Texas	30.02	762.5	30.06	763.5	55	12.8	87	NW	14	6.3	.....	0	1ks	.....	N	0	0	Clear	
Grand Haven, Michigan	29.35	745.5	30.01	762.2	41	5.0	82	SE	18	8.0	.....	.....	10s	.....	SE	0	0	Threatening	
Indianapolis, Indiana	29.19	741.4	29.96	761.0	52	11.1	66	Calm	0	0	.....	.....	10s	.....	S	0.06	1.5	Cloudy	
Indianola, Texas	30.09	764.3	30.11	764.8	57	13.9	81	N	9	4.0	.....	0	0	.....	.....	0	0	Clear	
Jacksboro, Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Jacksonville, Florida	30.09	762.0	30.02	762.5	68	20.0	90	SE	11	4.9	.....	.....	10n	.....	SE	1.06	26.9	Light rain	
Keokuk, Iowa	29.22	742.2	29.83	757.7	48	8.9	93	NW	7	3.1	.....	.....	10n	.....	Calm	0.38	9.7	Light rain	
Key West, Florida	29.89	759.2	29.93	760.2	78.0	22.8	88	SE	18	8.0	.....	.....	10s	.....	SE	0.43	10.9	Threatening	
Kittyhawk, North Carolina	30.37	771.4	30.40	772.1	54	12.2	79	NE	26	11.6	.....	2cs	8s	NE	NE	0	0	Cloudy	
Knoxville, Tennessee	29.01	736.8	30.03	762.7	47	8.3	77	NE	16	7.2	.....	.....	10ks	.....	SE	0.20	5.1	Cloudy	
La Crosse, Wisconsin	29.06	738.1	29.78	756.4	48	8.9	100	S	8	3.6	.....	.....	10n	.....	S	0.33	8.4	Light rain	
La Mesilla, New Mexico	26.19	665.2	30.54	770.6	28	— 2.2	65	W	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Laredo, Texas	.....	.....	.....	.....	47	8.3	85	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Leavenworth, Kansas	29.15	740.4	30.01	762.2	40	4.4	91	N	14	6.3	.....	2k	0	N	.....	0.24	6.1	Clear	
Los Angeles, California	29.67	753.6	30.01	762.2	52	11.1	73	N	4	1.8	.....	.....	10s	.....	N	0	0	Cloudy	
Louisville, Kentucky	29.38	746.2	29.94	760.5	53	11.7	93	NE	3	1.3	.....	.....	10n	.....	NE	0.53	13.5	Heavy rain	
Lynchburg, Virginia	29.76	755.9	30.48	774.2	41	5.0	57	NE	4	1.8	.....	.....	10s	.....	E	0	0	Cloudy	
Maricopa Wells, Arizona	.....	.....	.....	.....	31	— 0.6	38	W	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Marquette, Michigan	29.29	744.0	30.00	762.0	40	4.4	73	SE	12	5.4	.....	.....	10s	.....	Calm	0	0	Cloudy	
Mason, Texas	28.50	723.9	30.30	769.6	47	8.3	85	NW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Memphis, Tennessee	29.56	750.8	29.87	758.7	54	12.2	93	SW	4	1.8	.....	.....	10s	.....	SW	0.29	7.4	Cloudy	
Milwaukee, Wisconsin	29.26	743.2	29.95	760.7	45	7.2	100	SE	15	6.7	.....	.....	10n	.....	.....	0.23	5.8	Light rain	
Mobile, Alabama	29.89	759.2	29.94	760.5	58	14.4	96	W	6	2.7	.....	0	0	.....	.....	2.50	63.5	Clear	
Montgomery, Alabama	29.68	753.9	29.91	759.7	61.5	16.4	94	SE	3	1.3	.....	.....	10ks	.....	N	1.55	39.4	Clearing	
Morgantown, West Virginia	29.21	741.9	30.30	769.6	43	6.1	43	E	15	6.7	.....	.....	10s	.....	SW	0	0	Cloudy	
Mt. Washington, N. H.	24.05	610.9	30.41	772.4	15	— 9.4	47	NE	15	6.7	.....	0	8s	.....	NE	0	0	Fair	
Nashville, Tennessee	29.40	746.7	29.93	760.2	54	12.2	93	S	2	0.9	.....	.....	10n	.....	S	1.31	33.3	Light rain	
New Haven, Connecticut	30.52	775.2	30.65	778.5	26	— 3.3	82	NE	14	6.3	.....	.....	10s	.....	E	0	0	Cloudy	
New London, Connecticut	30.57	776.5	30.62	777.7	31	— 0.6	79	NE	7	3.1	.....	0	10s	.....	NE	0	0	Cloudy	
New Orleans, Louisiana	29.91	759.7	29.97	761.2	56	13.3	87	W	4	1.8	.....	0	0	.....	.....	0.12	3.0	Clear	
Newport, Rhode Island	30.58	776.7	30.63	778.0	35	1.7	70	N	8	3.6	.....	.....	10ks	.....	NE	0	0	Threatening	
New York, New York	30.44	773.2	30.64	778.2	30	— 1.1	68	N	6	2.7	.....	0	Fog	.....	.....	0	0	Clear	
Norfolk, Virginia	30.39	771.9	30.45	773.4	47	8.3	92	E	10	4.5	.....	.....	10s	.....	E	0	0	Cloudy	
North Platte, Nebraska	27.21	691.1	29.95	760.7	21	— 6.1	85	NW	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Olympia, Washington Ter.	29.73	755.1	29.76	755.9	38	3.3	95	S	1	0.4	.....	.....	10n	.....	Calm	0.18	4.6	Heavy rain	
Omaha, Nebraska	28.99	736.6	30.06	763.5	40	4.4	83	N	15	6.7	.....	.....	10s	.....	N	0.16	4.1	Cloudy	
Oswego, New York	30.21	767.5	30.55	776.0	33	0.6	69	SE	11	4.9	.....	1cs	0	Calm	.....	0	0	Clear	
Pembina, Dakota	28.94	735.1	29.78	756.4	30	— 1.1	100	NW	18	8.0	.....	.....	10n	.....	NW	0.01	0.3	Light snow	
Philadelphia, Pennsylvania	30.55	776.0	30.60	777.2	29	— 1.7	78	NE	19	8.5	.....	0	Sm'e	.....	Calm	0	0	Clear	
Phœnix, Arizona	.....	.....	.....	.....	36	2.2	45	Calm	.....	.....	.....	5cs	0	W	.....	0	0	Fair	
Pike's Peak, Colorado	17.68	449.1	29.88	758.9	2	—16.7	72	W	44	19.7	.....	0	0	.....	.....	0	0	Clear	
Pioche, Nevada	24.01	609.8	29.78	756.4	27	— 2.8	53	S	1	0.4	.....	10c	0	Calm	.....	0	0	Cloudy	
Pittsburg, Pennsylvania	29.46	748.3	30.31	769.9	38	3.3	71	E	6	2.7	.....	10c	Sm'e	Calm	E	0	0	Cloudy	
Port Huron, Michigan	29.51	749.5	30.20	767.1	35	1.7	70	E	8	3.6	.....	.....	10s	.....	Calm	0	0	Cloudy	
Portland, Maine	30.60	777.2	30.66	778.7	31	— 0.6	79	N	4	1.8	.....	1k	Haze	N	.....	0	0	Clear	
Portland, Oregon	29.84	757.9	29.94	760.5	42	5.6	91	Calm	0	0	.....	.....	10n	.....	Calm	0.24	6.1	Light rain	
Prescott, Arizona	24.78	629.4	30.14	765.5	30	—1.1	47	NW	.....	.....	.....	2cs	0	Calm	.....	0	0	Fair	
Punta Rassa, Florida	29.98	761.5	30.00	762.0	70	21.1	85	E	8	3.6	.....	0	2ks	.....	S	0	0	Clear	
Red Bluff, California	29.64	752.8	30.01	762.2	46	7.8	84	E	5	2.2	.....	.....	10s	.....	Calm	0	0	Cloudy	
Rochester, New York	29.82	757.4	30.48	774.2	25	— 3.9	75	SE	8	3.6	.....	.....	0	.....	.....	0	0	Clear	
Roseburg, Oregon	29.36	745.7	29.93	760.2	46.5	8.1	66	S	4	1.8	.....	8k	0	SW	.....	0.06	1.5	Cloudy	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	BAROMETER. Corrected for instrum'tal error and temperature. Inches.	BAROMETER. Corrected for instrum'tal error and temperature. Millimeters.	BAROMETER. Reduced to sea-level. Inches.	BAROMETER. Reduced to sea-level. Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Upper. From—	CLOUDS. Direction. Lower. From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	WEATHER.	OBSERVER.
Sacramento, California	29.94	760.5	30.02	762.5	45	7.2	84	S	4	1.8	.....	10k	0	W	.....	0	0	Cloudy	
St. Louis, Missouri	29.28	743.7	29.84	757.9	54	12.2	87	SE	6	2.7	.....	.....	10n	.....	Calm	0.42	10.7	Light rain	
St. Marks, Florida	29.92	760.0	29.94	760.5	66	18.9	94	SE	14	6.3	.....	.....	10s	.....	SE	0.50	12.7	Cloudy	
St. Paul, Minnesota	28.91	734.3	29.74	755.4	38	3.3	90	SE	1	0.4	.....	.....	10n	.....	SW	0.32	8.1	Heavy rain	
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salt Lake City, Utah	25.68	652.3	30.01	762.2	29	—1.7	56	E	4	1.8	.....	0	0	.....	.....	0	0	Clear	
San Antonio, Texas	29.42	747.3	30.02	762.5	51	10.6	86	NW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
San Diego, California	29.96	761.0	30.03	762.7	56	13.3	80	E	8	3.6	.....	.....	10s	.....	SE	0	0	Cloudy	
Sandusky, Ohio	29.48	748.8	30.17	766.3	43	6.1	67	SE	12	5.4	.....	.....	10s	.....	Calm	0	0	Cloudy	
Sandy Hook, New Jersey	30.60	777.2	30.62	777.7	33	0.6	69	NE	15	6.7	.....	8k	Sm'e	NE	.....	0	0	Cloudy	
San Francisco, California	29.98	761.5	30.05	766.3	51	10.6	78	W	8	3.6	.....	5k	2s	W	W	0	0	Fair	
Santa Fé, New Mexico	23.35	593.1	29.89	759.2	22	—5.6	85	SW	3	1.3	.....	5cs	0	Calm	.....	0	0	Fair	
Savannah, Georgia	30.01	762.2	30.10	764.5	65	18.3	89	SE	8	3.6	.....	.....	10n	.....	SE	0.16	4.1	Light rain	
Shreveport, Louisiana	29.77	756.1	29.99	761.7	55	12.8	87	W	4	1.8	.....	.....	10s	.....	W	0	0	Cloudy	
Smithville, North Carolina	30.22	767.6	30.26	768.6	60	15.6	94	NE	15	6.7	.....	5cs	8s	SW	NE	0.03	0.8	Cloudy	
Springfield, Massachusetts	30.43	772.9	30.57	776.5	27	—2.8	66	N	3	1.3	.....	.....	10s	.....	N	0	0	Cloudy	
Stanwix, Arizona	.....	.....	.....	.....	33	0.6	51	Calm	.....	.....	.....	2c	0	W	.....	0	0	Fair	
Stockton, Texas	27.17	690.1	30.17	766.3	43	6.1	82	Calm	0	0	.....	.....	10s	.....	Calm	0	0	Clouds	
Thatcher's Island, Mass	30.58	776.7	30.64	778.2	33	0.6	79	NE	16	7.2	.....	10k	0	NE	.....	0	0	Cloudy	
Toledo, Ohio	29.44	747.8	30.13	765.3	45	7.2	60	E	6	2.7	.....	.....	10s	.....	E	0	0	Cloudy	
Tucson, Arizona	27.62	701.5	30.16	766.1	39	3.9	30	S	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Tybee Island, Georgia	30.05	763.3	30.08	764.0	63	18.9	90	SE	18	8.0	.....	.....	10s	.....	Calm	0.05	1.3	Threatening	
Umatilla, Oregon	29.59	751.6	.....	.....	36	2.2	80	SW	4	1.8	.....	10cs	0	S	.....	0	0	Cloudy	
Vicksburg, Mississippi	29.70	754.4	29.96	761.0	56	13.3	87	SW	3	1.3	.....	.....	10s	.....	SW	0.10	2.5	Cloudy	
Virginia City, Montana	24.21	614.9	29.69	754.1	13	—10.6	80	SE	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Visalia, California	29.66	753.4	30.04	763.0	40	4.4	91	Calm	0	0	.....	2c	0	W	.....	0	0	Clear	
Washington, D. C.	30.44	773.2	30.56	776.2	32	0.0	89	NE	8	3.6	.....	8ck	2ks;sm	W	NE;N	0	0	Cloudy	
Wickenburg, Arizona	.....	.....	.....	.....	29	—1.7	14	N	.....	.....	.....	5c	0	Calm	.....	0	0	Fair	
Wilmington, N. Carolina	30.21	767.3	30.29	769.4	55	12.8	80	NE	8	3.6	.....	8cs	2s	NW	NE	0	0	Cloudy	
Winnemucca, Nevada	25.56	649.2	29.92	760.0	26	—3.3	76	NE	6	2.7	.....	.....	10s	.....	Calm	0	0	Cloudy	
Wood's Holl, Mass	30.57	776.5	30.63	778.0	37	2.8	71	NE	3	1.3	.....	.....	10s	.....	NE	0	0	Cloudy	
Yankton, Dakota	28.75	730.2	30.07	763.8	37	2.8	71	NW	24	10.7	.....	.....	10s	.....	NW	0.03	0.8	Cloudy	
Yuma, Arizona	29.83	757.7	30.00	762.0	48	8.9	37	E	1	0.4	.....	2cs	0	Calm	.....	0	0	Fair	
SUB-SERIES.																			
York Factory, B. A.	29.72	754.9	29.78	756.4	29.0	—1.7	94	N	12	5.4	.....	.....	10s	.....	.....	0.10	2.5	Snowing	J. Fortescue, W. Wood.
Havana, Cuba, W. I.	29.92	760.0	29.94	760.5	76	24.4	76	Calm	0	0	.....	10c	4n	Calm	Calm	0	0	Cloudy	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.08	764.0	30.09	764.3	78	25.6	86	Calm	0	0	.....	2c	0	Calm	.....	0	0	.....	James Gall.
Navassa, W. I.	29.85	758.2	29.93	760.2	82	27.8	.....	NE	10	4.5	.....	.....	.....	.....	.....	0	0	Fair	F. M Everett.
St. Thomas, W. I.	.....	.....	.....	.....	78	25.6	91	E	3	1.3	.....	2c	2n	E	.....	0	0	Clearing	G. O. Gellich.
Paramaribo, D. Guiana, S. A.	.....	.....	29.93	760.2	84	28.9	71	E	.....	.....	3	0	5k	.....	.....	0	0	Clear	C. J. Hering.
Batavia, Dutch Guiana, S. A	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Dr. H. Groot.
Medellin, Colombia, S. A.	25.20	640.1	.....	.....	68.0	20.0	84	Calm	.....	.....	0	2cs;k	2s;ks	.....	.....	0	0	Fair	Thomas Herran.
Honolulu, Oahu, H. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Daniel Smith.
Makawao, Maui, H. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters: Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573,4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard Mare Island, Cal.	29.99	761.7	48	8.9	48	8.9	78	SW	7	3.1	....	.....	6cks	.....	.....	0.01	0.3	.....	.....	Fine.....	
Navy Yard, Pensacola, Fla.	30.00	762.0	.....	.....	62	16.7	100	NW	4	1.8	....	.....	2	.....	.....	0.42	10.7	.....	.....	D. clouds....	
Navy Yard, Portsmouth, N.H	30.65	778.5	65	18.3	22	— 5.6	100	N	.....	.....	1	.....	.....	.....	.....	0	0	.....	.....	Clear	
Naval Hospital, Yokohama, Japan.....	30.45	773 4	54	12.2	40.5	4.7	78	NW	.....	.....	1	.....	0	.....	.....	0	0	.....	.....	Clear	
Adams. Punta Arenas, Patagonia.	30.38	771.6	53	11.7	52	11 1	60	SW	.....	.....	3	.....	3	.....	SW	0	0	None	.....	D. clouds.....	
Alert, Yokohama, Japan.....	30.62†	777.7†	46	7.8	46	7.8	77	NW	.....	.....	2	.....	0	.....	.....	.....	.....	.....	.....	Hazy.....	
Alliance, Constantinople, Turkey.	29.93	760.2	65	18.3	63	17.2	78	SSE	.....	.....	2	.....	10	.....	S&W	.....	.....	.....	.....	Cloudy.....	
Ashuelot. Tientsin, China.....	30.55	776.0	46	7.8	33	0.6	61	N&W	.....	.....	1	.....	5	.....	N&W	.....	.....	.....	.....	D. clouds....	
Canonicus, New Orleans, La.....	29.94	760.5	45	7.2	56	13.3	87	W	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	Clear	
Colorado, New York, N. Y.....	30.58	776.7	31	—0.6	30	— 1.1	78	NNE	2	0.9	.....	.....	4	.....	NNE	.....	.....	.....	.....	Fair.....	
Despatch, Constantinople, Turkey.	29.93	760.2	65	18.3	66	18.9	81	SE	.....	.....	4	.....	7	.....	S	.....	.....	.....	.....	Cloudy.....	
Essex, N. 3° 20,′ E. 5° 40′.....	29.81	757.2	83	28.3	85	29.4	92	SSW	.....	.....	3	.....	4	.....	S	.....	.....	Smooth	S	D. clouds.....	
Franklin, Norfolk, Va.....	30.52	775.2	49	9.4	50	10.0	79	NE	7.2	3.2	.....	.....	9	.....	NE	0	0	.....	.....	Cloudy.....	
Guard, N. 35° 00′, W. 33° 17′.....	30.40	772.1	71	21.7	72	22.2	71	ESE	.....	.....	3	.....	6	.....	E	.....	.....	Long	E	D. clouds.....	
Lackawana, San Francisco, Cal.....	30.07	763.8	.....	.....	55	12.8	74	SW	.....	.....	1	.....	9	.....	SW	.....	.....	.....	.....	D. clouds.....	
Marion, Smyrna, Turkey.....	29.81	757.2	64	17.8	64	17.8	94	E	.....	.....	1	.....	10	.....	Calm	Light	Light	Smooth	.....	Raining.....	
Michigan, Erie, Pa.....	29.75	755.6	61	16.1	40	4.4	48	SSE	.....	.....	6	.....	5	.....	SE	.....	.....	.....	.....	Cloudy.....	
Monongahela, N. 34° 28′, E. 23° 07′.....	29.67	753.6	70	21.1	67	19.4	95	W	.....	.....	2–3	.....	ck	.....	.....	Moderate.	Moderate.	Long	S&W	D. clouds.....	
New Hampshire, Port Royal, S.C.....	30.27	768.8	.....	.....	64	17.8	94	E	14	6.3	.....	.....	10	.....	E	0.04	1.0	.....	.....	D. clouds.....	
Omaha, Callao, Peru.....	30.10	764.5	74	23.3	74	23.3	90	SE	3	1.3	.....	.....	10	.....	SE	0	0	Smooth	.....	Pleasant.....	
Onward, Callao, Peru.....	30.04†	763.0†	74	23.3	71	21.7	90	SSE	.....	.....	2	.....	9	.....	.....	.....	.....	Long	W	D. clouds.....	
Ossipee, Norfolk, Va.....	30.52	775.2	65	18.3	50	10.0	86	NE	.....	.....	3	.....	10	.....	W	.....	.....	.....	.....	Overcast.....	
Palos, Shanghai, China.....	30.46	773.7	57	13.9	52	11.1	93	E	.....	.....	2	.....	10	.....	.....	.....	.....	.....	.....	Clear?.....	
Plymouth. N. 32° 53′, W. 71° 34′.....	30.40	772.1	65	18.3	66	18.9	94	ENE	.....	.....	5	.....	10	.....	.....	.....	.....	Moderate.	ENE	Overcast.....	
Powhatan, Hampton Roads, Va.....	.....	.....	53	11.7	53	11.7	??	E	22.8	10.2	.....	.....	10	.....	S	0	0	.....	.....	Overcast.....	
Ranger, Shanghai, China.....	30.53	775.4	67	19.4	60	15.6	76	E	.....	.....	1	.....	10	.....	E	.....	.....	.....	.....	Cloudy.....	
Rio Bravo, Brownsville, Texas.....	29.97	761.2	.....	.....	56	13.3	87	WNW	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	Misty.....	
Santee, Annapolis, Md.....	30.54	775.7	40	4.4	36	2.2	70	ENE	.....	.....	2	.....	10	.....	.....	0	0	.....	.....	Overcast.....	
Saratoga, Hampton Roads, Va.....	.....	.....	.....	.....	55	12.8	100	ENE	.....	.....	5	.....	9	.....	E	0	0	.....	.....	Cloudy.....	
St. Louis, League Island, Pa	30.36	771.1	38	3.3	34	1.1	71	NE	5	2.2	.....	.....	0	.....	.....	0	0	.....	.....	Clear.....	
Swatara, Hampton Roads, Va.....	30.51	774.9	.....	.....	52	11.1	79	NE	.....	.....	5	.....	10	.....	N&E	.....	.....	.....	.....	D. clouds.....	
Tennessee, Yokohama, Japan.....	30.55	776.0	66	18.9	44	6.7	68	NNW	8	3.6	.....	.....	.....	.....	.....	0	0	Light	N&E	Hazy.....	
Trenton, Villefranche, France.....	29.76	755.9	.....	.....	65	18.3	35	Calm	0	0	.....	.....	1	.....	S	0	0	.....	.....	D. clouds.....	
Vandalia, Villefranche, France,....	29.70	754.4	61	16.1	61	16.1	26	NNE	.....	.....	0–1	.....	0	.....	.....	.....	.....	.....	.....	Blue sky.....	
Wabash, Boston, Mass.....	30.68	779.3	53	11.7	27	— 2.8	??	NW	4	1.8	.....	.....	4	.....	NW	0	0	.....	.....	D. clouds.....	
Wyoming, Washington, D. C.....	30.59†	777.0†	44	6.7	32	0.0	.....	N&E	.....	.....	0–1	.....	10	.....	N	.....	.....	.....	.....	Misty.....	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. The position given for the Plymouth is that at noon, local time, instead of that at 7:35 a. m., Washington time.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Character.	Direction from—		
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska, N. 39° 24', W. 124° 10'			30.13†	765.3†	56	13.3		NW			2				W	Large	W	Clear	Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama, Panama Bay			29.70	754.4	79	26.1	91	NNW			3		5		NW			D. clouds	Capt. Howard.
S. S. City of Peking, N. 39° 35', W. 125° 16'			30.03*	762 7*	58	14.4	100	WSW			1		0			Moderate	WNW	Blue sky	Lt. Z. L. Tanner, U.S.N
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio, N. 33° 04', E. 144° 56'			30.46	773.7	65	18.3		NNE			8		10		NE	Rough	NNE	Overcast	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

NOTE.—The originals give the wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. *Aneroid. †Aneroid; corrected for elevation—instrumental error not known.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.

S. S. Belgic																			Capt. John Metcalf.
S. S. Gaelic, N. 32° 26', W. 139° 17'			30.17*	766.3*	66	18.9	??	W			4		ks		E	Long	W	Overcast	Capt. W. H. Kidley
S. S. Oceanic, N. 41° 23', E. 160°			30.22	767.6	46	7.8	69	NNW			5		8		Var.	Stro g	NW	Showery	Capt. H. Parsell.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. *Aneriod.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andresse n
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig, N. 49° 19', W. 25° 18'	S87W	7.5	29.74	755.4	55.0	12.8	80	SSW			8		k		WNW	Heavy		D clouds	Capt. K. Undütsch.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio, N. 40° 10', W. 70° 8'			30.62	777.7	40.0	4.4	82	NNE			4		s		N	Smooth		D. clouds	Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, nor distinguish between upper and lower clouds.

UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.		Character	Direction from—		
												Up'er	Lo'wr	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second	0—10.	0—10.	0—10.	From—	From—				
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, Liverpool			29.78*	756.4*	49	9.4	??	NW			6		5		NW			Cloudy	Captain Sargent.
S. S. Ohio. Liverpool			29.39	746.5	45	7.2	92	SSW			8		10		SSW			Overcast	Captain Morrison.
S. S. Pennsylvania																			Captain Harris.

Note.—The originals give the barometer as read off; the wind-force by the scale 0 to 12. *Aneroid; correction for elevation applied, instrumental error not known.

RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

S. S. Nederland																			Capt. Randle.
S. S. Switzerland, N. 49° 01′, W. 29° 59′			29.92*	760.0*	51	10.6		W	60	26.8			6		W	Very Heavy	W	D. clouds	Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

*Aneroid; regulated to standard at Antwerp.

ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

S. S. Hibernian																			Capt. W. Richardson.
S. S. Scandinavian																			

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, Kennebunk, Maine			30.62	777.7	43	6.1	75	Calm	0	0			0					Clear	Capt. James Jorgensen.

Note.—The originals for the schooner Addie Fuller give the amount of cloudiness by the scale 0 to 4; the barometer as read off.

Collated at the Office of the Chief Signal Officer of the Army, Washington, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer, U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON NOVEMBER 22, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:48 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.

1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:18 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.

1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Barometer: Corrected for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours	.....	.....	30.25	768.4	66.2	19.0	63	Calm	.....	.....	0	.....	1	.....	.....	0	0	Very fair.....	Michel.
Algiers	.....	.....	30.14	765.6	65.8	18.8	67	NW	.....	.....	1	.....	4	.....	.....	0	0	Cloudy	Peter.
La Calle	.....	.....	30.10	764.5	59.4	15.2	89	NW	.....	.....	3	.....	7	.....	.....	0.43	11.	Very cloudy	Fleury.
Tunis	.....	.....	30.02	762.5	61.7	16.5	48	NW	.....	.....	4	.....	3	.....	.....	0.020	0.5	Pretty fair..	Jacques.
Sfax	.....	.....	30.10	764.5	62.6	17.0	.....	NW	.....	.....	3	.....	9	.....	.....	Inap.	Inap.	Covered	Husson.
Saida	.....	.....	30.26	768.7	60.3	15.7	41	NNW	.....	.....	1	.....	1	.....	.....	0	0	Very fair....	Millot.
Tebessa	.....	.....	30.13	765.2	.....	.....	.....	NW	.....	.....	3	.....	9	.....	.....	.....	.....	Covered	Bourgeois.
Geriville	.....	.....	30.20	767.0	48.2	9.0	76	NNW	.....	.....	3	.....	1	.....	.....	0	0	Very fair....	Lemaillot.
Laghouat	.....	.....	30.23	767.7	57.2	14.0	57	W	.....	.....	4	.....	2	.....	.....	0	0	Fair.....	Guyot.
Biskra	.....	.....	30.18	766.5	69.4	20.8	35	NW	.....	.....	3	.....	4	.....	.....	.....	.....	Cloudy.....	Kuntz.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m.; or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

Agram	29.98	746.2	29.94	760.4	46.8	8.2	61	Calm	.....	.....	0	.....	2	.....	.....	0	0	.....	Prof. Ivan Stozir
Cracow, I. R. Observatory	29.02	737.2	29.80	756.9	43.9	6.6	74	W	.....	.....	1	.....	5	.....	.....	0	0	.....	Dr. Wierzbiski.
Eperies	28.95	735.2	29.84	757.8	45.3	7.4	72	Calm	.....	.....	0	.....	4cs	.....	.....	0	0	.....	Julius Mikolik.
Gratz	28.66	728.0	29.05	760.6	40.8	4.9	59	S	.....	.....	2	.....	7	.....	.....	0	0	.....	Andreas Rospini.
Hermannstadt	28.42	721.8	29.84	758.0	47.8	8.8	87	ESE	.....	.....	1	.....	8	.....	.....	0	0	.....	Prof. Reissenberger.
Kremsmünster	28.43	722.2	29.82	757.3	36.3	2.4	79	NE	.....	.....	1	.....	10	.....	.....	0	0	.....	Prof. C. Wagner.
Lemberg	28.81	731.8	29.82	757.3	40.3	4.6	86	NW	.....	.....	1	.....	10	.....	.....	0	0	.....	Dr. T. Stanecki.
Pola	29.79	756.6	29.90	759.5	51.4	10.8	53	NW	.....	.....	2	.....	10cs	.....	.....	0	0	.....	I.R.Hydrographic Office.
Szathmar	29.45	748.0	29.92	760.0	46.4	8.0	71	SE	.....	.....	2	.....	8	.....	.....	0	0	.....	Johann Tamas, S. J.
Szegedin	29.62	752.3	29.90	759.5	46.2	7.9	79	S	.....	.....	1	.....	5	.....	.....	0	0	.....	Karl Stancel.
Trieste	29.83	757.7	29.93	760.3	50.9	10.5	62	E	.....	.....	1	.....	10	.....	.....	0	0	Cloudy.....	P. Busin.
Vienna	29.12	739.7	29.83	757.6	45.9	7.7	56	SSW	.....	.....	1	.....	.....	.....	.....	0	0	.....	I. R. Central Met. Obs'y.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time, and at Trieste at 7 a. m. of the following day. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,253.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

Arlon	27.95	709.9	29.45	748.0	47.7	8.7	96	S	.....	.....	9	.....	10	.....	.....	0.772	19.6	Raining.....	Prof. M. Passau.
Brussels	29.13	740.0	29.33	745.0	50.4	10.2	83	W	.....	.....	5	.....	9	.....	WSW	0.071	1.80	Light rain....	Royal Observatory.
Furnes	29.26	743.2	29.28	743.8	52.7	11.5	92	SW	.....	.....	8	.....	6	.....	.....	0.008	0.2	.....	M. E. de Cae.
Maeseyck	29.19	741.3	29.32	744.6	51.3	10.7	88	WSW	.....	.....	6	.....	7	.....	.....	0.138	3.5	.....	M. Pierrot.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	28.46	722.9	28.55	725.2	41.9	5.5	.....	SSW	5	2.2	.....	.....	6	.....	.....	0.440	11.18	Hazy.....	W. Boswell.
Ardrossan	28.63	727.2	28.65	727.7	45	7.2	.....	WNW	.....	.....	4	.....	8	.....	.....	.....	.....	Overcast.....	William McNeil.
Armagh, Observatory	.....	.....	28.84	732.5	42.2	5.7	.....	WSW	20	8.9	.....	.....	10	.....	.....	.....	.....	Raining.....	S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)	.....	.....	28.90	734.0	47.5	8.6	.....	WSW	58	25.9	.....	.....	10	.....	.....	.....	.....	Raining.....	John Hartnup.
Birr Castle, (Parsonstown)	.....	.....	29.07	738.4	48.2	9.0	.....	W	.....	.....	5–6	.....	8	.....	.....	.....	.....	Squally.....	J. L. E. Dreyer.
Bradford, Yorkshire	28.46	722.9	28.56	733.0	42.9	6.1	.....	W	.....	.....	5	.....	10	.....	.....	0.93	23.6	Raining.....	J. McLandsborough.
Bridgetown, (Barbados)	29.89	759.2	29.92	760.0	83.0	28.3	.....	N	.....	.....	1	.....	3	.....	.....	.....	.....	D. clouds.....	Pvt. G. W. Roberts, A.
Cambridge, Observatory	.....	.....	29.15	740.4	43.0	6.1	.....	SW	.....	.....	3	.....	10	.....	.....	.....	.....	Rain & hail.	H. Todd. [H. C.
Cardington	.....	.....	29.15	740.4	51.0	10.6	.....	SW	.....	.....	7	.....	1	.....	.....	.....	.....	Blue sky.....	John McLaren.
Chatham, School M. E	29.08	738.6	29.21	741.9	52.2	11.2	.....	SW	.....	.....	5	.....	4	.....	.....	.....	.....	Showery.....	Lt. W. G. Morris, R. E.
Dartmoor	27.96	710.2	29.42	747.3	45.4	7.4	.....	W	.....	.....	6	.....	5	.....	.....	.....	.....	Showery.....	Alexander Watt.
Davos Platz (Switzerland)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Donaghadee	28.72	729.5	28.75	730.2	43	6.1	.....	W	.....	.....	6	.....	10	.....	.....	.....	.....	.....	Francis Redford, M. A.
Dover	29.24	742.7	29.26	743.2	51	10.6	.....	WSW	.....	.....	4	.....	4	.....	.....	.....	.....	Raining.....	J. Mac Gowan.
Eccles, (near Manchester)	.....	.....	28.94	735.1	46.8	8.2	.....	NW	11.0	4.9	.....	.....	10	.....	.....	.....	.....	½ clouded...	J. Costello.
Falmouth, Observatory	29.21	741.9	29.43	747.5	50.5	10.3	.....	W	.....	.....	6	.....	8	.....	.....	.....	.....	Showery.....	Thomas Mackereth.
Fort Napier, (Natal)	27.42	696.5	29.63	752.6	74.8	23.8	.....	NE	.....	.....	2	.....	2	.....	.....	.....	.....	Overcast.....	The Staff.
Free Town, (Sierra Leone)	.....	.....	29.89	759.2	87.0	30.6	.....	E	.....	.....	0	.....	3	.....	.....	.....	.....	D. clouds.....	P'vt. G. Salmon, A. H. C.
Galway, Queen's College	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	D. clouds.....	.....
Gibraltar, (Mediterranean)	30.13	765.3	30.18	766.6	66.5	19.2	.....	SW	.....	.....	4	.....	0	.....	.....	.....	.....	.....	Prof. A. H. Curtis.
Glasgow, Observatory	28.44	722.4	28.54	727.4	43.1	6.2	.....	SSW	.....	.....	2	.....	5	.....	.....	.....	.....	Blue sky.....	Corpl. C. Aitken, A. H. C.
Great Yarmouth	29.08	738.6	29.08	738.6	49	9.4	.....	WSW	.....	.....	6	.....	2	.....	.....	.....	.....	D. clouds....	D. G. Maclean.
Greenwich, Royal Obs'y	29.04	737.6	29.21	741.9	52.2	11.2	.....	WSW	.....	.....	6	.....	7	.....	.....	.....	.....	Squally.....	G. T. Watson.
Guernsey	29.28	743.7	29.50	749.3	53.5	11.9	.....	WNW	.....	.....	7	.....	5	.....	.....	.....	.....	D. clouds....	The Staff, for G. B. Airy.
Helston	.....	.....	29.50	749.3	52	11.1	.....	W	.....	.....	6	.....	8k	.....	.....	.....	.....	Squally.....	Dr. S. E. Hoskins, F.R.S.
Holyhead	28.92	734.6	28.97	735.8	49	9.4	.....	WSW	.....	.....	7	.....	3	.....	.....	0.13	3.3	Showery.....	M. P. Moyle.
Jersey	29.23	742.4	29.52	749.8	53.5	11.9	.....	W	.....	.....	7	.....	6	.....	.....	.....	.....	D. clouds.....	John Tilston.
Kew, Observatory	.....	.....	29.22	742.2	51.6	10.9	.....	WSW	29	13.0	.....	.....	8sd	.....	.....	.....	.....	Raining.....	J. Fisher.
Kingstown	28.94	735.1	28.97	735.8	47	8.3	.....	W	.....	.....	6	.....	3	.....	.....	.....	.....	Threatening	The Staff.
Leicester, Museum	.....	.....	29.06	738.1	50.0	10.0	.....	SW	.....	.....	6	.....	7	.....	.....	.....	.....	Blue sky.....	George Mitchell.
Malta, (Mediterranean)	29.71	754.6	29.79	756.7	60.2	15.7	.....	NW	.....	.....	6	.....	5	.....	.....	.....	.....	D. clouds....	Wm. J. Harrison, F.G.S.
Nairn	28.43	722.1	28.52	724.4	41	5.0	.....	SW	.....	.....	1	.....	5	.....	.....	.....	.....	D. clouds....	Sgt. C. Arbeiter, A.H.C.
Nassau, (Bahamas)	.....	.....	29.86	758.4	74.0	23.3	.....	SW	.....	.....	2	.....	2	.....	.....	.....	.....	½ clouded...	W. D. Penny.
Nottingham, Observatory	28.84	732.5	29.02	737.1	50.0	10.0	.....	SW	.....	.....	6	.....	8c;k;ks;d	.....	W	0.083	2.11	Blue sky.....	C. S. Duncombe.
Oscott, St. Mary's College	28.51	724.1	29.03	737.3	46.3	7.9	.....	WSW	.....	.....	6–7	.....	8	.....	.....	.....	.....	D. clouds....	E. J. Lowe, F. R. S.
Oxford, Radcliffe Obs'y	.....	.....	29.19	741.4	50	10.0	.....	W	.....	.....	4	.....	7	.....	.....	.....	.....	Threatening	Rev. Stephen Whitty
Plymouth	29.31	744.5	29.39	746.5	50.8	10.4	.....	WSW	.....	.....	5	.....	2	.....	.....	.....	.....	D. clouds....	F. Lucas
Roche's Point	29.23	742.4	29.27	743.4	50	10.0	.....	W	.....	.....	6	.....	5	.....	.....	.....	.....	D. clouds....	John Merrifield.
Saint Ann's Head	29.02	737.1	29.18	741.2	51	10.6	.....	W	.....	.....	8	.....	5	.....	.....	.....	.....	Squally.....	W. Kennedy.
Sandwick Manse, (Orkneys.)	.....	.....	28.42	721.9	42.0	5.6	.....	W	20	8.9	.....	.....	10	.....	.....	.....	.....	Misty.....	John C. Walker.
Scutari, Cemetery, (Turkey)	.....	.....	29.88	758.9	63.2	17.3	.....	SW	.....	.....	2	.....	4	.....	.....	.....	.....	Raining.....	Rev. C. Clouston, LL. D.
Sheffield	28.67	728.2	28.91	734.3	46.6	8.2	.....	SW	.....	.....	8	.....	6	.....	.....	0.05	1.3	D. clouds....	Sergt. W. H. Lyne.
Silloth Rectory	28.74	730.0	28.70	729.0	46.9	8.3	74	W	.....	.....	6	.....	10	.....	.....	0.165	4.19	Squally.....	W. F. Cooper.
Stonyhurst, Observatory	.....	.....	.....	.....	46.0	7.8	.....	W	.....	.....	6	.....	10	.....	.....	.....	.....	Overcast.....	Rev. F. Redford, M. A.
Stornoway, Lews C., (Hebr.)	.....	.....	28.44	722.4	41	5.0	.....	WNW	.....	.....	2	.....	3	.....	.....	.....	.....	Squally.....	Rev. S. J. Perry.
Stratfield Turgiss	29.04	737.6	29.26	743.2	50.1	10.1	.....	SW	.....	.....	3	.....	10	.....	.....	.....	.....	Threatening	John Smith.
Thurso	.....	.....	28.44	722.4	41	5.0	.....	SW	.....	.....	2	.....	9	.....	.....	.....	.....	Raining.....	Rev. C. H. Griffith, F.M.S.
Truro, Royal Institution	.....	.....	29.47	748.5	53	11.7	.....	W	.....	.....	8	.....	5	.....	.....	.....	.....	Raining.....	John Trotter.
Valencia, Observatory	.....	.....	29.34	745.2	49.1	9.5	.....	W	45	20.1	.....	.....	6	.....	.....	.....	.....	D. clouds....	W. Newcombe.
Sub-Series.																		D. clouds....	The Staff.
Calf of Man, (Isle of Man)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cape Good Hope, Obs'y	29.94	760.5	29.98	761.5	77.8	25.4	49	SSE	21	9.4	.....	0	1	.....	.....	.....	.....	.....	Henry Mercer.
Hobart Town, (Tasmania)	.....	.....	30.02	762.5	57.5	14.2	71	NW	.....	.....	2	.....	10k	.....	.....	.....	.....	.....	The Staff, for E. J. Stone.
Leith, Restalrig Park	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0	Covered.....	Francis Abbott, F.R.A.S.
Mauritius, Observatory	29.85	758.2	30.04	763.0	77.3	25.2	75	E	17.5	7.8	.....	2	6	.....	E	0.18	4.6	Squally.....	Andrew Gibb.
Melbourne, Observatory	29.98	761.5	30.07	763.8	50.2	10.1	78	SE	7	3.1	.....	.....	2	.....	.....	0.004	1.0	Very fine.....	C. Meldrum.
Monach L't-house, (Hebrides)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. L. J. Ellery.
North Unst, (Shetland Is.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Youngclause.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series: 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m.

Marine Series. Vessels.	Sea or swell. Height scale 0—9	Sea or swell. Direction from—		
S. S. Algeria, N. 51° 30′, W. 14° 15′	35*	WNW	Showery.....	Capt. W. Watson.
S. S. Batavia	.....	.....	.....	Capt. J. E. Mouland.
Ship Camperdown	.....	.....	.....	Capt. A. T. Miller.
Brig Catherine	.....	.....	.....	Capt. Adam Smith.
Barque Celeste	.....	.....	.....	Capt. D. F. McKechnie
S. S. Hibernia	.....	.....	.....	Capt. W. R. Cato
Barque Maroon	.....	.....	.....	Capt. A. T. Brown.
Ship Mikado	.....	.....	.....	Capt. C. C. Prehn.
S. S. Seine	.....	.....	.....	Capt. H. Manning.
Barque Sorata	.....	.....	.....	Capt. Jas. J. Price.
Schooner Traveller	.....	.....	.....	Capt. Alex Simpson
.....	.....	.....	.....	.....

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation The barometers and thermometers used by these observers have been generally carefully compared and corrected. *Feet.

Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	BAROMETER. Corrected for instrum'tal error and temperature. Inches.	BAROMETER. Corrected for instrum'tal error and temperature. Millimeters.	BAROMETER. Reduced to sea-level. Inches.	BAROMETER. Reduced to sea-level. Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Upper. From—	CLOUDS. Direction. Lower. From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	WEATHER.	OBSERVER.
San José	26.21	665.7	.....	.....	67.6	19.8	90	S	.....	.....	2	10	2k	.....	NE	0	0	.....	Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

STATIONS.	BAROMETER. Corrected for instrum'tal error and temperature. Inches.	BAROMETER. Corrected for instrum'tal error and temperature. Millimeters.	BAROMETER. Reduced to sea-level. Inches.	BAROMETER. Reduced to sea-level. Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Upper. From—	CLOUDS. Direction. Lower. From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	WEATHER.	OBSERVER.
Copenhagen	28.95	735.4	29.00	736.6	46.2	7.9	94	SSW	.....	.....	4	.....	2	.....	.....	.....	.....	.....	.....
Fanöe	28.88	733.5	28.90	734.0	47.7	8.7	78	W	.....	.....	4	.....	7	.....	.....	.....	.....	.....	.....
Godthaab, (Greenland)	29.69	754.0	29.73	755 1	26.4	— 3.1	.....	Calm	.....	.....	0	.....	10	.....	.....	.....	.....	.....	.....
Stykkisholm, (Iceland)	29.32	744.7	29.36	745.8	27.3	— 2.6	98	NE	.....	.....	7	.....	8	.....	.....	.....	.....	.....	.....
Thorshavn, (Farôe)	28.58	725.8	28.61	726.7	41.4	5.2	90	ENE	.....	.....	6	.....	10	.....	.....	.....	.....	Raining	.....
Vestervig	28.62	727.0	28.79	731.3	42.8	6.0	97	SW	.....	.....	6	.....	8	.....	.....	.....	.....	Raining	.....

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

STATIONS.	BAROMETER. Corrected for instrum'tal error and temperature. Inches.	BAROMETER. Corrected for instrum'tal error and temperature. Millimeters.	BAROMETER. Reduced to sea-level. Inches.	BAROMETER. Reduced to sea-level. Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Upper. From—	CLOUDS. Direction. Lower. From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	WEATHER.	OBSERVER.
Alençon, Normal School	29.07	738.4	29.62	752.4	48.2	9	83	SW	.....	.....	1	.....	10	.....	.....	0.480	12.2	Covered	Collignon, Director.
Amiens, Normal School	29.28	743.8	29.39	746.6	54.0	12.2	74	W	.....	.....	4	.....	5	.....	W	0.252	6.4	Cloudy	Bonvarne, Director.
Avignon, Normal School	29.91	759.6	29.98	761.6	58.3	14.6	60	NNW	.....	.....	2	.....	5	.....	NW	0	0	Cloudy	Mr. Giraud, Director.
Bar-sur-Seine	29.09	738.8	29.65	753.1	52.7	11.5	86	SW	.....	.....	6	.....	10	.....	SW	0.020	0.5	Light rain	C. Saillard.
Beaumette Obs'y (Angers)	29.49	749.0	29.65	753.0	54.9	12.7	93	SW	22.8	10.2	.....	.....	10	.....	SW	0.264	6.7	Raining	Albert Cheux.
Beauvais	29.21	741.9	29.49	749.0	51.8	11	79	W	.....	.....	6	.....	10	.....	W	0.167	4.25	Covered	Normal School.
Besançon	28.95	735.4	29.84	758.0	54.3	10.7	86	SSW	.....	.....	6	.....	8	.....	W	0	0	Very cloudy	Normal School.
Bourg-en-Bresse	29.05	737.8	29.96	761.0	49.5	9.7	62	S	.....	.....	4	.....	10n	.....	W	0	0	Covered	Normal School.
Bourges, Normal School	29.22	742.3	29.78	756.4	52.3	11.3	95	SW	.....	.....	8	.....	10	.....	SE	0.083	2.1	Covered	A. Wagner, Director.
Brest, Naval Observatory	29.37	746.1	29.60	751.7	53.1	11.7	73	WNW	.....	.....	5	.....	9	.....	WNW	0.177	4.50	Squally	The Staff.
Carcassonne, Normal School	29.65	753.0	30.06	763.4	59.7	15.4	87	W	.....	.....	2	.....	10	.....	W	0	0	Covered	Vateau, Director.
Caen	29.41	747.0	29.48	748.9	51.1	10.6	83	E	.....	.....	4	.....	10	.....	E	0	0	Covered	Normal School.
Chartres, Normal School	28.98	736.0	29.53	750.1	55.9	13.3	77	W	.....	.....	4	.....	10	.....	.....	0.12	3.	Covered	Lequin, Director.
Châlons-sur-Marne, N. Sch'l	29.21	741.9	29.52	749.9	52.7	11.5	95	S	.....	.....	3	.....	10kn	.....	S	0.197	5.0	Covered	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.52	724.3	29.86	758.5	54.9	12.7	59	SW	.....	.....	4	.....	8	.....	SW	0.008	0.2	Very cloudy	Alluard, Director.
Commercy, Normal School	28.85	732.7	29.75	755.7	48.9	9.4	95	WSW	.....	.....	8	.....	8	.....	WSW	0.067	1.7	Very cloudy	Dr. Goulet, Director.
Commune de Gréasque*	28.87	733.2	30.01	762.2	53.8	12.1	54	NW	.....	.....	4	.....	5	.....	NW	0	0	½ Cloudy	M. Kina.
Grenoble	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Normal School.
La Roche-sur-Yon, N. School	29.58	751.2	29.79	756.6	58.3	14.6	86	S	.....	.....	4	.....	10	.....	.....	0.167	4.25	Covered	Mouillot, Director.
Le Mans, Normal School	29.33	745.0	29.63	752.7	53.6	12	80	W	.....	.....	4	.....	8	.....	W	0.244	6.2	Very cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	28.95	735.4	29.88	758.9	50.7	10.4	74	SSE	.....	.....	2	.....	10	.....	.....	0.299	7.6	Covered	Pin, Director.
Lorient, Naval Observatory	29.58	751.4	29.68	753.9	54.3	12.4	76	W	.....	.....	6	.....	10	.....	.....	0.102	2.6	Covered	T. Carré, Director.
Mâcon, Normal School	29.16	740.7	29.87	758.6	42.4	5.7	94	Calm	.....	.....	0	.....	10	.....	.....	0	0	Covered	M. Marchal, Director.
Metz	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Mirecourt	28.63	727.3	30.08	764 0	46.6	8.1	91	SSW	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. A. Schuster, Dir.
Nismes, Normal School	29.79	756.7	30.00	761.9	59.0	15	45	W	.....	.....	2	.....	2	.....	SSE	0.24	6.	Slightly cl'dy	Normal School.
Orleans, Normal School	29.23	742.5	29.61	752 2	54.0	12.2	98	SSW	.....	.....	1	.....	2	.....	E	0	0	Slightly cl'dy	Boyer, Director.
Paris, Observatory	29.30	744.1	29.53	750.1	54.9	12.7	82	W	.....	.....	4	.....	8	.....	SW	0.055	1.4	Very cloudy	Bernard, Director.
Privas	28.91	734.2	29.99	761.8	46.4	8	75	NW	.....	.....	2	.....	10n	.....	W	0.064	1.62	Covered	National Observatory.
Rochefort, Naval Obs'y	29.84	757.8	29.87	758.6	55.4	13.0	95	WSW	.....	.....	2	.....	10	.....	NW	0	0	Covered	Normal School
Rouen, Normal School	29.40	746.7	29.48	748.9	54.9	12.7	63	S	.....	.....	7	.....	10	.....	SSW	0.20	5.	Covered	Lt. Decante, Director.
Tarbes, Normal School	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3	.....	10	.....	SW	0.465	11.8	Covered	F. Lucard, Director.
Villefranche	29.30	744.2	30.02	762.5	49.1	9.5	76	SE	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	T. Hugues, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.74	755.3	29.76	756.0	79.5	26.4	.....	.....	.....	.....	3	.....	10	.....	W	0	0	Covered	Vilot, Director.
Marseilles, Observatory	.....	.....	29.98	761.4	57.7	14.3	55	WNW	.....	.....	.....	.....	.....	.....	.....	0.04	1.	.....	L'Abbé Marchési.
Mont-Louis	24.87	631.6	30.18	766.6	44.8	7.1	46	NNE	5.6	2.50	3	.....	3	.....	.....	0	0	.....	The Staff.
Nice	.....	.....	29.91	759.7	56.7	13.7	36	E	.....	.....	.....	.....	2	.....	W	0	0	.....	Mr. Falgnère.
Paris, Montsouris Obs'y	29.25	742.9	29.52	749.9	54.9	12.7	82	WSW	.....	.....	.....	.....	5	.....	NE	.....	.....	Cloudy	Dr. A. Niepce.
Perpignan	.....	.....	30.01	762.3	64.4	18.0	39	N	18.6	8.33	1–6	.....	10	.....	WSW	0.169	4.3	.....	Marié Davy, Director.
Pic du Midi, (Summit,) H. P.	21.22	539.1	.....	.....	32.0	0.0	.....	NW	.....	.....	.....	.....	0	.....	.....	0	0	.....	Dr. Fines.
Pic du Midi, (Plantade,) H. P.	22.51	571.7	.....	.....	37 8	3.2	.....	N	.....	.....	4	.....	4	.....	.....	.....	.....	Snowy	M. Baylac.
Saint Maur, (near Paris)	29.37	746.0	29.54	750.2	54.5	12.5	86	SW	.....	.....	3	.....	4	.....	.....	0.114	2.9	Snowy	Gen'l de Nansouty.
Toulouse, Observatory	29.36	745.7	30.08	764.1	57.9	14.4	59	NW	.....	.....	3	.....	10	W	.....	0.189	4.8	.....	E. Renou.
Tours	29.87?	758.6?	29.67?	753.6?	56.7	13.7	91	SSW	.....	.....	4	.....	2	.....	.....	0.051	1.30	.....	The Staff.
Versailles, (near Paris)	.....	.....	29.53	750.1	55.0	12.8	81	W	.....	.....	6	.....	10	.....	W	0.110	2.8	.....	C. Marquet.
Zi-Ka-Wei, (near Shanghai)	30.27	768.9	30.30	769.5	50.9	10.5	93	Calm	0	0	3	.....	10	.....	.....	0.158	4.02	Rain-squalls	Dr. A. Bérigny.
	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	10n	.....	.....	0.016	0.4	Raining	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; for Montsouris, the barometer reduced to freezing but not to sea-level. At Mirecourt the cloud direction is apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 136 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. * Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg																			Prof. Dr. Hoh.
Berlin	29.20	741.7	29.37	746.0	45.7	7.6	81	SW			5		10			0.060	1.52		Prof. Arndt.
Breslau	29.13	740.0	29.66	753.3	42.8	6.0	53	S			4		10			0.177	4.61		Royal University Obs'y.
Carlsruhe	29.14	740.2	29.56	750.9	51.1	10.6	76	SW			8		10			0.457	11.6	Raining	Albert Senz.
Cassel	28.85	732.9	29.45	748.0	45.9	7.7	93	SW			5		10	SW		0.236	6.00		Dr. H. Möhl.
Crefeld	29.13	739.9	29.29	743.9	51.4	10.8	85	W			6		9			0.91	23.		Director Lose.
Emden	29.11	739.4	29.15	740.3	49.6	9.8	81	W			7		1			0.559	14.2		Prof. Prestel.
Frankfort on the Main	29.14	740.2	29.50	749.4	48.4	9.1		SW			5		10			0.138	3.5		Physical Society.
Friedrichshafen	28.36	720.4	29.81	757.1	46.4	8.0	68	S			5		8	SW		0.150	3.8		M. Wilhelm.
Hamburg	29.08	738.5	29.15	740.3	50.7	10.4	85	WSW			6		4k	SW		0.252	6.4		Captain F. Hegemann.
Kiel	29.03	737.4	29.05	737.9	49.1	9.5	81	SW			5		4			0.468	11.62		Prof. G. Karsten.
Königsberg, (Prussia)	29.50	749.3	29.58	751.3	40.8	4.9	75	S										Cloudy	Prof. E. Luther.
Köslin			29.31	744.5	35.8	2.1		S			6		5			0.047	1.2		H. Müller.
Leipsic, Observatory	29.06	738.2	29.48	748.9	45.3	7.4	77	S			3		9	SW		0	0		Prof. Bruhns.
Memel, Naval School	29.48	748.9	29.53	750.1	38.8	3.8	80	S			4		10cs						Reinbrecht von Skalweit.
Neufahrwasser	29.43	747.5	29.45	747.9	39.4	4.1	77	SSW			7		10					Raining	A. Lothes.
Posen	28.29	718.6	29.59	751.6	39.6	4.2	74	S			5		10					Covered	Dr. Magener.
Strassburg Obs., (in Alsace	29.12	739.6	29.67	753.6	50.0	10.0	79	WSW			5		10	W				Raining	Dr. Schur.
Stuttgart	28.67	728.3	30.00	762.0	51.3	10.7	67	W			9		9	W		0.177	4.5	Raining	Prof. Schoder.
Treves, (Trier)	28.84	732.5	29.35	745.5	50.7	10.4	90	SW			9		10			0.705	17.89		Prof. Flesch.
Weissenburg, (Bavaria)	28.17	715.6	29.70	754.3	42.8	6.0	67	SSW	9	4			10		W	0	0	Squally	Dr. Von Bebber.
Wustrow, Naval School	29.16	740.7	29.20	741.7	45.0	7.2	91	S			6		8					Cloudy	E. F. Schütz.
German Naval Series.																			

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet: Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4, Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens

Athens	29.50	749.2	29.89	759.1	64.2	17.9		S										Clear	Dr. J. F. J. Schmidt.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and wind-force; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.90	759.4	29.95	760.8	82.8	28.2	61	WSW	9.0?	4.0?			9		WSW	0	0	Threatening	
Deesa	29.52	749.8	30.00	761.9	85.0	29.4	23	Calm					0			0	0	Blue sky	
Bombay	29.90	759.5	29.94	760.4	83.0	28.3	72	WSW	8.0	3.6			1		S	0	0	Blue sky	
Poona	27.92	709.3	29.92	760.0	81.9	27.7	48	E					0			0	0	Blue sky	
Lahore	29.28	743.8	30.05	763.2	68.7	20.4	45	Calm	1.4	0.6			3			0	0	Cloudy	
Belgaum	27.43	696.7	29.96	761.0	79.3	26.3	41	ENE	4.0	1.8			1			0	0	D. clouds	
Bangalore																			
Roorkee	29.08	738.8	30.00	762.0	73.8	23.2	46	Calm	1.3	0.6			1			0	0		
Agra	29.45	747.9	30.02	762.4	77.2	25.1	52	NW								0	0		
Trichinopoly																			
Nagpur	28.97	735.8	30.02	762.5	77.6	25.3	44	Calm	3.8	1.7			0			0	0	Blue sky	
Madras																			
Lucknow	29.63	752.6	30.01	762.2	75.3	24.1	60	N	1.9	0.8			0			0	0	Blue sky	
Allahabad	29.69	754.2	30.01	762.3	72.1	22.3	65	Calm	1.3	0.6			0			0	0	Blue sky	
Patna	29.87	758.7	30.05	763.4	70.3	26.3	52	E	0.9	0.4			0			0	0	Blue sky	
Hazaribagh	27.98	710.7	30.02	762.6	72.8	22.7	54	WNW	3.2	1.4			0			0	0	Blue sky	
Cuttack	29.87	758.7	29.96	760.8	76.1	24.5	67	N	1.2	0.5			0			0	0	Blue sky	
Calcutta (Alipore)	29.99	761.8	30.01	762.3	73.7	23.2	78	N	2.0	0.9			0			0	0	Blue sky	
Goalpara	29.62	752.2	30.01	762.3	75.3	24.1	67	ENE	1.4	0.6			0			0	0	Blue sky	
Chittagong	29.93	760.1	30.02	762.5	74.3	23.5	72	Calm	0.4	0.2			0			0	0	Blue sky	
Sibsagar	29.72	754.9	30.07	763.7	69.8	21.0	86	NNE	0.6	0.3			4			0	0	Blue sky	
Rangoon																			
Jubbulpore	28.65	727.7	30.04	763.0	74.0	23.3	64	NE	1.7	0.8			0			0	0	Blue sky	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,361 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	22.02	559.2	29.97	761.2	29.1	— 1.6	70	SW	.....	.....	4	.....	8	NW	.....	0	0	.....	Ab. Dom. Morgini.
Stelvio	21.99	558.5	29.96	761.0	25.9	— 3.4	.....	WSW	.....	.....	1	.....	10	.....	.....	0	0	.....	Signora Ernesta Manfredi.
Udine	29.49	749.1	29.91	759.7	48.2	9.0	85	Calm	0	0	.....	.....	10	.....	.....	0	0	.....	Prof. Giovanni Clodig.
Padua	29.82	757.3	29.93	760.1	47.8	8.8	55	SE	1.3	0.6	.....	.....	10	NW	.....	0	0	.....	Prof. Dott. Lorenzoni.
Vicenza	29.74	755.3	29.93	760.3	48.7	9.3	52	NE	1.8	0.8	.....	.....	4	E	.....	0	0	.....	Conte Alm. Da Schio.
Verona	.....	.....	.....	.....	48.9	9.4	76	NNE	.....	.....	1	.....	2	.....	.....	0	0	.....	Dott. B. Bertoncelli.
Bergamo	28.61	726.8	29.96	760.9	45.0	7.2	52	SSW	.....	.....	2	.....	9	.....	.....	0	0	.....	Prof. Trionfini Carlo.
Domodossola	28.92	734.5	29.97	761.1	43.7	6.5	52	N	.....	.....	2	.....	9	.....	.....	0	0	.....	Prof. Giuseppe Calza.
Milan	29.45	748.0	29.98	761.5	43.5	6.4	.....	NE	.....	.....	2	.....	8	NNW	.....	0	0	.....	Ab. Gio. Capelli.
Pavia	29.61	752.2	29.97	761.2	45.0	7.2	52	NW	.....	.....	2	.....	9	.....	.....	0	0	.....	Prof. Gio. Cantoni.
Moncalieri	29.06	738.1	29.98	761.5	43.2	6.2	82	NNW	3.1	1.4	.....	.....	9	.....	.....	0	0	.....	Prof. P. F. Denza.
Mondovi	28.01	711.4	29.94	760.5	43.7	6.5	36	NW	.....	.....	2	.....	8	.....	.....	0	0	.....	Prof. D. C. Bruno.
Porto Maurizio	29.73	755.1	29.95	760.8	57.4	14.1	51	SE	.....	.....	2	.....	7	NW	.....	0	0	.....	Prof. L. Vassallo.
Genoa	29.76	755.9	29.93	760.2	56.5	13.6	34	Calm	0	0	.....	.....	4	.....	.....	0	0	.....	Prof. G. M. Garibaldi.
Piacenza	29.70	754.4	29.96	761.0	45.1	7.8	59	N	0.7	0.3	.....	.....	8	N	.....	0	0	.....	Dott. G. Manzi.
Parma	29.64	752.9	29.97	761.2	47.5	8.6	52	NW	.....	.....	2	.....	9	.....	.....	0	0	.....	Prof. P. Pigorini.
Florence	29.66	753.3	29.92	759.9	53.2	11.8	32	N	.....	.....	2	.....	5	.....	.....	0	0	.....	Cav. F. Meucci.
Leghorn	29.55	758.1	29.93	760.3	54.7	12.6	52	NE	2.5	1.1	.....	.....	9	.....	.....	0	0	.....	Prof. P. Monte.
Siena	28.71	729.2	29.93	760.2	50.0	10.0	49	NW	1.8	0.8	.....	.....	6	N	.....	0	0	.....	Prof. L. Toscani.
Urbino	28.39	721.0	29.96	760.9	45.5	7.5	68	N	.....	.....	2	.....	10	.....	.....	0.366	9.3	.....	Prof. P. Serpieri.
Pesaro	29.89	759.3	29.95	760.6	49.8	9.9	71	NE	23.0	10.3	.....	.....	10	.....	.....	0.220	5.6	.....	Prof. Luigi Guidi.
Ancona	.....	.....	.....	.....	51.4	10.8	69	NW	.....	.....	6	.....	10	NW	.....	0.039	1.0	.....	Prof. F. DeBosis.
Grosseto	29.81	757.2	29.93	760.1	54.9	12.7	46	NE	.....	.....	2	.....	8	SE	.....	0	0	.....	Avv. P. Ponticelli.
Rome	29.71	754.6	29.89	759.1	57.7	14.3	46	N	11.9	5.3	.....	.....	1	.....	.....	0	0	.....	Prof. P. A. Secchi.
Naples, O. U.	29.67	753.6	29.87	758.7	59.0	15.0	48	E	.....	.....	4	.....	4	NE	.....	0.020	0.5	.....	Prof. L. Palmieri.
Lecce	29.60	751.7	29.85	758.2	59.0	15.0	61	SSE	4.3	1.9	.....	.....	4	.....	.....	0.039	1.0	.....	Prof. C. De Giorgi.
Cosenza	28.98	736.1	29.88	758.9	52.5	11.4	71	SE	0.7	0.3	.....	.....	6	.....	.....	0.461	11.7	.....	Prof. F. D. Conti.
Cagliari	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. A. Pacinotti.
Riposto, (Sicily)	.....	.....	.....	.....	58.3	14.6	62	NE	.....	.....	4	.....	5	SW	.....	0	0	.....	Prof. F. Caflero.
Palermo	29.53	750.0	29.78	756.5	57.0	13.9	61	N	25.5	11.4	.....	.....	0	W	.....	0.878	22.3	.....	Prof. G. Cacciatore.
Caltanissetta	27.78	705.5	29.73	755.1	46.8	8.2	80	W	.....	.....	2	.....	10	.....	.....	0.177	4.5	.....	Prof. A. Pagani.
Syracuse	29.71	754.5	29.78	756.4	59.7	15.4	68	SW	.....	.....	2	.....	10	NW	.....	0	0	.....	Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.35	745.6	29.91	759.7	55.9	13.3	55	N	3.1	1.4	.....	.....	3	.....	.....	0.091	2.3	.....	Prof. F. Brioschi.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals give the wind-force on the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,548.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Siena, 348.5 m., or 1,143.3 ft.; Urbino, 461 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Tokei (Yeddo)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	The Observatory.
Tokei (Yeddo) University	30.41	772.3	30.51	775.0	45.2	7.3	80	N	3	1.3	.....	3cs	.....	S	.....	0	0	Fair	Prof. P. V. Veeder.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Aguascalientes	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	I. N. Marin, M. D.
Córdoba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	C. Peña, M. D.
Cuernavaca	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	L. Castillo, A. E.
Guadalajara	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. L. Perez.
Guanajuato	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. V. Fernandez.
Leon	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. M. Leal.
Mexico	23.12	587.3	30.22	767.6	46.4	8.0	66	Calm	0	0	.....	1c	0	W	.....	0	0	Fair	Central Observatory.
Orizaba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	N. N.
Orizaba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	I. Orozco, M. D.
Pabellon, (Aguascalts)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. V. de Leon, M. E.
Puebla	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. B. Gonzalez.
Toluca	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. C. Velazquez.
Tlacotalpam	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. F. R. Bayly.
San Luis Potosi	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	G. Barroeta, M. D.
Vera-Cruz	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. J. Rossell.
Zacatecas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. A. Bonilla, M. E.
Puebla, (Catholic Institute)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	P. Spina. [M. M. D. D.
Morelia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Tena, F. L. Páramo.

Note.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,290 m., or 7,512.9 ft.; Orizaba, 1,323 m., or 4,012.4 ft.; Pabell m, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

Furnished by the cooperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	.....	.....	.....	.....	.....	.....	.....	WSW	.....	.....	5	.....	.....	.....	.....	0.492	12.5	.....	
Groningen	29.26	743.1	29.26	743.1	52.5	11.4	.....	WSW	.....	.....	5	.....	.....	.....	.....	0.350	8.9	.....	
Helder	29.05	737.9	29.11	739.3	49.3	9.6	.....	WSW	.....	.....	5	.....	.....	.....	.....	0.138	3.5	.....	
Hellevoetsluis	29.03	738.6	29.08	738.6	51.3	10.7	.....	SW	.....	.....	5	.....	.....	.....	.....	.....	.....	.....	
Utrecht	.....	.....	29.22	742.1	50.9	10.5	77	WSW	.....	.....	6	.....	.....	.....	.....	.....	.....	.....	
.....	29.16	740.7	29.21	741.9	52.5	11.4	69	SW	.....	.....	6	.....	5	.....	.....	0.244	6.2	Cloudy	H. v d Brak.

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	28.52	724.3	28.57	725.7	40.6	4.8	87	SSE	20.0	8.9	.....	.....	4	.....	.....	0.173	4.4	.....	
Brönö	28.88	733.5	28.92	734.5	35.6	2.0	59	E	7	3	.....	.....	3	.....	.....	0	0	.....	
Christiania	28.63	727.3	28.78	731.1	35.4	1.9	90	ENE	7	3	.....	.....	10	.....	.....	0.142	3.6	Rain & snow	
Tromsö	28.96	735.6	29.00	736.7	38.1	3.4	63	SW	7	3	.....	.....	8	.....	.....	0	0	.....	

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	30.05	763.2	30.24	768.1	63.1	17.3	86	S	2.5	1.1	.....	.....	3	.....	.....	0	0	.....	Dr. J. A. Sampaio.
Campo Major	29.26	743.2	30.32	770.0	47.3	8.5	92	SW	2.5	1.1	.....	.....	9	.....	.....	0	0	.....	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.17	766.3	30.26	768.5	69.8	21.0	55	E	11.2	5.0	.....	.....	1	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.95	760.6	30.31	769.8	57.2	14.0	82	N	9.8	4.4	.....	.....	10	.....	.....	0	0	.....	The Staff.
Ponta Delgada, (Azores)	30.23	767.7	30.30	769.5	68.0	20.0	76	SE	5.6	2.5	.....	.....	6	.....	.....	0	0	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

Naval Series. Vessels.	Sea or swell. Height scale 0–9	Sea or swell. Direction from—		
S. S. India.	.....	.....	.....	A. D. Pedroso, Com'd't. Lt. S. A. P. de Mirando
.....	.....	.....	.....	
.....	.....	.....	.....	

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.29	743.9	29.72	754.8	40.6	4.8	84	SSE	13	6	.....	.....	8	.....	.....	.....	.....	.....	Astronomical Obs.
Wilna	29.32	744.6	29.74	755.5	38.8	3.8	88	SSW	2	1	.....	.....	10	.....	.....	.....	.....	Heavy clouds	Astronomical Obs.
Dorpat	29.38	746.2	29.63	752.5	38.1	3.4	85	S	7	3	.....	.....	10	.....	.....	.....	.....	.....	Prof. Dr. Weihrauch.
St. Petersburg	29.58	751.4	29.60	751.8	38.5	3.6	84	SSW	13	6	.....	.....	8	.....	.....	.....	.....	.....	Central Physical Obs.
Knopio	29.02	737.2	29.35	745.5	36.5	2.5	100	S	18	8	.....	.....	10	.....	.....	.....	.....	Raining	Ch. Forsten.
Kieff	29.17	740.9	29.82	757.3	40.8	4.9	96	SSE	4	2	.....	.....	10	.....	.....	Blank	Blank	.....	Physical Cabinet.
Nikolaiev	29.85	758.2	29.92	760.0	50.2	10.1	80	E	0	0	.....	.....	8	.....	.....	.....	.....	.....	Kurdakof.
Kertch	29.95	760.8	29.97	761.3	57.6	14.2	90	SE	7	3	.....	.....	9	.....	.....	.....	.....	.....	Lagorio.
Moscow	29.41	747.1	29.98	761.6	34.9	1.6	93	S	11	5	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Lugan	29.78	756.3	29.98	761.5	45.1	7.3	78	SE	9	4	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Archangel	29.57	751.0	29.59	751.5	33.1	0.6	100	SSE	18	8	.....	.....	10	.....	.....	.....	.....	.....	Ogorodnikof.
Tiflis	28.95	735.2	30.40	772.2	47.8	8.8	63	Calm	0	0	.....	.....	4	.....	.....	.....	.....	Light clouds	Physical Observatory.
Astrakhan	30.44	773.2	30.36	771.1	43.5	6.4	68	ESE	9	4	.....	.....	5	.....	.....	.....	.....	.....	Sebastianof.
Kasan	30.05	763.2	30.33	770.4	28.9	— 1.7	86	SSW	7	3	.....	.....	10	.....	.....	.....	.....	.....	Physical Cabinet.
Orenburg	30.41	772.4	30.83	783.1	9.1	—12.7	38	NE	9	4	.....	.....	0	.....	.....	.....	.....	.....	Tschernischef.
Ekaterinburg	29.48	748.7	30.48	774.3	26.8	— 2.9	83	WSW	4	2	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Nukuss	30.41	772.4	30.66	778.7	32.7	0.4	89	.....	.....	.....	.....	.....	0	.....	.....	.....	.....	.....	
Kasaly	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Bobrof.
Tashkend	28.85	732.8	30.67	779.1	32.0	0.0	96	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Michelson.
Barnaul	30.07	763.7	30.63	778.0	22.1	— 5.5	90	SW	0	0	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Yeniseisk	30.24	768.0	30.60	777.1	5.9	—14.5	93	E	4	2	.....	.....	10	.....	.....	.....	.....	.....	Marks.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Usolzef.
Oorga	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Mossin.
Peking, (China)	30.39	771.8	30.53	775.4	33.4	0.8	75	Calm	0	0	.....	.....	5	.....	.....	.....	.....	.....	Physical Observatory.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nikolaievsk, on the Amoor	.....	.....	.....	.....	3.2	—16.0	90	Calm	0	0	.....	.....	8s	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft. ☞ At Ekaterinburg the latest levellings show that the altitude of the barometer has always been 267 m., or 875.9 ft., instead of 306.4? m., or 1,005.2? ft.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Rave, Director.
Bilbao, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Manuel de Naveran.
Burgos, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Domingo Martin y Perez.
Madrid, Royal Observatory	27.95	709.9	30.22	767.6	50.4	10.2	73	S	3.0	1.33	.....	4	0	NW	.....	0	0	Light clouds	The Staff.
Murcia, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Olayo Diaz, Director.
Santiago, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.84	757.8	29.90	759.5	74.1	23.4	90	SE	1.1	0.5	.....	.....	10n	.....	.....	0.309	23.1	Very cloudy	Benito Vines, S. J.
San Fernando, Naval Obs'y.	30.17	766.4	30.27	769.0	61.5	16.4	66	N	5.4	2.4	.....	0	1	.....	NW	0	0	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.	.....	.....	29.83	757.6	79.2	26.2	88	SE	0	0	.....	2s	2k	.....	.....	0	0	Clear	Leonardo de Tejeda, Chief of Engineers.

NOTE.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the cooperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.22	742.1	29.26	743.1	34.9	1.6	.....	SE	.....	.....	2	.....	10	.....	.....	0.236	6.0	.....	
Umea	29.11	739.5	29.17	740.8	35.6	2.0	89	SW	.....	.....	2	.....	10	.....	.....	0.382	9.7	.....	
Hernosand	29.06	738.0	29.19	741.3	33.8	1.0	85	Calm	.....	.....	0	.....	8	.....	.....	0.587	14.9	.....	
Stockholm	28.96	735.6	29.14	740.1	39.9	4.4	80	SSE	.....	.....	6	.....	10	.....	.....	0.028	0.7	Raining	
Wisby	29.24	742.6	29.30	744.1	39.6	4.2	80	S	.....	.....	8	.....	10	.....	.....	0.091	2.3	Raining	
Sub-Series.																			
Upsala	29.05	737.8	29.12	739.7	38.1	3.4	87	SSE	11.2	5.0	.....	.....	10	.....	SSE	0.173	4.40	Raining	Dr. Hildebrandsson.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the cooperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.51	724.1	29.96	761.0	45.9	7.7	62	SSW	.....	.....	2	.....	10	.....	.....	0	0	Covered	The Observatory.
Zurich	28.21	716.4	29.87	758.8	45.3	7.4	66	W	.....	.....	4	.....	9	.....	.....	0.177	4.5	Cloudy	The Observatory.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—For Geneva the corresponding departures from the normal values are: Barometer, —2.5 mm; Thermometer, +2.2 cent.; Relative Humidity, —16 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the cooperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	29.87	758.8	63.1	17.3	72	WNW	10	4.5	.....	.....	3	.....	SW	0	0	.....	The Observatory.
Fao, (Persian Gulf)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Salonica	.....	.....	29.92	759.9	64.9	18.3	.....	SE	.....	.....	1	.....	0	.....	.....	Blank	Blank	.....	B. Stefanidès.
Valona	.....	.....	29.87	758.7	65.1	18.4	.....	SW	.....	.....	1	.....	2	.....	.....	0.24	6.	Slightly cl'dy	A. Bertrand.
Varna	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Imperial Observatory.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.92	760.0	30.03	762.8	74.8	23.8	55	N	.....	.....	1	.....	5c;ck	.....	.....	0	0	D. clouds	Prof. C. V. A. Van Dyck

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the cooperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Hon. J. Ferguson.
Brockville, Ontario	.....	.....	30.30	769.6	35	1.7	.....	S	1	0.4	.....	.....	8s	.....	S	0	0	Cloudy	W. R. Bigg.
*Chatham, N. B	.....	.....	30.50	774.7	11	—11.7	92	SW	1	0.4	.....	0	0	.....	.....	0	0	Clear	G. A. Blair.
Charlottetown, P. E. Island.	.....	.....	30.56	776.2	28	— 2.2	91	W	3	1.3	.....	0	0	.....	.....	0	0	Clear	H. J. Cundall, C. E.
Cornwall, Ontario	30.11	764.8	30.31	769.9	25.4	— 3.7	100	E	.....	.....	1	.....	Fog	.....	.....	0	0	Foggy	James Smith, M. A.
Dalhousie, N. B	30.49	774.4	30.52	775.2	10.2	— 8.8	96	W	.....	.....	1	.....	.....	.....	.....	0	0	Bright	H. A. Johnson.
Esquimault, B. C	29.20	741.7	30.25	768.3	47.3	8.5	92	SW	.....	.....	.....	8ck	0	.....	.....	0.50	12.7	Cloudy	W. H. Bevis.
*Father Point, Quebec	.....	.....	30.46	773.7	18	— 7.8	97	SW	1	0.4	.....	2c	2s	W	Calm	0	0	Fair	J. McWilliams.
Fredericton, N. B	30.52	775.2	30.59	777.0	17.0	— 8.3	100	W	5.0	2.2	.....	.....	10s	.....	.....	0	0	Cloudy	Prof. Harrison.
*Fort Garry, Manitoba	.....	.....	30.02	762.5	12	—11.1	92	S	2	0.9	.....	0	0	.....	.....	0.11	2.8	Clear	James Stewart.
Goderich, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	H. J. Strang, M. A.
Granton, Ontario	28.96	735.6	30.09	764.3	42	5.6	91	E	.....	.....	2	.....	10n	.....	.....	?	?	Raining	James Grant.
*Halifax, N. S	30.35	770.9	30.50	774.7	26	— 3.3	76	NW	4	1.8	.....	0	0	.....	.....	0	0	Clear	F. Allison, M. A.
Hamilton, Ontario	29.84	757.9	30.22	767.6	44.9	7.2	84	S	.....	.....	2	10cs	.....	SW	.....	0	0	Cloudy	Geo. Dickson, M. A
Heart's Content, N. F	30.27	768.8	30.29	769.4	29	— 1.7	77	NE	.....	.....	2	1c	0	.....	.....	0	0	Fine	E. Weedon.
*Kingston, Ontario	29.97	761.2	30.31	769.9	38	3.3	81	S	6	2.7	.....	.....	10ks	.....	Calm	0	0	Cloudy	S. Woods, M. A.
Little Glace Bay, N. S	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0	.....	C. H. Rigby.
*Montreal, Quebec	30.16	760.1	30.38	771.6	31	— 0.6	77	S	13	5.8	.....	8cs	0	W	.....	0	0	Cloudy	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.37	746.0	30.09	764.3	34	1.1	95	SE	12	5.4	.....	.....	10n	.....	SE	0.46	11.7	Light rain	Rev. R. Mosley.
Peterboro, Ontario	29.44	747.8	30.21	767.3	37.7	3.2	88	SE	.....	.....	2	.....	10n	.....	.....	.....	.....	Raining	J. F. Jeffers, B. A.
Port Dover, Ontario	29.45	748.0	30.16	766.1	44	6.7	92	S	15	6.7	.....	.....	10n	.....	S	0.42	10.7	Light rain	H. Morgan.
Port Hastings, N. S	30.43	772.9	30.48	774.2	37.7	3.2	.....	W	2	0.9	.....	.....	.....	.....	.....	0	0	Fine	Peter Grant.
Port Stanley, Ontario	29.46	748.3	30.12	765.0	44	6.7	99	S	8	3.6	.....	.....	10n	.....	SE	0.39	9.9	Light rain	M. Payne.
*Quebec, Quebec	30.14	765.5	30.49	774.4	20	— 6.7	64	E	0	0	.....	0	Haze	.....	.....	0	0	Clear	Capt. Ashe, R. N
*Rockliffe, Ontario	29.70	754.4	30.19	766.8	28	— 2.2	93	SE	10	4.5	.....	.....	10s	.....	SE	Inap.	Inap.	Light rain	W. H. McIntyre.
St. John, N. B	30.38	771.6	30.56	776.2	21	— 6.1	93	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	G. Murdock, C. E.
*Saugeen, Ontario	29.33	745.0	30.04	763.0	41	5.0	93	S	1	0.4	.....	.....	10ks	.....	S	0.30	7.6	Light rain	K. Stewart.
Stayner, Ontario	.....	.....	30.11	764.8	38	3.3	95	SE	9	4.0	.....	.....	10n	.....	SE	Inap.	Inap.	Threatening	R. J. Cole.
Stratford, Ontario	28.79	731.3	30.10	764.5	40.6	4.8	96	SW	10.0	4.5	.....	.....	10s	.....	.....	Inap.	Inap.	Cloudy	C. J. MacGregor, M. A.
*Sydney, C. B	30.44	773.2	30.47	773.9	31	— 0.6	81	W	2	0.9	.....	0	2ks	.....	.....	Inap.	Inap.	Clear	T. C. Hill.
*Toronto, Ontario	29.78	756.4	30.17	766.3	42	5.6	90	SE	8	3.6	.....	.....	10n	.....	SE	0.21	5.3	Cloudy	Magnetic Observatory.
Windsor, N. S	30.43	772.9	30.53	775 4	26.5	— 3.1	94	SE	0	0	.....	1c	0	.....	.....	0	0	Clear	Prof. John E. Oram.
Woodstock, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Montgomery.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	31.5	— 0.3	95	NE	.....	.....	.....	2k	2s	.....	.....	Inap.	Inap.	Fair	John Delany.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	30.23	767.8	30.47	773.9	33	0.6	79	S	4	1.8	.....	0	8ks	.....	S	0	0	Fair	
Alpena, Michigan	29.37	746.0	30.03	762.7	39	3.9	91	NW	13	5.8	.....	.....	10s	.....	NW	0.13	3.3	Cloudy	
Atlantic City, New Jersey	30.31	769.9	30.33	770.4	50	10.0	51	E	32	14.3	.....	.....	10s	.....	E	0	0	Cloudy	
Augusta, Georgia	29.78	756.4	29.96	761.0	56	13.3	97	N	7	3.1	.....	.....	10n	.....	N	3.15	80.0	Light rain	
Baltimore, Maryland	30.27	768.8	30.32	770.1	43	6.1	91	NE	5	2.2	.....	.....	10n	.....	NE	0.05	1.3	Light rain	
Barnegat, New Jersey	30.33	770.4	30.36	771.1	49	9.4	77	E	27	12.1	.....	10cs	0	Calm	.....	0	0	Cloudy	
Bismarck, Dakota	28.09	713.5	29.85	758.2	20	— 6.7	85	SE	8	3.6	.....	0	2s	.....	Calm	0	0	Clear	
Boise City, Idaho	27.08	687.8	29.70	754.4	39	3.9	91	SE	12	5.4	.....	.....	10n	.....	Calm	0.14	3.6	Light rain	
Boston, Massachusetts	30.39	771.9	30.65	776.0	33	0.6	79	W	5	2.2	.....	.....	10s; fg	.....	SE	Inap.	Inap.	Cloudy	
Brackettville, Texas	28.92	734.6	29.96	761.0	51	10.6	59	E	2	0.9	.....	5cs	0	Calm	.....	0	0	Fair	
Breckenridge, Minnesota	29.03	737.3	30.10	764.5	19	— 7.2	92	S	6	2.7	.....	2cs	0	Calm	.....	0	0	Fair	
Brownsville, Texas	30.05	763.3	30.12	765.0	55	12.8	93	NW	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Buffalo, New York	29.39	746.5	30.10	764.5	44	6.7	96	SE	14	6.3	.....	.....	10s	.....	SW	0.20	5.1	Threatening	
Burlington, Vermont	30.16	766.1	30.43	772.9	35	1.7	90	S	12	5.4	.....	.....	10s	.....	S	0	0	Cloudy	
Cairo, Illinois	29.80	756.9	30.20	767.1	45	7.2	68	NW	9	4.0	.....	.....	10s	.....	N	0.76	19.3	Cloudy	
Camp Grant, Arizona	25.21	640.3	30.01	762.2	46	7.8	6	N	.....	.....	1	0	0	.....	.....	0	0	Clear	
Camp Verde, Arizona	26.85	682.0	30.33	770.4	28	— 2.2	66	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Campo, California	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Cape Hatteras, N. Carolina	30.02	762.5	30.03	762.7	63	17.2	78	SE	28	12.5	.....	.....	10s	.....	SE	0.15	3.8	Cloudy	
Cape Henry, Virginia	30.17	766.3	30.20	767.1	57	13.9	87	NE	16	7.2	.....	.....	10s	.....	Calm	0.44	11.2	Cloudy	
Cape Lookout, N. Carolina	29.99	761.7	30.00	762.0	65	18.3	83	E	32	14.3	.....	.....	10s	.....	SE	0.08	2.0	Cloudy	
Cape May, New Jersey	30.26	768.6	30.29	769.4	52	11.1	79	E	26	11.6	.....	.....	10s	.....	E	0	0	Threatening	
Charleston, South Carolina	29.85	758.2	29.92	760.0	62	16.7	88	NE	8	3.6	.....	0	2s	.....	E	1.20	32.8	Clearing	
Cheyenne, Wyoming	23.92	607.6	29.86	758.4	28	— 2.2	67	NW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Chicago, Illinois	29.41	747.0	30.12	765.0	40	4.4	73	N	4	1.8	.....	.....	10s	.....	Calm	0.63	16.0	Cloudy	
Cincinnati, Ohio	29.38	746.2	30.02	762.5	53	11.7	93	S	1	0.4	.....	.....	Fog	.....	S	0.79	20.1	Dense fog	
Cleveland, Ohio	29.39	746.5	30.13	765.3	44	6.7	84	SE	13	5.8	.....	.....	10s	.....	SE	0.09	2.3	Cloudy	
Concho, Texas	28.13	714.5	29.88	758.9	35	1.7	90	NE	1	0.4	.....	8c	0	NE	.....	0	0	Clear	
Corsicana, Texas	29.65	753.1	30.13	765.3	41	5.0	83	Calm	0	0	.....	5cs	0	W	.....	0	0	Fair	
Davenport, Iowa	29.54	750.3	30.20	767.1	35	1.7	70	Calm	0	0	.....	.....	10s	.....	Calm	0.32	8.1	Cloudy	
Denison, Texas	29.31	744.5	30.14	765.5	40	4.4	91	NE	2	0.9	.....	8c	0	Calm	.....	0	0	Fair	
Denver, Colorado	24.71	627.6	29.93	760.2	25	— 3.9	63	S	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Detroit, Michigan	29.38	746.2	30.06	763.5	44	6.7	92	SW	4	1.8	.....	.....	10s	.....	Calm	0.42	10.7	Cloudy	
Dodge City, Kansas	27.41	696.2	29.77	756.1	34	1.1	79	SE	14	6.3	.....	.....	10s	.....	SE	0	0	Cloudy	
Dubuque, Iowa	29.46	748.3	30.19	766.8	31	— 0.6	89	NW	2	0.9	.....	0	8s	.....	Calm	0.34	8.6	Fair	
Duluth, Minnesota	29.40	746.7	30.10	764.5	33	0.6	90	N	5	2.2	.....	.....	10s	.....	N	0.24	6.1	Cloudy	
Eagle Pass, Texas	29.39	744.2	30.06	763.5	48	8.9	78	Calm	0	0	.....	1cs	1s	Calm	Calm	0	0	Fair	
Eastport, Maine	30.49	774.4	30.56	776.2	25	— 3.9	88	NW	4	1.8	.....	0	Fog	.....	NW	0	0	Clear	
Erie, Pennsylvania	29.36	745.7	30.09	764.3	43	6.1	83	S	26	11.6	.....	.....	10s	.....	W	0.16	4.1	Cloudy	
Escanaba, Michigan	29.40	746.7	30.08	764.0	36	2.2	80	W	4	1.8	.....	.....	10s	.....	W	0.76	19.3	Cloudy	
Florence, Arizona	28.45	722.6	30.05	763.3	35	1.7	52	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Fort Bayard, New Mexico	24.03	610.4	30.03	762.7	41	5.0	28	NE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Fort Craig, New Mexico	25.56	649.2	.....	.....	28	— 2.2	77	NW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Fort Gibson, Indian Ter	29.58	751.3	30.14	765.5	36	2.2	90	W	1	0.4	.....	5c	Fog	W	.....	0	0	Fair	
Fort Griffin, Texas	28.80	731.5	30.13	765.3	35	1.7	90	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	28.88	733.0	30.02	762.5	33	0.6	89	N	2	0.9	.....	0	2s	.....	W	0	0	Clear	
Galveston, Texas	30.08	763.5	30.10	764.5	54	12.2	86	NE	5	2.2	.....	2c	0	W	.....	0	0	Fair	
Grand Haven, Michigan	29.46	748.3	30.12	765.0	41	5.0	74	NE	12	5.4	.....	.....	10s	.....	NE	0.44	11.2	Cloudy	
Indianapolis, Indiana	29.31	744.5	30.11	764.8	43	6.1	91	NW	4	1.8	.....	.....	10s	.....	Calm	0.23	5.8	Threatening	
Indianola, Texas	30.02	762.5	30.05	763.3	67	19.4	95	NE	16	7.2	.....	0	0	.....	.....	0	0	Clear	
Jacksboro, Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Jacksonville, Florida	29.85	758.2	29.88	758.9	64	17.8	89	NW	3	1.3	.....	.....	10s	.....	NW	0.18	4.6	Cloudy	
Keokuk, Iowa	29.54	750.3	30.18	766.6	36	2.2	70	Calm	0	0	.....	.....	10s	.....	Calm	0.13	3.3	Cloudy	
Key West, Florida	29.86	758.4	29.89	759.2	74.0	23.3	83	N	10	4.5	.....	.....	10s	.....	NW	0	0	Cloudy	
Kittyhawk, North Carolina	30.10	764.5	30.13	765.3	59	15.0	87	E	19	8.5	.....	.....	10s	.....	E	0	0	Cloudy	
Knoxville, Tennessee	29.05	737.9	30.04	763.5	49	9.4	93	N	4	1.8	.....	.....	10s	.....	NE	1.28	32.5	Cloudy	
La Crosse, Wisconsin	29.39	746.5	30.15	765.8	38	3.3	72	N	4	1.8	.....	.....	10s	.....	N	0.43	10.9	Cloudy	
La Mesilla, New Mexico	26.08	662.4	30.23	767.8	29	— 1.7	72	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Laredo, Texas	.....	.....	.....	.....	48	8.9	77	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Leavenworth, Kansas	29.29	744.0	30.18	766.6	33	0.6	89	NW	1	0.4	.....	.....	Fog	.....	.....	0	0	Foggy	
Los Angeles, California	29.70	754.4	30.04	763.0	49	9.4	77	N	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Louisville, Kentucky	29.52	749.8	30.09	764.3	49	9.4	92	NW	8	3.6	.....	.....	10s	.....	NW	0.55	14.0	Cloudy	
Lynchburg, Virginia	29.48	748.8	30.18	766.6	44	6.7	84	NE	6	2.7	.....	.....	10n	.....	.....	0.17	4.3	Light rain	
Maricopa Wells, Arizona	.....	.....	.....	.....	26	— 3.3	63	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Marquette, Michigan	29.29	744.0	30.01	762.2	35	1.7	76	W	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Mason, Texas	28.43	722.1	30.27	768.8	36	2.2	90	Calm	.....	.....	.....	2cs	0	Calm	.....	0	0	Clear	
Memphis, Tennessee	29.84	757.9	30.17	766.3	46	7.8	85	N	6	2.7	.....	.....	10s	.....	NW	0.06	1.5	Cloudy	
Milwaukee, Wisconsin	29.44	747.8	30.15	765.8	37	2.8	80	NW	8	3.6	.....	.....	10s	.....	NW	0.70	17.8	Cloudy	
Mobile, Alabama	30.04	763.0	30.08	764.0	57	13.9	87	N	8	3.6	.....	.....	10s	.....	N	0	0	Cloudy	
Montgomery, Alabama	29.81	757.2	30.05	763.3	54.5	12.5	90	NW	2	0.9	.....	0	Fog	.....	Calm	0	0	Clear	
Morgantown, West Virginia	29.12	739.6	30.20	767.1	42	5.6	87	E	8	3.6	.....	.....	10n	.....	E	0.61	15.5	Light rain	
Mt. Washington, N. H.	24.02	610.1	30.38	771.6	23	— 5.0	60	SW	36	16.1	.....	5c	5s	SE	SW	0	0	Fair	
Nashville, Tennessee	29.57	751.1	30.11	764.8	49	9.4	85	N	5	2.2	.....	.....	10s	.....	N	0.14	3.6	Cloudy	
New Haven, Connecticut	30.36	771.1	30.48	774.2	33	0.6	89	NE	12	5.4	.....	.....	10s	.....	Calm	Inap.	Inap.	Cloudy	
New London, Connecticut	30.45	773.4	30.50	774.7	36	2.2	90	N	6	2.7	.....	.....	10s	.....	SE	Inap.	Inap.	Cloudy	
New Orleans, Louisiana	30.01	762.2	30.07	763.8	58	14.4	82	NW	7	3.1	.....	2c	8ks	W	NW	0	0	Cloudy	
Newport, Rhode Island	30.47	773.9	30.52	775.2	39	3.9	64	NE	7	3.1	.....	.....	10s	.....	SE	0	0	Threatening	
New York, New York	30.24	768.1	30.42	772.7	38	3.3	90	NE	20	8.9	.....	.....	2ks;fg	.....	NE	0	0	Foggy	
Norfolk, Virginia	30.12	765.0	30.18	766.6	54	12.2	100	E	7	3.1	.....	.....	Fog	.....	Calm	0.19	4.8	Foggy	
North Platte, Nebraska	27.11	688.6	29.78	756.4	28	— 2.2	88	SE	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Olympia, Washington Ter.	29.21	741.9	29.25	742.9	45	7.2	92	S	11	4.9	.....	.....	10n	.....	Calm	1.57	39.9	Heavy rain	
Omaha, Nebraska	29.04	737.6	30.17	766.3	31	— 0.6	89	Calm	0	0	.....	Haze	8s	Calm	Calm	0	0	Fair	
Oswego, New York	29.96	761.0	30.29	769.4	40	4.4	73	SE	12	5.4	.....	10cs	0	Calm	.....	0	0	Cloudy	
Pembina, Dakota	29.16	740.7	30.05	763.3	14	—10.0	81	SE	7	3.1	.....	0	0	.....	.....	0.03	0.8	Clear	
Philadelphia, Pennsylvania	30.32	770.1	30.38	771.6	41	5.0	91	NE	17	7.6	.....	.....	10s	.....	E	0	0	Cloudy	
Phœnix, Arizona	.....	.....	.....	.....	36	2.2	36	NE	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Pike's Peak, Colorado	17.58	446.5	29.79	756.7	0	—17.8	70	N	24	10.7	.....	0	0	.....	.....	0	0	Clear	
Pioche, Nevada	24.07	611.4	29.84	757.9	28	— 2.2	43	NW	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Pittsburg, Pennsylvania	29.35	745.5	30.18	766.6	43	6.1	91	SE	5	2.2	.....	.....	10n	.....	S	0.63	16.0	Light rain	
Port Huron, Michigan	29.37	746.0	30.04	763.0	43	6.1	92	S	10	4.5	.....	.....	10n	.....	Calm	0.43	10.9	Light rain	
Portland, Maine	30.50	774.7	30.56	776.2	36	2.2	80	Calm	0	0	.....	.....	10n	.....	Calm	Inap.	Inap.	Light snow	
Portland, Oregon	29.45	748.0	29.54	750.3	53	11.7	86	SW	9	4.0	.....	.....	10n	.....	Calm	1.66	42.2	Heavy rain	
Prescott, Arizona	24.83	630.7	30.19	766.8	28	— 2.2	66	SW	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Punta Rassa, Florida	29.90	759.4	29.92	760.0	67	19.4	79	N	12	5.4	.....	0	2ks	.....	N	0.80	20.3	Clear	
Red Bluff, California	29.66	753.4	30.02	762.5	48	8.9	85	S	2	0.9	.....	.....	10s	.....	Calm	0	0	Cloudy	
Rochester, New York	29.57	751.1	30.20	767.1	40	4.4	82	S	9	4.0	.....	.....	10n	.....	SW	0.10	2.5	Light rain	
Roseburg, Oregon	29.13	739.9	29.68	753.9	56	13.3	72	SW	7	3.1	.....	.....	10n	.....	SW	0.17	4.3	Light rain	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Sacramento, California	29.99	761.7	30.07	763.8	45	7.2	88	NW	1	0.4	.....	10k	0	W	.....	0	0	Cloudy	
St. Louis, Missouri	29.60	751.8	30.19	766.8	42	5.6	74	N	6	2.7	.....	.....	10s	.....	.....	0.30	7.6	Cloudy	
St. Marks, Florida	29.94	760.5	29.96	761.0	57	13.9	81	N	10	4.5	.....	0	8s	.....	N	2.38	60.5	Fair	
St. Paul, Minnesota	29.22	742.2	30.07	763.8	40	4.4	64	Calm	0	0	.....	0	0	.....	.....	0.06	1.5	Clear	
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salt Lake City, Utah	25.68	652.3	30.01	762.2	27	— 2.8	76	SE	6	2.7	.....	5c	0	E	.....	0	0	Fair	
San Antonio, Texas	29.41	747.0	30.01	762.2	44	6 7	84	NE	2	0.9	.....	2c	0	SW	.....	0	0	Clear	
San Diego, California	29.99	761.7	30.06	763.5	54	12.2	86	NE	4	1.8	.....	.....	10s	.....	Calm	0	0	Cloudy	
Sandusky, Ohio	29.42	747.3	30.10	764.5	48	8.9	92	S	12	5.4	.....	.....	Fog	.....	Calm	0.19	4.8	Light rain	
Sandy Hook, New Jersey	30.38	771.6	30.40	772.1	42	5.6	91	NE	27	12.1	.....	5cs	2ks	S	NE	0.14	3.6	Cloudy	
San Francisco, California	30.02	762.5	30.09	764.3	53	11.7	93	SE	6	2.7	.....	.....	10s	.....	SE	0	0	Cloudy	
Santa Fé, New Mexico	23.21	589.5	29.75	755.6	28	—2.2	67	NE	7	3.1	.....	Haze	0	.....	.....	0	0	Clear	
Savannah, Georgia	29.78	756.4	29.87	758.7	62	16.7	94	N	12	5.4	.....	.....	10n	.....	N	0.96	24.4	Light rain	
Shreveport, Louisiana	29.94	760.5	30.17	766.3	43	6.1	92	N	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Smithville, North Carolina	29.95	760.7	29.98	761.5	63	17.2	100	E	25	11.2	.....	.....	10n	.....	E	1.80	45.7	Heavy rain	
Springfield, Massachusetts	30.30	769.6	30.44	773.2	34	1.1	89	Calm	0	0	.....	.....	10s	.....	S	0	0	Cloudy	
Stanwix, Arizona	.....	.....	.....	.....	33	0.6	42	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Stockton, Texas	26.94	684.3	29.94	760.5	41	5.0	91	S	4	1.8	.....	0	5s	.....	S	0	0	Fair	
Thatcher's Island, Mass	30.49	774.4	30.54	775.7	39	3.9	72	N	4	1.8	.....	5k	5s	SW	Calm	0	0	Threatening	
Toledo, Ohio	29.38	746.2	30.06	763.5	48	8.9	100	SE	2	0.9	.....	.....	10n	.....	SE	0.29	7.4	Light rain	
Tucson, Arizona	27.56	700.0	30.10	764.5	33	0.6	50	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Tybee Island, Georgia	29.82	757.4	29.85	758.2	61	16.1	94	N	8	3.6	.....	.....	Fog	.....	Calm	1.19	30.2	Foggy	
Umatilla, Oregon	29.19	741.4	.....	.....	50	10.0	72	Calm	0	0	.....	.....	10s	.....	Calm	0.07	1.8	Cloudy	
Vicksburg, Mississippi	29.90	759.4	30.16	766.1	48	8.9	93	N	4	1.8	.....	5c	Fog	Calm	Calm	0	0	Fair	
Virginia City, Montana	24.08	611.6	29.56	750.8	16	—8.9	83	SE	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Visalia, California	29.74	755.4	30.13	765.3	39	3.9	91	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Washington, D. C.	30.16	766.1	30.27	768.8	45	7.2	100	E	11	4.9	.....	.....	10n	.....	E	Inap.	Inap.	Light rain	
Wickenburg, Arizona	.....	.....	.....	.....	27	— 2.8	8	N	.....	.....	.....	8c	0	Calm	.....	0	0	Fair	
Wilmington, N. Carolina	29.92	760.0	30.00	762.0	63	17.2	94	E	14	6.3	.....	.....	10n	.....	E	1.04	26.4	Light rain	
Winnemucca, Nevada	25.58	649.7	29.94	760.5	37	2.8	62	SW	8	3.6	.....	.....	10s	.....	SW	0	0	Cloudy	
Wood's Holl, Mass	30.48	774.2	30.54	775.7	41	5.0	65	NE	2	0.9	.....	.....	10s	.....	SE	0	0	Cloudy	
Yankton, Dakota	28.83	732.3	30.20	767.1	21	— 6.1	78	Calm	0	0	.....	2c	0	NW	.....	0	0	Fair	
Yuma, Arizona	29.86	758.4	30.03	762.7	47	8.3	48	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Sub-Series.																			
York Factory, B. A.	29.60	751.8	29.66	753.4	13.0	—10.6	90	NW	8	3.6	.....	0	0	.....	.....	0	0	Clear	J. Fortescue, W. Wood.
Havana, Cuba, W. I.	29.83	757.7	29.85	758.2	75	23.9	90	Calm	0	0	.....	.....	10n	.....	NW	0.81	20.6	Light rain	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.02	762.5	30.03	762.7	77	25.0	86	Calm	0	0	.....	2c	2s	Calm	N	0	0	.....	James Gall.
Navassa, W. I.	29.80	756.9	29.88	758.9	80	26.7	.....	N	2	0.9	.....	.....	.....	.....	.....	0	0	Fair	F. M Everett.
St. Thomas, W. I.	.....	.....	.....	.....	83	28.3	75	E	2	0.9	.....	2c	2k	E	.....	0.3	8.	.....	G. O. Gellich.
Paramaribo, D. Guiana, S. A.	.....	.....	29.94	760.5	86	30.0	68	E	.....	.....	3	5k	0	E	.....	0	0	Clear	C. J. Hering.
Batavia, Dutch Guiana, S. A	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Dr. H. Groot.
Medellin, Colombia, S. A.	25.19	639.8	.....	.....	66.2	19.0	88	E	.....	.....	1	.....	9s;ks	.....	.....	0.46	11.7	Cloudy	Thomas Herran.
Honolulu, Oahu, H. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Daniel Smith.
Makawao, Maui, H. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. L. Clarke.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,860 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573,4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.67 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not certain. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard Mare Island, Cal.	30.06	763.5	51	10.6	51	10.6	93	SE	2	0.9	.....	.....	10ks	.....	Calm	0	0	.....	.....	Threatening	
Navy Yard, Pensacola, Fla.	30.11	764.8	.....	.....	58	14.4	94	N	6	2.7	.....	.....	10	.....	N	0	0	.....	.....	D. clouds	
Navy Yard, Portsmouth, N.H	30.53	775.4	60	15.6	32	0.0	100	NE	.....	.....	1	.....	10	.....	.....	0	0	.....	.....	Cloudy	
Naval Hospital, Yokohama, Japan	30.40	772.1	55.5	13.1	49	9.4	74	NNW	.....	.....	2	.....	8k	.....	S	0	0	.....	.....	Cloudy	
Adams. Punta Arenas, Patagonia.	29.68	753.9	43	6.1	43	6.1	52	SW	.....	.....	3	.....	4	.....	SW	0	0	None	.....	D. clouds	
Alert. Yokohama, Japan	30.54†	775.7†	52	11.1	52	11.1	86	NNW	.....	.....	3	.....	10	.....	NNW	.....	.....	.....	.....	Hazy	
Alliance, Constantinople, Turkey.	30.03	762.7	67	19.4	66	18.9	89	W	.....	.....	1	.....	3	.....	W	.....	.....	.....	.....	Pleasant	
Ashuelot. Takoo, China	30.58	776.7	51	10.6	36	2.2	70	NE	.....	.....	1	.....	10	.....	Calm	.....	.....	.....	.....	D. clouds	
Canonicus, New Orleans, La	30.04	763.0	45	7.2	58	14.4	82	NW	.....	.....	3	.....	9	.....	N&E	.....	.....	.....	.....	Cloudy	
Colorado, New York, N. Y.	30.40	772.1	39	3.9	38	3.3	90	ENE	3	1.3	.....	.....	10	.....	NE	0	0	.....	.....	Light fog	
Despatch, Constantinople, Turkey.	30.01	762.2	68	20.0	62	16.7	94	SW	.....	.....	2	.....	6	.....	SW	.....	.....	.....	.....	Cloudy	
Essex, Clarence, Fernando Po Id.	29.82	757.4	86	30.0	88	31.1	86	ESE	.....	.....	1	.....	5	.....	.....	.....	.....	Smooth	.....	D. clouds	
Franklin, Norfolk, Va.	30.26	768.6	54	12.2	55	12.8	100	NE	7	3.1	.....	.....	10	.....	NE	0.1	3.	.....	.....	Foggy	
Guard, N. 36° 12′, W. 32° 10′	30.18	766.6	69	20.6	68	20.0	84	SE	.....	.....	4	.....	7	.....	S&E	.....	.....	Smooth	S&E	Showery	
Lackawana, San Francisco, Cal	30.16	766.1	.....	.....	56	13.3	81	ESE	.....	.....	4	.....	10	.....	SE	.....	.....	.....	.....	Misty	
Marion, Smyrna, Turkey	29.94	760.5	65	18.3	65	18.3	94	Calm	.....	.....	0	.....	10	.....	N	Moderate.	Moderate.	.....	...	Raining	
Michigan, Erie, Pa.	29.58	751.3	60	15.6	44	6.7	37	SE	.....	.....	6	.....	10	.....	SE	.....	.....	.....	.....	Cloudy	
Monongahela, N. 33° 58, E. 25° 30′	30.06	763.5	69	20.6	69	20.6	95	SW	.....	.....	2-3	.....	cks	.....	.....	Light	Light	Moderate	S & W	D. clouds	
New Hampshire, Port Royal, S.C.	30.02	762.5	.....	.....	63	17.2	100	NE	20	8.9	.....	.....	10	.....	.....	1.04	26.4	.....	.....	Squally	
Omaha, Callao, Peru	30.08	764.0	74	23.3	72.5	22.5	90	SE	4	1.8	.....	.....	10	.....	SE	0	0	Smooth	.....	Pleasant	
Onward, Callao, Peru	30.05†	763.3†	75	23.9	71	21.7	85	SE	.....	.....	3	.....	8	.....	.....	.....	.....	Long	W	D. clouds.	
Ossipee, Norfolk, Va.	30.26	768.6	60	15.6	56	13.3	100	NE	.....	.....	2	.....	10	.....	S	.....	.....	.....	.....	Overcast	
Palos, Shanghai, China	30.36	771.1	55	12.8	58	14.4	88	N&W	.....	.....	0-1	.....	10	.....	.....	.....	.....	.....	.....	Raining	
Plymouth, N. 30° 17′, W. 71° 15′	30.29	769.4	72	22.2	70	21.1	100	E	.....	.....	6	.....	10	.....	.....	.....	.....	Rough	E	Squally	
Powhatan, Hampton Roads, Va.	.....	.....	57	13.9	57	13.9	100	ENE	7.2	3.2	.....	.....	10	.....	.....	0.22	5.6	.....	E	Foggy	
Ranger, Shanghai, China	30.41	772.4	68	20.0	61	16.1	82	Calm	.....	.....	0	.....	10	.....	Calm	.....	.....	.....	.....	Rainy	
Rio Bravo, Brownsville, Texas	30.01	762.2	.....	.....	52	11.1	100	WNW	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	Misty	
Santee, Annapolis, Md.	30.34	770.6	56	13.3	47	8.3	48	E	.....	.....	4	.....	10	.....	E	.....	.....	.....	.....	Drizzling	
Saratoga, Hampton Roads, Va.	.....	.....	.....	.....	51	10.6	??	NNE	.....	.....	4	.....	10	.....	.....	0	0	.....	.....	Foggy	
St. Louis, League Island, Pa	30.23	767.8	46	7.8	47	8.3	85	NE	7	3.1	.....	.....	9	.....	NE	0	0	.....	.....	Cloudy	
Swatara, Hampton Roads, Va.	30.25	768.3	.....	.....	58	14.4	88	NE	.....	.....	2	.....	10	.....	N&E	.....	.....	.....	.....	Foggy	
Tennessee, Yokohama, Japan	30.63	778.0	66	18.9	50	10.0	64	NNW	16	7.2	.....	.....	8	.....	S&E	0	0	Smooth	.....	D. clouds	
Trenton, Villefranche, France	30.00	762.0	.....	.....	64	17.8	58	SE	4	1.8	.....	.....	4	.....	S&E	0	0	.....	.....	D clouds	
Vandalia, Villefranche, France,	29.95	760.7	60	15.6	60	15.6	55	SE	.....	.....	1	.....	5	.....	N	.....	.....	.....	.....	D. clouds	
Wabash, Boston, Mass.	30.57	776.5	46	7.8	34	1.1	79	NNW	2	0.9	.....	.....	10	.....	Calm	0	0	.....	.....	D. clouds	
Wyoming, Washington, D. C.	30.53†	775.4†	.....	.....	46	7.8	.....	ESE	.....	.....	3	.....	3	.....	.....	.....	.....	.....	.....	Raining	

Note.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. The position given for the Plymouth is that at noon, local time, instead of that at 7:35 a. m., Washington time.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Character.	Direction from—		
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska, N. 48° 04′, W. 125° 00′			29.75†	755.6†	58	14.4		SSW			6	10		W	Large	W	Thick		Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama, Panama Bay			29.69	754.1	80	26.7	91	NNW			2	2		Calm			D. clouds		Capt. Howard.
S. S. City of Peking, N. 38° 20′, W. 124° 03′			30.12*	765.0*	56	13.3	100	SE			2	10		SE	Moderate.	W	Foggy		Lt. Z. L. Tanner, U.S.N.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio, N. 35° 26′, E. 139° 39′			30.46	773.7	52	11.1		N			7	10		NNE	Short		Overcast		Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

NOTE.—The originals give the wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. *Aneroid. †Aneroid; corrected for elevation, instrumental error not known.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.

S. S. Belgic																			Capt. John Metcalf.
S. S. Gaelic, N. 21° 14′, W. 143° 02′			30.22*	767.6*	68	20.0	95	W			4	8		ENE	Heavy	NW	D. clouds		Capt. W. H. Kidley
S. S. Oceanic, N. 42° 56′, E. 165° 50′			30.21	767.3	44	6.7	68	Var.			4–5	7		W	High	N	Raining		Capt. H. Parsell.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. *Aneriod.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig; N. 49° 9′, W. 29° 28′	S85W	7.5	30.01	762.2	50.0	10.0	64	W			5	ck		W	Rough		D. clouds		Capt. K. Undütsch.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio, N. 37° 33′, W. 75° 7′			30.25	768.3	58.0	14.4	88	SE			3	10			Smooth		Threatening		Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, nor distinguish between upper and lower clouds.

UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Lo'wr	Upper.	Lower.	Character	Direction From—		
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second	0—10.	0—10.	0—10.	From—	From—				
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, Liverpool			29.22*	742.2*	57	13.9	81	W			8		7		WNW			Cloudy	Captain Sargent.
S. S. Ohio. N. 51° 35′, W. 8° 32′			29.29	744.0	52	11.1	93	W			8		2		W	Rough	WSW	Stormy	Captain Morrison. Captain Harris.
S. S. Pennsylvania																			

Note.—The originals give the barometer as read off; the wind-force by the scale 0 to 12. *Aneroid; correction for elevation applied, instrumental error not known.

RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

S. S. Nederland																			Capt. Randle.
S. S. Switzerland, N. 48° 17′, W. 35° 03′			30.20*	767.1*	49	9.4		NNE	10	4.5			10		W	Heavy	NW	Overcast	Capt. Jackson. Capt. Nichols.
S. S. Vaderland																			

*Aneroid; regulated to standard at Antwerp.

ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

S. S. Hibernian																			Capt. W. Richardson.
S. S. Scandinavian																			

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller Kennebunk, Maine			30.44	772.3	42	5.6	74	NE	3	1.3			10k		Calm			Overcast	Capt. James Jorgensen.

Note.—The originals for the schooner Addie Fuller give the amount of cloudiness by the scale 0 to 4; the barometer as read off.

Collated at the Office of the Chief Signal Officer of the Army, Washington, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assgd.) Chief Signal Officer, U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON NOVEMBER 23, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:48 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.

1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.

1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Barometer: Corrected for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours	.....	.....	30.21	767.4	67.6	19.8	57	Calm	.....	.....	0	.....	0	.....	.....	0	0	Clear	Michel.
Algiers	.....	.....	30.14	765.5	65.1	18.4	82	NW	.....	.....	1	.....	2	.....	.....	0	0	Fair	Peter.
La Calle	.....	.....	30.18	766.5	66.6	19.2	67	NW	.....	.....	2	.....	4	.....	.....	0	0	Cloudy.....	Fleury.
Tunis	.....	.....	30.13	765.3	66.6	19.2	51	NW	.....	.....	4	.....	5	.....	.....	0	0	Cloudy.....	Jacques.
Sfax	.....	.....	30.20	767.0	62.6	17.0	.....	W	.....	.....	3	.....	1	.....	.....	0	0	Very fair....	Husson.
Saida	.....	.....	30.26	768.6	66.7	19.3	21	SSW	.....	.....	1	.....	1	.....	.....	0	0	Very fair....	Millot.
Tebessa	.....	.....	30.18	766.6	.....	.....	.....	NW	.....	.....	2	.....	0	.....	.....	.....	.....	Clear.	Bourgeois.
Geriville	.....	.....	30.23	767.7	49.6	9.8	79	NNW	.....	.....	2	.....	2	.....	.....	0	0	Fair.....	Lemaillot.
Laghouat	.....	.....	30.24	768.2	64.4	18.0	44	W	.....	.....	4	.....	0	.....	.....	0	0	Clear	Guyot.
Biskra	.....	.....	30.23	767.8	68.7	20.4	21	NW	.....	.....	1	.....	0	.....	.....	.....	.....	Clear	Kuntz.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890 ? meters, or 2,919.9 ? feet; Tebessa, 1,088 ? m., or 3,569.4 ? ft.; Geriville, 1,360 ? m.; or 4,461.7 ? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

Agram	29.18	741.2	29.74	755.3	46.4	8.0	75	NW	.....	.....	2	.....	10	.....	.....	0.067	1.7	Raining.....	Prof. Ivan Stoztr
Cracow, I. R. Observatory	28.85	732.7	29.02	752.3	45.3	7.4	72	W	.....	.....	2	.....	10	.....	.....	0.008	0.2	.....	Dr. Wierzbiski.
Eperies	28.79	731.2	29.09	754.0	39.2	4.0	93	Calm	.....	.....	0	.....	10	.....	.....	0	0	.....	Julius Mikolik.
Gratz	28.50	723.8	29.78	756.3	39.2	4.0	76	E	.....	.....	2	.....	8	.....	.....	0	0	.....	Andreas Rospini.
Hermannstadt	28.31	719.1	29.74	755.5	45.7	7.6	89	ESE	.....	.....	1	.....	3	.....	.....	0	0	.....	Prof. Reissenberger.
Kremsmünster	28.35	720.1	29.09	754.2	47.5	8.6	69	W	.....	.....	5	.....	7	.....	.....	0.197	5.0	.....	Prof. C. Wagner.
Lemberg	28.59	726.2	29.58	751.3	45.0	7.2	74	SW	.....	.....	2	.....	10	.....	.....	0.002	0.04	.....	Dr. T. Stanecki.
Pola	29.04	752.8	29.75	755.7	52.7	11.5	81	W	.....	.....	2	.....	10cs	.....	.....	0	0	.....	I.R.HydrographicOffice.
Szathmar	29.33	745.0	29.80	756.9	47.1	8.4	81	S	.....	.....	2	.....	10	.....	.....	0.085	2.15	.....	Johann Tamas, S. J.
Szegedin	29.48	748.7	29.76	755.9	45.7	7.6	91	Calm	.....	.....	0	.....	10	.....	.....	0.118	3.00	.....	Karl Stancel.
Trieste	29.09	754.1	29.79	756.7	49.5	9.7	89	E	.....	.....	1	.....	10	.....	.....	Inap.	Inap.	Sprinkling...	P. Busin.
Vienna	28.97	735.7	29.66	753.4	48.2	9.0	71	W	.....	.....	2	.....	.....	.....	.....	0.157	4.0	.....	I. R. Central Met. Obs'y.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time, and at Trieste at 7 a. m. of the following day. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

Arlon	28.18	715.8	29.71	754.6	42.4	5.8	73	SW	.....	.....	6	.....	9	.....	.....	0.020	0.5	.....	Prof. M. Passau.
Brussels	29.38	746.3	29.58	751.4	47.5	8.6	59	W	.....	.....	6	.....	10	.....	.....	0	0	.....	Royal Observatory.
Furnes	29.56	750.9	29.59	751.5	49.3	9.6	97	W	.....	.....	8	.....	6	.....	.....	0	0	.....	M. E. de Cae.
Maeseyck	29.36	745.8	29.49	749.1	46.0	7.8	79	WSW	.....	.....	10	.....	10	.....	.....	0.035	0.9	.....	M. Pierrot.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

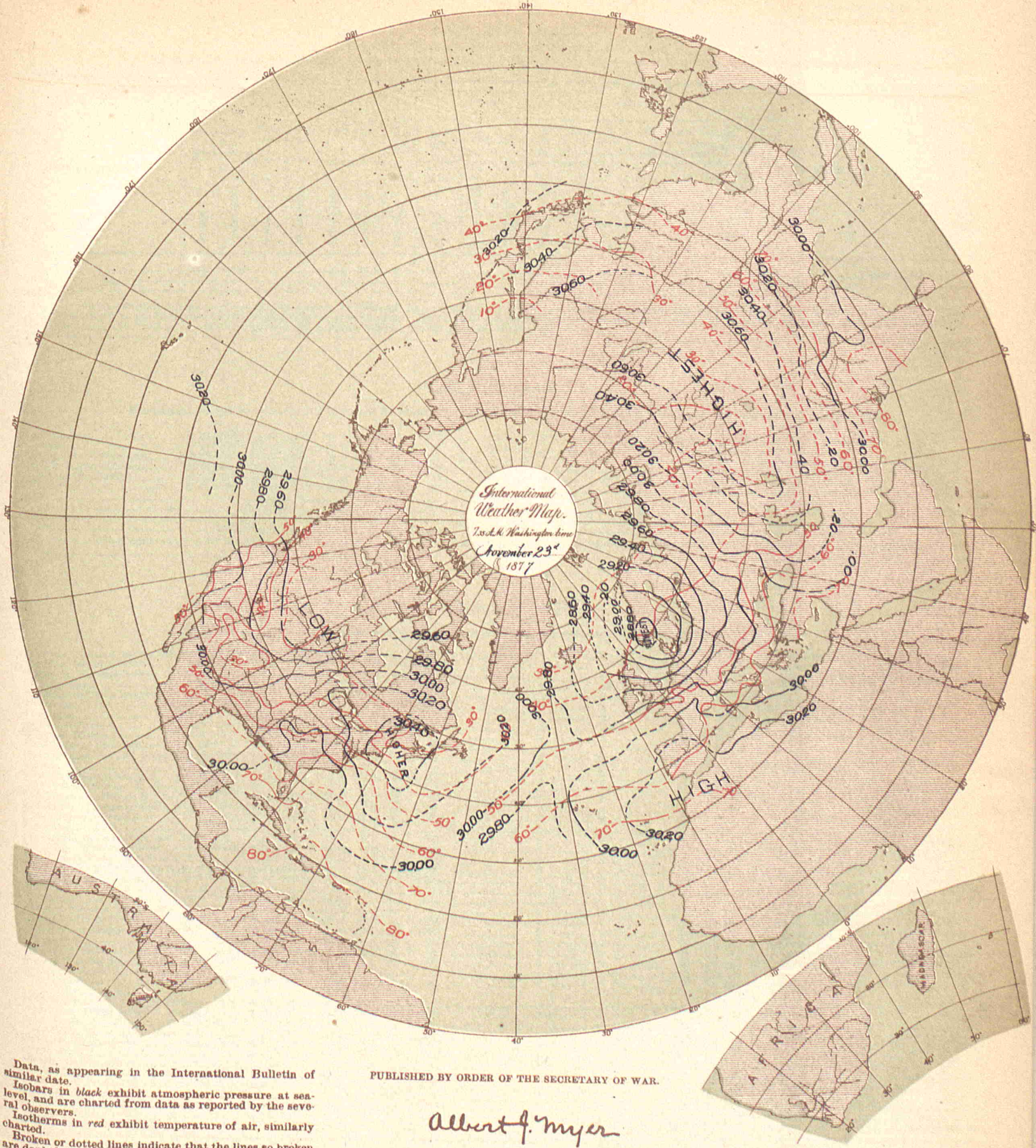
Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	29.22	742.2	29.32	744.7	39.7	4.3	.....	W	27	12.1	.....	.....	6	.....	.....	0.015	0.38	Squally.....	W. Boswell.
Ardrossan	29.42	747.3	29.44	747.8	47	8.3	.....	WNW	.....	.....	6	.....	7	.....	.....	.....	.....	Squally.....	William McNeil.
Armagh, Observatory	.....	.....	29.60	751.8	43.1	6.2	.....	W	15	6.7	.....	.....	4	.....	.....	.....	.....	D. clouds....	S. Call, for Dr. Robinson
Bidston, (Liverpool Obs.)	.....	.....	29.54	750.3	46.1	7.8	.....	W	48	21.5	.....	.....	7	.....	.....	.....	.....	D. clouds....	John Hartnup.
Birr Castle, (Parsonstown)	.....	.....	29.72	754.9	45.8	7.7	.....	WSW	.....	.....	2	.....	2	.....	.....	.....	.....	D. clouds....	J. L. E. Dreyer.
Bradford, Yorkshire	29.08	738.6	29.48	748.8	44.1	6.7	.....	N	.....	.....	6	.....	6	.....	.....	0.71	18.0	D. clouds	J. McLandsborough.
Bridgetown, (Barbados)	29.90	759.4	29.93	760.2	82.0	27.8	.....	NE	.....	.....	2	.....	2	.....	.....	.....	.....	D. clouds....	Pvt. G. W. Roberts, A.
Cambridge, Observatory	.....	.....	29.57	751.1	47.5	8.6	.....	WNW	.....	.....	3	.....	7	.....	.....	.....	.....	D. clouds....	H. Todd. [H. C.
Cardington	.....	.....	29.55	750.6	44.0	6.7	.....	W	.....	.....	3	.....	1	.....	.....	.....	.....	Blue sky.....	John McLaren.
Chatham, School M. E	29.48	748.8	29.61	752.1	48.2	9.0	.....	W	.....	.....	3	.....	2	.....	.....	.....	.....	Blue sky.....	Lt. W. G. Morris, R. E.
Dartmoor	28.34	719.8	29.83	757.7	42.0	5.6	.....	NW	.....	.....	5	.....	3	.....	.....	.....	.....	Showery.....	Alexander Watt.
Davos Platz (Switzerland)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Francis Redford, M. A.
Donaghadee	29.51	749.5	29.54	750.3	43	6.1	.....	W	.....	.....	4	.....	5	.....	.....	.....	.....	D. clouds.....	J. Mac Gowan.
Dover	29.59	751.6	29.61	752.1	47	8.3	.....	WNW	.....	.....	6	.....	2	.....	.....	.....	.....	Squally.....	J. Costello.
Eccles, (near Manchester)	.....	.....	29.53	750.0	45.9	7.7	.....	NW	13.8	6.2	.....	.....	5	.....	.....	.....	.....	Squally.....	Thomas Mackereth.
Falmouth, Observatory	29.64	752.8	29.87	758.7	46.8	8.2	.....	WSW	.....	.....	3	.....	10	.....	.....	.....	.....	Overcast.....	The Staff.
Fort Napier, (Natal)	27.51	698.7	29.73	755.1	72.8	22.7	.....	E	.....	.....	3	.....	7	.....	.....	.....	.....	D. clouds....	Pvt. G. Salmon, A. H. C.
Free Town, (Sierra Leone)	.....	.....	29.88	758.9	87.0	30.6	.....	Calm	.....	.....	0	.....	3	.....	.....	.....	.....	D. clouds....	
Galway, Queen's College	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	30.15	765.8	30.20	767.1	65.2	18.4	.....	SW	.....	.....	4	.....	0	.....	.....	.....	.....	Blue sky.....	Corpl. C. Aitken, A. H. C.
Glasgow, Observatory	29.23	742.4	29.43	747.5	43.1	6.2	.....	WNW	.....	.....	3	.....	4	.....	.....	.....	.....	Blue sky.....	D. G. Maclean.
Great Yarmouth	29.42	747.3	29.42	747.3	47	8.3	.....	WNW	.....	.....	6	.....	3	.....	.....	.....	.....	Squally.....	G. T. Watson.
Greenwich, Royal Obs'y	29.46	748.3	29.63	752.6	47.3	8.5	.....	W	.....	.....	4	.....	3	.....	.....	.....	.....	D. clouds....	The Staff, for G. B. Airy.
Guernsey	29.60	751.8	29.83	757.7	50	10.0	.....	WNW	.....	.....	6	.....	8	.....	.....	.....	.....	Overcast.....	Dr. S. E. Hoskins, F. R. S.
Helston	.....	.....	29.91	759.7	48	8.9	.....	W	.....	.....	2	.....	6k	.....	.....	0.07	1.8	Showery.....	M. P. Moyle.
Holyhead	29.59	751.6	29.65	753.1	45	7.2	.....	W	.....	.....	6	.....	2	.....	.....	.....	.....	Blue sky....	John Tilston.
Jersey	29.58	751.3	29.88	758.9	50.0	10.0	.....	W	.....	.....	6	.....	9	.....	.....	.....	.....	Raining.....	J. Elsher.
Kew, Observatory	.....	.....	29.65	753.1	47.8	8.8	.....	WSW	25	11.2	.....	.....	5	.....	.....	.....	.....	D. clouds....	The Staff.
Kingstown	29.63	752.6	29.66	753.4	44	6.7	.....	W	.....	.....	1	.....	1	.....	.....	.....	.....	Blue sky.....	George Mitchell.
Leicester, Museum	.....	.....	29.56	750.8	47.9	8.8	.....	W	.....	.....	5	.....	2	.....	.....	.....	.....	D. clouds....	Wm. J. Harrison, F. G. S.
Malta, (Mediterranean)	29.94	760.5	30.02	762.5	65.6	18.7	.....	NW	.....	.....	5	.....	8	.....	.....	.....	.....	D. clouds....	Sgt. C. Arbeiter, A. H. C.
Nairn	29.27	743.4	29.36	745.7	40	4.4	.....	NW	.....	.....	4	.....	0	.....	.....	.....	.....	Clear	W. D. Penny.
Nassau, (Bahamas)	.....	.....	29.90	759.4	74.0	23.3	.....	SW	.....	.....	1	.....	8	.....	.....	.....	.....	D. clouds....	C. S. Duncombe.
Nottingham, Observatory	29.36	745.7	29.55	750.6	45.3	7.4	.....	WNW	.....	.....	6	.....	6k;d	.....	WNW	0.225	6.48	D. clouds....	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.04	737.6	29.57	751.1	45.7	7.6	.....	W	.....	.....	6	.....	2	.....	.....	.....	.....	D. clouds....	Rev. Stephen Whitty
Oxford, Radcliffe Obs'y	.....	.....	29.64	752.8	47	8.3	.....	W	.....	.....	5	.....	0	.....	.....	.....	.....	Blue sky.....	F. Lucas
Plymouth	29.74	755.4	29.82	757.4	48.0	8.9	.....	W	.....	.....	2	.....	10	.....	.....	.....	.....	Overcast.....	John Merrifield.
Roche's Point	29.74	755.4	29.78	756.4	46	7.8	.....	W	.....	.....	3	.....	5	.....	.....	.....	.....	Squally.....	W. Kennedy.
Saint Ann's Head	29.58	751.3	29.74	755.4	48	8.9	.....	WNW	.....	.....	5	.....	7	.....	.....	.....	.....	D. clouds....	John C. Walker.
Sandwick Manse, (Orkneys.)	.....	.....	29.27	743.4	39.1	3.9	.....	NW	38	17.0	.....	.....	8	.....	.....	.....	.....	D. clouds....	Rev. C. Clouston, LL. D
Scutari, Cemetery, (Turkey)	.....	.....	29.81	757.2	58.8	14.9	.....	NE	.....	.....	1	.....	10	.....	.....	.....	.....	Gloomy.....	Sergt. W. H. Lyne.
Sheffield	29.24	742.7	29.48	748.8	46.0	7.8	.....	W	.....	.....	3	.....	6	.....	.....	0.02	0.5	D. clouds....	W. F. Cooper.
Silloth Rectory	29.40	746.7	29.43	747.5	46.9	8.3	68	NW	.....	.....	3	.....	1	.....	.....	0	0	D. clouds....	Rev. F. Redford, M. A.
Stonyhurst, Observatory	.....	.....	.....	.....	43.3	6.3	.....	W	.....	.....	4	.....	10	.....	.....	.....	.....	Squally.....	Rev. S. J. Perry.
Stornoway, Lews C., (Hebr.)	.....	.....	29.38	746.2	39	3.9	.....	NW	.....	.....	3	.....	3	.....	.....	.....	.....	D. clouds....	John Smith.
Stratfield Turgiss	29.46	748.3	29.67	753.6	46.8	8.2	.....	W	.....	.....	2	.....	3	.....	.....	.....	.....	Squally.....	Rev. C. H. Griffith, F. M. S.
Thurso	.....	.....	29.27	743.4	42	5.6	.....	NW	.....	.....	6	.....	7	.....	.....	.....	.....	D. clouds....	John Trotter.
Truro, Royal Institution	.....	.....	29.85	758.2	50	10.0	.....	W	.....	.....	8	.....	10	.....	.....	.....	.....	Raining.....	W. Newcombe.
Valencia, Observatory	.....	.....	29.79	756.7	46.9	8.3	.....	W	12	5.4	.....	.....	10	.....	.....	.....	.....	Showery.....	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Henry Mercer.
Cape Good Hope, Obs'y	29.86	758.4	29.90	759.4	80.0	26.7	44	SSE	13	5.8	.....	0	0	.....	.....	.....	.....	.....	The Staff, for E. J. Stone.
Hobart Town, (Tasmania)	.....	.....	29.68	753.9	61.0	16.1	77	W	.....	.....	2	.....	7k	.....	.....	0	0	.....	Francis Abbott, F. R. A. S.
Leith, Restalrig Park	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Andrew Gibb.
Mauritius, Observatory	29.82	757.4	30.02	762.4	74.2	23.4	88	ENE	4.5	2.0	.....	.....	10	.....	.....	0.28	7.1	Overcast.....	C. Meldrum.
Melbourne, Observatory	29.72	754.9	29.81	757.2	66.0	18.9	44	NE	10	4.5	.....	.....	2	.....	.....	0	0	Fine.....	R. L. J. Ellery.
Monach L't-house, (Hebrides)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Youngclause.
North Unst, (Shetland Is.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m.

Marine Series. Vessels.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea or swell. Height scale 0—9	Sea or swell. Direction from—	Weather.	Observer.
S. S. Algeria, N. 52° 30′, W. 5° 50′	.....	.....	29.70	754.4	48	8.9	.....	W	.....	.....	5	.....	2	.....	.....	0*	.....	D. clouds....	Capt. W. Watson.
S. S. Batavia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. J. E. Mouland.
Ship Camperdown	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. A. T. Miller.
Brig Catherine	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. Adam Smith.
Barque Celeste	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. D. F. McKechnie
S. S. Hibernia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. W. R. Cato
Barque Maroon	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. A. T. Brown.
Ship Mikado	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. C. C. Prehn.
S. S. Seine	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. H. Manning.
Barque Sorata	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. Jas. J. Price.
Schooner Traveller	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. Alex Simpson

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation The barometers and thermometers used by these observers have been generally carefully compared and corrected. *Feet.



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	BAROMETER. Corrected for instrum'tal error and temperature. Inches.	BAROMETER. Corrected for instrum'tal error and temperature. Millimeters.	BAROMETER. Reduced to sea-level. Inches.	BAROMETER. Reduced to sea-level. Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Upper. From—	CLOUDS. Direction. Lower. From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	WEATHER.	OBSERVER.
San José	26.22	666.0			64.4	18.0	88	SE			1	3pc	1k		E	Inap	Inap.		Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	28.84	732.6	28.89	733.8	43.9	6.6	91	SW			2		5						
Fanöe	28.86	733.0	28.88	733.5	44.4	6.9	88	W			4		9						
Godthaab, (Greenland)	29.67	753.6	29.71	754.7	29.3	— 1.5	80	S			5		10						
Stykkisholm, (Iceland)	29.71	754.5	29.75	755.6	22.1	— 5.5	98	NE			7		5						
Thorshavn, (Faröe)	29.38	745.0	29.37	745.9	34.3	1.3	76	N			4		6						
Vestervig	28.71	729.2	28.88	733.5	43.9	6.6	94	W			2		5						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

Alençon, Normal School	29.19	741.4	29.74	755.4	48.2	9	81	W			3		5		N	0.110	2.8	Cloudy	Collignon, Director.
Amiens, Normal School	29.60	751.8	29.71	754.6	50.0	10.0	74	W			4		0			0.161	4.6	Clear	Bonvarne, Director.
Avignon, Normal School	29.93	760.1	30.00	762.1	56.5	13.6	60	NNW			1		2		WNW	0.04	1.	Slightly cl'dy	Mr. Giraud, Director.
Bar-sur-Seine	29.31	744.4	29.88	758.9	50.7	10.4	60	SW			2		5kn		WSW	0.083	2.1	Cloudy	C. Saillard.
Beaumette Obs'y (Angers)	29.77	756.2	29.93	760.3	51.6	10.9	65	SW	4.5	2.0					SW	0.020	0.5		Albert Cheux.
Beauvais	29.52	749.7	29.80	757.0	47.8	8.8	75	WNW			4		8		NW	0.167	4.25	Very cloudy	Normal School.
Besançon	29.06	738.0	29.96	761.0	47.8	8.8	76	S			6		2		SW	0.244	6.2	Slightly cl'dy	Normal School.
Bourg-en-Bresse	29.14	740.2	30.06	763.5	49.1	9.5	66	W			2		5n		W	0.583	14.8	Cloudy	Normal School.
Bourges, Normal School	29.43	747.4	29.98	761.4	48.9	9.4	86	SW			4		2		SE	0.244	6.2	Slightly cl'dy	A. Wagner, Director.
Brest, Naval Observatory	29.74	755.4	29.88	759.0	51.6	10.9	70	WNW			4		9		WNW	0.010	0.25		The Staff.
Carcassonne, Normal School	29.68	753.9	30.10	764.6	52.9	11.6	90	W			2		10		W	0.04	1.	Covered	Vateau, Director.
Caen	29.77	756.2	29.85	758.1	48.9	9.4	81	E			1		2		E	0.169	4.3	Slightly cl'dy	Normal School.
Chartres, Normal School	29.31	744.5	29.88	758.9	54.3	12.4	83	NW			4		8		E	0.35	9.		Lequin, Director.
Châlons-sur-Marne, N. Sch'l	29.47	748.6	29.83	757.7	53.2	11.8	48	SW			4		5k		SW	0.256	6.5	Cloudy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.64	727.5	30.00	762.0	53.6	12.0	52	W			2		5		W	0.118	3.0	Cloudy	Alluard, Director.
Commercy, Normal School	28.95	735.2	29.84	757.9	48.9	9.4	95	W			6		5			0.67	17.	Cloudy	Dr. Goulet, Director.
Commune de Gréasque*	28.87	733 3	30.01	762.3	55.2	12.9	76	NW			4		2		NW	0.04	1.	¼ covered	. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	29.74	755.4	29.96	760.9	51.4	10.8	72	SW			8		8		W	0.197	5.0	Very cloudy	Mouliot, Director.
Le Mans, Normal School	29.61	752.2	29.93	760.1	49.8	9.9	64	NW			4		2		W	0.138	3.5	Slightly cl'dy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.07	738.3	30.00	761.9	49.5	9.7	74	SW			2		5		E	0.098	2.5	Cloudy	Pin, Director.
Lorient, Naval Observatory	29.89	759.1	29.98	761.0	54.3	12.4	90	W			3		5		W	0.354	9.0	½ covered	T. Carré, Director.
Mâcon, Normal School	29.30	744.2	30.01	762.2	48.2	9.0	84	Calm			0		5		W	0	0	Cloudy	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	28.79	731.2	29.84	758.0	46.4	8	70	SW					10		N	0.24	6.	Covered	Normal School.
Nismes, Normal School	29.79	756.7	29.99	761.8	62.2	16.8	66	W			2		2		E	0	0	Slightlycl'dy	Boyer, Director.
Orleans, Normal School	29.47	748.4	29.85	758.2	49.6	9.8	69	SW			4		2		W	0.43	11.	Slightly cl'dy	Bernard, Director.
Paris, Observatory	29.59	751.5	29.83	757.6	50.5	10.3	68	WSW			2		6ck		W	0.139	3.54	Cloudy	National Observatory.
Privas	28.98	736.7	30.01	762.2	49.1	9.5	41	N			2		10		N	0.12	3.	Covered	Normal School
Rochefort, Naval Obs'y	30.01	762.3	30.04	763.1	54.7	12.6	81	W			3		10		W	0.20	5.	Covered	Lt. Decante, Director.
Rouen, Normal School	29.71	754.5	29.79	756.7	49.5	9.7	66	W			3		2		W	0.217	5.5	Slightly cl'dy	F. Lucard, Director.
Tarbes, Normal School																			T. Hugues, Director.
Villefranche	29.26	743.1	29.97	761.3	54.9	12.7	59	W			3		5		W	0.480	12.2	Cloudy	Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.79	756.6	29.82	757.3	80.6	27										0	0		L'Abbé Marchesi.
Marseilles, Observatory			29.97	761.1	61.0	16.1	47	NW			2-3		4			0.010	0.25	Cloudy	The Staff.
Mont-Louis	24.87	631.8	30.15	765.8	51.6	10.9	44	S	9 3	4.17			8		W	0	0		Mr. Falguère.
Nice			29.73	755.1	62.6	17.0	68	SW					1		NE	0	0	Clear	Dr. A. Niepce.
Paris, Montsouris Obs'y	29.55	750.5	29.82	757.5	50.7	10.4	64	WNW			4		6k		NW	0.134	3.4		Marié Davy, Director.
Perpignan			30.07	763.8	58.5	14.7	65	NE	18.6	8.33			3		NW	0	0		Dr. Flues.
Pic du Midi, (Summit,) H. P.	21.23	539.3			20.7	— 1.3		W			6-8		10					Snowy	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.52	571.9			32 0	0.0		SW			6-8		10			0.492	12.5	Snowy	Gen'l de Nansouty.
Saint Maur, (near Paris)	29.67	753.6	29.84	757.8	50.5	10.3	61	WSW			3		7	W		0.051	1.3	Raining	E. Renou.
Toulouse, Observatory	29.43	747.4	30.15	765.8	50.4	10.2	97	WSW			2		9			0.217	5.50	Raining	The Staff.
Tours	29.76	755.8	29.95	760.8	51.8	11.0	80	WNW			2		3		W	0.154	3.9		C. Marquet.
Versailles, (near Paris)			29.83	757.7	51.4	10.8	61	WNW			3		7			0.126	3.21	Fair	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.32	770.1	30.34	770.7	47.7	8.7	96	N	4.7	2.1			10kn		NNE	0.205	5.2	Covered	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; for Montsouris, the barometer reduced to freezing but not to sea-level. At Mirecourt the cloud direction is apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg																			
Berlin	29.07	738.4	29.24	742.7	46.4	8.0	73	SW			7		10						Prof. Dr. Hoh.
Breslau	28.95	735.3	29.47	748.6	48.0	8.9	62	SSW			5		9			0.111	2.82	Raining	Prof. Arndt.
Carlsruhe	29.29	743.9	29.71	754.7	48.9	9.4	59	SW			8		5			0	0		Royal University Obs'y.
Cassel	28.84	732.5	29.43	747.6	47.5	8.6	65	WSW			8		8	WSW		0	0		Albert Senz.
Crefeld	29.28	743.8	29.44	747.8	48.2	9.0	65	W			7		8			0.472	11.97		Dr. H. Möhl.
Emden	29.08	738.7	29.12	739.6	43.0	6.1	100	W			8		9			0.12	3.		Director Lose.
Frankfort on the Main	29.23	742.4	29.60	751.7	46.0	7.8		W			5		5			0.157	4.0		Prof. Prestel.
Friedrichshafen	28.43	722.0	29.89	759.3	41.4	5.2	97	WSW			9		6	W		0.244	6.2		Physical Society.
Hamburg	29.02	737.2	29.10	739.0	43.9	6.6	91	WSW			6		10			0.236	6.0		M. Wilhelm.
Kiel	28.97	735.8	28.98	736.2	45.0	7.7	84	SW			5		10			0.217	5.5	Squally	Captain F. Hegemann.
Königsberg, (Prussia)	29.16	740.7	29.24	742.7	44.6	7.0	77	SW								0.295	7.51		Prof. G. Karsten.
Köslin			29.11	739.4	44.2	6.8		SW			6		4					Fair	Prof. E. Luther.
Leipsic, Observatory	28.98	736.2	29.41	746.9	46.8	8.2	65	SW			5		8	SW		0.114	2.9		H. Müller.
Memel, Naval School	29.15	740.4	29.19	741.5	45.5	7.5	83	S			3		10cs;ks	SW		0.169	4.3	Stormy	Prof. Bruhns.
Neufahrwasser	29.19	741.4	29.21	741.8	46.6	8.1	75	SSW			5		10						Reinbrecht von Skalweit.
Posen	29.08	738.6	29.38	746.2	46.0	7.8	81	SW			6–7		10			0.024	0.6		A. Lothes.
Strassburg Obs., (in Alsace	29.26	743.2	29.81	757.2	48.6	9.2	61	W			4		3	W				Cloudy	Dr. Magener.
Stuttgart	28.78	731.0	29.72	755.0	47.7	8.7	56	W			5		5	W		0.113	2.88	Raining	Dr. Schur.
Treves, (Trier)	29.05	737.9	29.57	751.0	47.5	8.6	69	W			7		8			0.059	1.5	Rainy	Prof. Schoder.
Weissenburg, (Bavaria)	28.16	715.3	29.68	753.8	44.8	7.1	59	W	27	12			6ck		W	0.060	1.53		Prof. Flesch.
Wustrow, Naval School	29.04	737.6	29.09	738.9	43.7	6.5	87	SSW			6		8			0.201	5.1	Squally	Dr. Von Bebber.
																		Cloudy,	E. F. Schütz.
German Naval Series.																			

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet: Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4, Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.44	747.7	29.83	757.6	61.9	16.6		SE										½ Clear	Dr. J. F. J. Schmidt.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and wind-force; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.86	758.5	29.91	759.8	73.9	23.3	57	W	17.0?	7.6?			6		W	0.02	0.5	D. clouds	
Deesa	29.45	748.0	29.92	760.0	85.1	29.5	40	Calm					2	SSW		0	0	D. clouds	
Bombay	29.88	758.8	29.91	759.8	82.5	28.1	70	WNW	7.0	3.1			0			0	0	Blue sky	
Poona	27.90	708.8	29.90	759.3	82.2	27.9	52	NE					0			0	0	Blue sky	
Lahore	29.24	742.6	30.01	762.2	65.3	18.5	84	N	3.4	1.5			10			0.14	3.6	Overcast	
Belgaum	27.41	696.2	29.95	760.7	77.4	25.2	52	E	1.0	0.4			1			0	0	D. clouds	
Bangalore																			
Roorkee	29.07	738.4	29.99	761.7	72.4	22.4	55	S	2.1	0.9			2			0	0		
Agra	29.40	746.8	29.97	761.3	77.7	25.4	50	W								0	0		
Trichinopoly																			
Nagpur	28.94	735.1	29.99	761.8	77.6	25.3	45	NE	3.1	1.4			0			0	0	Blue sky	
Madras																			
Lucknow	29.62	752.3	30.00	761.9	74.3	23.5	63	SW	0.5	0.2			0			0	0	Blue sky	
Allahabad	29.67	753.7	29.99	761.8	71.4	21.9	61	Calm	0.4	0.2			0			0	0	Blue sky	
Patna	29.86	758.4	30.04	763.0	78.7	25.9	58	E	0.9	0.4			0			0	0	Blue sky	
Hazaribagh	27.97	710.5	30.02	762.4	72.6	22.6	60	E	2.6	1.2			2	E	E	0	0		
Cuttack	29.90	759.4	29.98	761.5	78.0	25.6	64	ENE	1.0	0.4			0			0	0	Blue sky	
Calcutta (Alipore)	30.00	761.9	30.02	762.4	72.9	22.7	79	N	1.0	0.4			1			0	0	Blue sky	
Goalpara	29.62	752.3	30.01	762.3	74.8	23.8	70	Calm	2 3	1.0			0			0	0	Blue sky	
Chittagong	29.93	760.1	30.02	762.5	75.0	23.9	74	Calm	0.5	0.2			0			0	0	Blue sky	
Sibsagar	29.72	754.8	30.06	763.6	70.8	21.6	85	Calm	1.0	0.4			0			0	0	Blue sky	
Rangoon													3			0	0	Blue sky	
Jubbulpore	28.63	727.2	30.02	762.5	72.3	22.4	63	SE	1.2	0.5			0			0	0	Blue sky	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 1—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	21.94	557.3	29.89	759.3	19.4	— 7.0	91	SW			6		6	NW		0	0		Ab. Dom. Morgini.
Stelvio	21.87	555.5	29.84	758.0	25.7	— 3.5		WNW			1		6			0	0		Signora Ernesta Manfredi.
Udine	29.34	745.3	29.76	755.9	44.6	7.0	82	NE	0.7	0.3			6			0	0		Prof. Giovanni Clodig.
Padua	29.67	753.5	29.78	756.3	43.7	6.5	67	NNW	3.8	1.7		10		W		0	0		Prof. Dott. Lorenzoni.
Vicenza	29.58	751.4	29.78	756.4	45.7	7.6	56	SW	0	0		2		W		0	0		Conte Alm. Da Schio.
Verona	29.55	750.6	29.78	756.3	48.2	9.0	71	SW	0	0		10				0	0		Dott. B. Bertoncelli.
Bergamo	28.46	722.8	29.80	756.9	47.1	8.4	65	SW			2	0				0	0		Prof. Trionfini Carlo.
Domodossola	28.78	730.9	29.82	757.5	54.0	12.2	33	N			6	1				0	0		Prof. Giuseppe Calza.
Milan	29.31	744.4	29.84	757.9	48.9	9.4		W			6	2		WNW		0	0		Ab. Gio. Capelli.
Pavia	29.46	748.3	29.82	757.5	46.4	8.0	47	W			4	0				0	0		Prof. Gio. Cantoni.
Moncalieri	28.91	734.2	29.83	757.6	45.0	7.2	39	ESE	4.3	1.9		1				0	0		Prof. P. F. Denza.
Mondovi	27.88	708.0	29.81	757.1	45.3	7.4	37	N			2	0				0	0		Prof. D. C. Bruno.
Porto Maurizio	29.58	751.4	29.80	757.0	57.6	14.2	61	ESE			2	1				0	0		Prof. L. Vassallo.
Genoa	29.61	752.1	29.78	756.4	59.7	15.4	51	E	0.7	0.3		0				0	0		Prof. G. M. Garibaldi.
Piacenza	29.55	750.5	29.81	757.1	45.1	7.3	80	NW	10.5	4.7		0				0	0		Dott. G. Manzi.
Parma	29.50	749.2	29.82	757.5	48.9	9.4	57	SSW			4	1				0	0		Prof. P. Pigorini.
Florence	29.52	749.8	29.78	756.4	47.8	8.8	93	E			2	10				0.165	4.2		Cav. F. Meucci.
Leghorn	29.71	754.5	29.79	756.7	59.0	15.0	74	W	16.1	7.2		10		W		0.575	14.6		Prof. P. Monte.
Siena	28.58	726.0	29.80	757.0	51.1	10.6	95	SW	5.6	2.5		10		SW		0.272	6.9		Prof. L. Toscani.
Urbino	28.24	717.4	29.82	757.3	51.3	10.7	68	NW			4	10				0	0		Prof. P. Serpieri.
Pesaro					48.4	9.1	85	NE	0	0		10		W		0	0		Prof. Luigi Guidi.
Ancona	29.79	756.6	29.89	759.3	53.6	12.0	68	SE			4	10				0	0		Prof. F. DeRosis.
Grosseto	29.72	754.9	29.84	757.8	57.2	14.0	85	WSW			2	7		S		0	0		Avv. P. Ponticelli.
Rome	29.71	754.5	29.88	759.0	58.1	14.5	89	SSW	7.4	3.3		10				0.035	0.9		Prof. P. A. Secchi.
Naples, O. U.	29.75	755.7	29.95	760.8	61.2	16.2	81	SW			4	10		SW		0.098	2.5		Prof. L. Palmieri.
Lecce	29.71	754.5	29.96	761.0	59.5	15.3	53	WSW	7.4	3.3		2				0	0		Prof. C. De Giorgi.
Cosenza	29.68	753.6	29.98	761.4	53.6	12.0	74	SE	1.8	0.8		8				0	0		Prof. F. D. Conti.
Cagliari																			Prof. A. Pacinotti.
Riposto, (Sicily)					60.8	16.0	61	SW			2	5		S		0	0		Prof. F. Cafiero.
Palermo	29.73	755.2	29.99	761.7	61.0	16.1	64	WSW	5.6	2.5		10				0	0		Prof. G. Cacciatore.
Caltanissetta	28.62	711.8	29.98	761.4	62.9	11.6	67	WNW			6	6		S		0	0		Prof. A. Pagani.
Syracuse	29.89	759.1	29.96	761.0	61.7	16.5	54	NW			1	4		NW		0	0		Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.41	747.0	29.97	761.1	56.7	13.7	81	ESE	4.3	1.9		10				0.063	1.6		Prof. F. Brioschi.

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,643.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo 379.6 m., or 1,245.3 ft.; Moudovi, 556 m., or 1,824.2 ft.; Siena, 348.5 m., or 1,143.3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Tokei (Yeddo)																			The Observatory.
Tokei (Yeddo) University	30.11	764.7	30.21	767.3	54	12.2	93	NNW	3	1.3			10n			0.02	0.5	Light rain	Prof P. V. Veeder.

MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Señor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Aguascalientes																			I. N. Marin, M. D.
Córdoba																			C. Peña, M. D.
Cuernavaca																			L. Castillo, A. E.
Guadalajara																			Prof. L. Perez.
Guanajuato																			Prof. V. Fernandez.
Leon																			Prof. M. Leal.
Mexico	29.14	587.7	30.24	768.2	47.3	8.5	71	Calm	0	0		0	0			0	0	Fair	Central Observatory.
Orizaba																			N. N.
Orizaba																			I. Orozco, M. D.
Pabellon, (Aguascalts)																			M. V. de Leon, M. E.
Puebla																			Prof. B. Gonzales.
Toluca																			Prof. C. Velazquez.
Tlacotalpam																			Prof. F. R. Bayly.
San Luis Potosi																			G. Barroeta, M. D.
Vera-Cruz																			Prof. J. Rossell.
Zacatecas																			J. A. Bonilla, M. E.
Puebla, (Catholic Institute)																			P. Spina. {M. M. D. D.
Morelia																			M. Tena, F. L. Páramo.

Note.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,290 m., or 7,512.9 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,626 m., or 8,611.8 ft.; San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,490 m., or 8,168.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	29.54	750.4	29.54	750.4	49.1	9.5		W			6					0.020	0.5		
Groningen	29.08	738.5	29.13	739.9	45.5	7.5		WNW			6					0.189	4.8		
Helder	29.25	743.0	29.25	743.0	48.6	9.2		W			7					0.114	2.9		
Hellevoetsluis			29.45	748.1	48.0	8.9	72	W			7								
Utrecht	29.36	745.8	29.41	747.0	46.8	8.2	72	WSW			6		8			0.201	5.1	Very cloudy	H. v d Brink.

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	28.73	729.7	28.78	731.1	41.0	5 0	94	S	7.4	3.3	.....	.....	4	.....	.....	0.039	1.0	.....	
Brönö	28.82	732.0	28.86	733 0	37.8	3.2	63	NE	7	3	.....	.....	8	.....	.....	0	0	.....	
Christiania	28.63	727.1	28.78	730.9	36.9	2.7	84	NE	0	0	.....	.....	10	.....	.....	0.339	8.6	.....	
Tromsö	28.99	736.3	29.03	737.4	31.3	— 0.4	78	Calm	0	0	.....	.....	0	.....	.....	0	0	.....	

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	29.90	759.5	30.09	764.3	65.1	18.4	92	SE	4.9	2.2	.....	8	.....	.....	.....	0	0	.....	Dr. J. A. Sampaio.
Campo Major	29.27	743.5	30.30	769.7	58.8	14.9	68	SE	4.3	1.9	.....	3	E	.....	.....	0	0	.....	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.15	765.7	30.23	767.9	69.6	20.9	59	E	9.8	4.4	.....	7	.....	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.95	760.8	30.31	769.9	59.5	15.3	70	SSW	6.3	2.8	.....	9	.....	.....	.....	0	0	.....	The Staff.
Ponta Delgada, (Azores)	30.06	763.5	30.13	765.3	69.1	20.6	80	SE	6.3	2.8	.....	3	.....	.....	.....	0	0	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

Naval Series. Vessels.	Sea or swell. Height scale 0–9	Sea or swell. Direction from—		
S. S. India.	.....	.....	.....	A. D. Pedroso, Com'd't. Lt. S. A. P. de Mirando
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.01	736.9	29.44	747.7	43.7	6.5	81	SSW	18	8	.....	.....	9	.....	.....	.....	.....	.....	Astronomical Obs.
Wilna	28.98	736.0	29.40	746.7	42.8	6.0	96	S	4	2	.....	.....	10	.....	.....	.....	.....	Raining	Astronomical Obs.
Dorpat	29.03	737.3	29.28	743.6	39.6	4.2	90	S	7	3	.....	.....	10	.....	.....	.....	.....	.....	Prof. Dr. Weihrauch.
St. Petersburg	29.28	743.8	29.30	744.2	37.8	3.2	91	S	16	7	.....	.....	10	.....	.....	.....	.....	Raining	Central Physical Obs.
Kuopio	28.79	731.3	29.12	739.6	32.9	0.5	100	S	13	6	.....	.....	10	.....	.....	.....	.....	Snowing	Ch. Forsten.
Kieff	29.06	738.0	29.70	754.4	43.5	6.4	96	SW	9	4	.....	.....	10	.....	.....	.....	.....	.....	Physical Cabinet.
Nikolaiev	29.60	751.8	29.67	753.6	50.4	10.2	93	SW	0	0	.....	.....	10	.....	.....	.....	.....	.....	Kurdakof.
Kertch	29.94	760.4	29.96	760.9	60.1	15.6	84	NE	2	1	.....	.....	8	.....	.....	.....	.....	Light clouds	Lagorio.
Moscow	29.24	742.7	29.60	756.9	38.5	3.6	90	S	9	4	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Lugan	29.68	753.8	29.88	759.0	52.3	11.3	71	ESE	2	1	.....	.....	2	.....	.....	.....	.....	.....	Meteorological Obs.
Archangel	29.51	749.6	29.53	750.1	33.4	0.8	96	SSE	13	6	.....	.....	10	.....	.....	.....	.....	.....	Ogorodnikof.
Tiflis	28.86	732.9	30.31	769.8	47.5	8.6	58	SE	4	2	.....	.....	7	.....	.....	.....	.....	Light clouds	Physical Observatory.
Astrakhan	30.36	770.8	30.26	768.7	44.2	6.8	78	ESE	25	11	.....	.....	10	.....	.....	.....	.....	.....	Sebastianof.
Kasan	29.83	757.7	30.11	764.9	30.9	— 0.6	89	S	8	4	.....	.....	10	.....	.....	.....	.....	.....	Physical Cabinet
Orenburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Ischernischei.
Ekaterinburg	29.30	744.3	30.29	769.3	35.1	1.7	66	W	22	10	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Nukuss	30.32	770.2	30.57	776.5	32.5	0.3	52	NNE	16	7	.....	.....	0	.....	.....	.....	.....	.....	
Kasaly	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Bobrof.
Tashkend	28.76	730.5	30.59	776.9	30.6	— 0.8	92	Calm	0	0	.....	.....	10	.....	.....	.....	.....	.....	Michelson.
Barnaul	30.17	766.2	30.73	780.6	20.5	— 6.4	90	WSW	4	2	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Yeniseisk	30.12	765.1	30.47	773.8	23.5	— 4.7	96	SW	4	2	.....	.....	10	.....	.....	.....	.....	Snowing	Marks.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Usolzef.
Oorga	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Mossin.
Peking, (China)	30.38	771.7	30.52	775.3	36.5	2.5	50	Calm	0	0	.....	.....	3	.....	.....	.....	.....	.....	Physical Observatory.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nikolaievsk, on the Amoor	.....	.....	.....	.....	3.2	—16.0	81	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 405 meters, or 1,341.8 feet; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft. At Ekaterinburg the latest levellings show that the altitude of the barometer has always been 267 m., or 875.9 ft., instead of 306.4? m., or 1,005.2? ft.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Rave, Director.
Bilbao, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Manuel de Naveran
Burgos, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Domingo Martin y Perez.
Madrid, Royal Observatory	27.99	710.9	30.26	768.6	51.3	10.7	72	S	5.2	2.33	.....	1	0	WNW	.....	0	0	Almost clear	The Staff.
Murcia, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Olayo Diaz, Director.
Santiago, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.90	759.5	29.97	761.2	71.7	22.1	81	Calm	0	0	.....	0	7k	.....	NE	0.764	19.4	Cloudy	Benito Vines, S. J.
San Fernando, Naval Obs'y.	30.20	767.0	30.30	769.6	61.0	16.1	62	WNW	8.6	3.9	.....	0	1	.....	NW	0	0	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.	.....	.....	29.81	757.1	77.7	25.4	87	S	0	0	.....	3s	0	.....	.....	0.354	9.00	Clear	Leonardo de Tejeda, Chief of Engineers.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the cöoperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.03	737.4	29.07	738.4	33 8	1.0	.....	SE	.....	.....	4	.....	10	.....	.....	.....	.....	Raining	
Umea	28.91	734.2	28.96	735.5	38.1	3.4	100	SSE	.....	.....	2	.....	10	.....	.....	0.295	7.5	Raining	
Hernosand	28.79	731.2	28.84	732.5	39.2	4.0	97	SE	.....	.....	2	.....	10	.....	.....	0.280	7.1	.....	
Stockholm	28.68	728.5	28.86	733.0	42.8	6.0	85	SW	.....	.....	4	.....	10	.....	.....	0.120	3.2	.....	
Wisby	28.89	733.9	28.95	735.4	43.5	6.4	83	SW	.....	.....	6	.....	7	.....	.....	0.287	7.3	.....	
Sub-Series.																			
Upsala	28.78	731.0	28.85	732.9	41.7	5.4	93	S	10.1	4.5	.....	.....	10	.....	.....	0.104	2.65	.....	Dr. Hildebrandsson.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.58	725.8	30.02	762.5	47.5	8.6	53	SSW	.....	.....	2	.....	9	.....	.....	0.669	17.0	Covered	The Observatory.
Zurich	28.27	718.1	29.04	760.5	45.0	7.2	71	W	.....	.....	4	.....	3	.....	W	.....	.....	Raining.....	The Observatory.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—For Geneva the corresponding departures from the normal values are: Barometer, —0.8 mm; Thermometer, +3.2 cent.; Relative Humidity, —25 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	29.88	759.0	61.7	16.5	80	NE	2	1.0	.....	.....	10	.....	SW	0	0	.....	The Observatory.
Fao, (Persian Gulf)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Salonica	.....	.....	29.87	758.7	62.2	16.8	.....	SE	.....	.....	1	.....	0	.....	.....	.....	.....	.....	B. Stefanidès.
Valona	.....	.....	29 95	760.8	68.4	20.2	.....	W	.....	.....	1	.....	2	.....	.....	0	0	Slightly cl'dy	A. Bertraud.
Varna	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Imperial Observatory.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.80	756.9	29.92	759.9	71.1	21.7	63	NW	.....	.....	1	.....	7ks	.....	SW	0	0	D. clouds.....	Prof. C. V. A. Van Dyck

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	30.37	771.4	30.44	773.2	25.5	— 3.6	91	Calm	0	0	.....	0	.....	.....	.....	.....	.....	.....	Hon. J. Ferguson.
Brockville, Ontario	.....	.....	30.39	771.9	39	3.9	.....	S	1	0.4	.....	.....	10s	.....	S	0.27	6.9	Light rain....	W. R. Bigg.
*Chatham, N. B	.....	.....	30.44	773.2	23	— 5.0	93	SW	2	0.9	.....	8ck	2ks	SW	SW	0	0	Fair	G. A. Blair.
Charlottetown, P. E. Island.	.....	.....	30.43	772.9	29	— 1.7	94	Calm	0	0	.....	5c	0	Calm	.....	0	0	Fair.....	H. J. Cundall, C. E.
Cornwall, Ontario	30.15	765.8	30.35	770.9	37.2	2.9	90	NE	.....	.....	1	.....	10n	.....	.....	0.256	6.40	Drizzling.....	James Smith, M. A.
Dalhousie, N. B	30.44	773.2	30.47	773.9	27.9	— 2.8	86	SW	.....	.....	2	.....	.....	.....	.....	0	0	Clearing.....	H. A. Johnson.
Esquimault, B. C	29.51	749.5	30.56	776.2	42 1	5.6	97	W	.....	.....	.....	9k	0	.....	.....	0.74	18.8	Rainy.....	W. H. Bevis.
*Father Point, Quebec	.....	.....	30.49	774.4	32	0.0	99	SW	8	3.6	.....	.....	10s	.....	SW	Inap.	Inap.	Cloudy.....	J. McWilliams.
Fredericton, N. B	30.49	774.4	30.52	775.2	26.3	— 3.2	93	W	4.0	1.8	.....	2ks	0	.....	.....	0	0	Fair.....	Prof. Harrison.
*Fort Garry, Manitoba	.....	.....	29.56	750.8	34	1.1	79	SW	15	6.7	.....	.....	10n	.....	.....	0	0	Cloudy.....	James Stewart.
Goderich, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	H. J. Strang, M. A
Granton, Ontario	29.07	738.4	30.20	767.1	41	5.0	100	E	.....	.....	1	.....	10n	.....	.....	0	0	Cloudy.....	James Grant.
*Halifax, N. S	30.27	768.8	30.42	772.7	28	— 2.2	79	W	3	1.3	.....	2ks	2ks	NW	NW	0	0	Fair	F. Allison, M. A.
Hamilton, Ontario	29.91	759.7	30.20	769.4	45.2	7.3	93	E	.....	.....	2	10cs	.....	E	.....	0	0	Misty.....	Geo. Dickson, M. A
Heart's Content, N. F	30.21	767.3	30.24	768.1	33	0.6	89	NE	.....	.....	1	.....	10	.....	.....	0	0	Overcast	E. Weedon.
*Kingston, Ontario	30.02	762.5	30.37	771.4	40	4.4	93	NE	2	0.9	.....	.....	Fog	.....	NE	0.34	8.6	Light rain....	S. Woods, M. A.
Little Glace Bay, N. S	30.34	770.6	30.38	771.6	37.0	2.8	93	NW	4	1.8	.....	4c	.....	W	.....	0	0	Fair	C. H. Rigby.
*Montreal, Quebec	30.22	767.6	30.42	772.7	36	2.2	99	S	4	1.8	.....	.....	Fog	.....	.....	0.22	5.6	Foggy	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.50	751.6	30.31	769.9	37	2.8	90	NE	2	0.9	.....	.....	10n	.....	NE	0.13	3.3	Cloudy	Rev. R. Mosley.
Peterboro, Ontario	29.54	750.3	30.32	770.1	39.7	4.3	95	NE	.....	.....	1	.....	10n	.....	.....	0	0	Misty.....	J. F. Jeffers, B. A.
Port Dover, Ontario	29.52	749.8	30.23	767.8	43	6.1	100	NE	5	2.2	.....	.....	10n	.....	NE	0.04	1.0	Light rain....	H. Morgan.
Port Hastings, N. S	30.35	770.9	30.40	772.1	40.6	4.8	.....	N	4	1.8	.....	.....	.....	.....	.....	0	0	Fine.....	Peter Grant.
Port Stanley, Ontario	29.55	750.6	30.21	767.3	44	6.7	98	E	5	2.2	.....	.....	10n	.....	SE	0.10	2.5	Cloudy.....	M. Payne.
*Quebec, Quebec	30.15	765.8	30.49	774.4	34	1.1	79	Calm	0	0	.....	.....	10n	.....	Calm	0	0	Cloudy.....	Capt. Ashe, R. N
*Rockliffe, Ontario	29.89	759.2	30.37	771.4	35	1.7	97	Calm	0	0	.....	.....	10n	.....	.....	0.07	1.8	Light rain...	W. H. McIntyre.
St. John, N. B	30.32	770.1	30.49	774.4	27	— 2.8	94	Calm	0	0	.....	10k	0	.....	.....	0	0	Cloudy.....	G. Murdock, C. E.
*Saugeen, Ontario	29.53	750.0	30.26	768.3	40	4.4	91	Calm	0	0	.....	.....	10s	.....	.....	0.05	1.3	Cloudy.....	K. Stewart.
Stayner, Ontario	.....	.....	30.29	769.4	39	3.9	82	Calm	0	0	.....	.....	Fog	.....	.....	Inap.	Inap.	Foggy	R. J. Cole.
Stratford, Ontario	28.92	734.6	30.23	767.8	40.0	4.4	99	SE	7.0	3.1	.....	.....	Fog	.....	.....	0.280	7.11	Foggy	C. J. MacGregor, M. A.
*Sydney, C. B	30.36	771.1	30.39	771.9	30	— 1.1	91	S	1	0.4	.....	2c	0	.....	.....	0	0	Clear	T. C. Hill.
*Toronto, Ontario	29.88	758.9	30.28	769.1	43	6.1	99	E	3	1.3	.....	.....	Fog	.....	.....	0.06	1.5	Cloudy.....	Magnetic Observatory.
Windsor, N. S	30.34	770.6	30.43	772.9	31.0	— 0.6	89	Calm	0	0	.....	3cs	0	.....	.....	0	0	Clear.....	Prof. John E. Oram.
Woodstock, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Montgomery.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	31.5	— 0.3	84	NE	.....	.....	.....	Sm'o	Sm'o	.....	.....	Inap.	Inap.	Cloudy.....	John Delany.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er. 0—10.	Clouds. Amount. Low'r. 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	30.19	766.8	30.43	772.9	40	4.4	83	Calm	0	0	.....	.....	10s	.....	Calm	0.10	2.5	Cloudy	
Alpena, Michigan	29.59	751.6	30.26	768.6	39	3.9	72	SE	5	2.2	.....	.....	10s	.....	SE	0.01	0.3	Cloudy	
Atlantic City, New Jersey	30.28	769.1	30.30	769.6	53	11.7	93	E	20	8.9	.....	.....	10s	.....	NE	0	0	Cloudy	
Augusta, Georgia	29.65	753.1	29.83	757.7	58	14.4	94	NW	5	2.2	.....	.....	10n	.....	NW	0.19	4.8	Light rain	
Baltimore, Maryland	30.23	767.8	30.28	769.1	50	10.0	100	E	8	3.6	.....	.....	10s	.....	NE	0.10	2.5	Threatening	
Barnegat, New Jersey	30.21	767.3	30.33	770.4	53	11.7	86	E	18	8.0	.....	10ck	0	Calm	.....	0	0	Cloudy	
Bismarck, Dakota	27.74	704.6	29.43	747.5	28	— 2.2	77	Calm	0	0	.....	0	1s	.....	Calm	0	0	Clear	
Boise City, Idaho	26.93	684.0	29.52	749.8	41	5.0	91	SW	4	1.8	.....	.....	10n	.....	Calm	0.56	14.2	Heavy rain	
Boston, Massachusetts	30.32	770.1	30.49	774.4	38	3.3	81	SW	1	0.4	.....	8ck	Sm'e	W	.....	0	0	Fair	
Brackettville, Texas	28.87	733.3	29.91	759.7	48	8.9	42	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Breckenridge, Minnesota	28.69	728.7	29.69	754.1	35	1.7	80	SE	25	11.2	.....	.....	10ks	.....	Calm	0	0	Cloudy	
Brownsville, Texas	30.00	762.0	30.07	763.8	64	17.8	89	E	2	0.9	.....	5c	0	Calm	.....	0	0	Fair	
Buffalo, New York	29.50	749.3	30.22	767.6	43	6.1	100	NE	5	2.2	.....	.....	10n	.....	Calm	0.13	3.3	Light rain	
Burlington, Vermont	30.16	766.1	30.45	772.9	42	5.6	100	S	2	0.9	.....	.....	10s	.....	Calm	0.19	4.8	Cloudy	
Cairo, Illinois	29.71	754.6	30.11	764.8	44	6.7	84	N	15	6.7	.....	.....	10s	.....	Calm	0	0	Cloudy	
Camp Grant, Arizona	25.10	639.8	29.90	761.7	46	7.8	13	NE	.....	.....	1	0	0	.....	.....	0	0	Clear	
Camp Verde, Arizona	26.79	680.4	30.28	769.1	30	— 1.1	57	NW	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Campo, California	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Cape Hatteras, N. Carolina	29.98	761.5	29.99	761.7	64	17.8	83	SE	20	8.9	.....	5k	5s	SE	SE	0.03	0.8	Cloudy	
Cape Henry, Virginia	30.07	763.8	30.10	764.5	57	13.9	94	E	20	8.9	.....	.....	10s	.....	Calm	0.01	0.3	Cloudy	
Cape Lookout, N. Carolina	29.96	761.0	29.98	761.5	66	18.9	90	SE	32	14.3	.....	.....	10s	.....	SE	2.48	63.0	Threatening	
Cape May, New Jersey	30.23	767.8	30.26	768.6	55	12.8	87	E	14	6.3	.....	.....	10s	.....	E	0.27	6.9	Cloudy	
Charleston, South Carolina	29.77	756.1	29.84	757.9	66	18.9	94	S	6	2.7	.....	.....	10s	.....	S	0.15	3.8	Cloudy	
Cheyenne, Wyoming	23.80	604.5	29.74	755.4	36	2.2	52	SW	2	0.9	.....	5c	0	Calm	.....	0	0	Fair	
Chicago, Illinois	29.43	747.3	30.13	765.3	42	5.6	83	E	4	1.8	.....	.....	10s	.....	Calm	0	0	Cloudy	
Cincinnati, Ohio	29.38	746.2	30.02	762.5	49	9.4	93	N	4	1.8	.....	.....	10n	.....	N	0.08	2.0	Light rain	
Cleveland, Ohio	29.44	747.8	30.17	766.3	45	7.2	92	Calm	0	0	.....	.....	10s	.....	Calm	0.10	2.5	Cloudy	
Concho, Texas	28.09	713.5	29.81	757.2	40	4.4	71	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Corsicana, Texas	29.59	751.6	30.07	763.8	46	7.8	85	Calm	0	0	.....	Haze	0	Calm	.....	0	0	Clear	
Davenport, Iowa	29.54	750.3	30.20	767.1	37	2.8	80	SE	4	1.8	.....	.....	10s	.....	Calm	0	0	Cloudy	
Denison, Texas	29.27	743.4	30.09	764.3	41	5.0	91	NE	1	0.4	.....	2c	0	W	.....	Inap.	Inap.	Fair	
Denver, Colorado	24.55	623.6	29.77	756.1	33	0.6	79	SW	5	2.2	.....	0	5s	.....	Calm	0	0	Fair	
Detroit, Michigan	29.46	748.3	30.15	765.8	43	6.1	100	NE	6	2.7	.....	.....	Fog	.....	Calm	0.01	0.3	Foggy	
Dodge City, Kansas	27.32	693.9	29.68	753.9	30	— 1.1	84	S	5	2.2	.....	0	5s	.....	S	0	0	Fair	
Dubuque, Iowa	29.46	748.3	30.18	766.6	36	2.2	80	S	2	0.9	.....	.....	10s	.....	Calm	0	0	Cloudy	
Duluth, Minnesota	29.33	745.0	30.01	763.0	31	— 0.6	89	NW	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Eagle Pass, Texas	29.26	743.2	30.02	762.5	43	6.1	83	Calm	0	0	.....	0	Fog	.....	Calm	0	0	Clear	
Eastport, Maine	30.40	772.1	30.48	774.2	32	0.0	79	NW	8	3.6	.....	8ck	0	SW	.....	0	0	Fair	
Erie, Pennsylvania	29.41	747.3	30.16	766.1	48	8.9	92	E	4	1.8	.....	.....	10n	.....	.....	0.05	1.3	Light rain	
Escanaba, Michigan	29.56	750.8	30.24	768.1	38	3.3	63	S	8	3.6	.....	.....	10s	.....	S	0	0	Cloudy	
Florence, Arizona	28.40	721.3	30.00	762.0	45	7.2	60	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Fort Bayard, New Mexico	24.04	610.6	30.04	763.0	37	2.8	29	NE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Fort Craig, New Mexico	25.54	648.7	.....	.....	25	— 3.9	62	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Fort Gibson, Indian Ter	29.51	749.5	30.07	763.8	32	0.0	89	NW	2	0.9	.....	0	Fog	.....	.....	0	0	Clear	
Fort Griffin, Texas	28.76	730.5	30.09	764.3	36	2.2	90	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	28.80	731.5	29.96	761.0	34	1.1	90	N	4	1.8	.....	5cs	0	W	.....	0	0	Fair	
Galveston, Texas	30.03	762.7	30.07	763.8	58	14.4	87	NE	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Grand Haven, Michigan	29.52	749.8	30.20	767.1	40	4.4	82	E	7	3.1	.....	.....	10s	.....	E	0	0	Cloudy	
Indianapolis, Indiana	29.28	743.7	30.07	763.8	45	7.2	92	Calm	0	0	.....	.....	10s	.....	Calm	0	0	Cloudy	
Indianola, Texas	30.07	763.8	30.10	764.5	58	14.4	82	N	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Jacksboro, Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Jacksonville, Florida	29.89	759.2	29.91	759.7	59	15.0	87	W	8	3.6	.....	.....	10s	.....	W	0.01	0.3	Cloudy	
Keokuk, Iowa	29.48	748.8	30.12	765.0	37	2.8	71	Calm	0	0	.....	0	5s	.....	Calm	0	0	Fair	
Key West, Florida	29.92	760.0	29.96	761.0	71.0	21.7	64	NW	13	5.8	.....	0	2s	.....	NW	Inap.	Inap.	Fair	
Kittyhawk, North Carolina	30.07	763.8	30.00	764.3	59	15.0	100	SE	13	5.8	.....	.....	10s	.....	SE	0.07	1.8	Cloudy	
Knoxville, Tennessee	29.84	735.1	29.94	760.5	51	10.6	93	NE	4	1.8	.....	.....	10s	.....	NE	0	0	Cloudy	
La Crosse, Wisconsin	29.40	746.7	30.16	766.1	40	4.4	95	S	9	4.0	.....	.....	10s	.....	S	0	0	Cloudy	
La Mesilla, New Mexico	26.03	662.7	30.24	768.1	29	— 1.7	56	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Laredo, Texas	.....	.....	.....	.....	51	10.6	86	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Leavenworth, Kansas	29.21	741.9	30.01	764.3	30	— 1.1	100	Calm	0	0	.....	.....	Fog	.....	.....	0	0	Dense fog	
Los Angeles, California	29.68	753.9	30.01	762.5	53	11.7	86	N	4	1.8	.....	0	5ks	.....	N	0	0	Fair	
Louisville, Kentucky	29.47	748.5	30.01	762.7	48	8.9	100	N	6	2.7	.....	.....	Fog	.....	Calm	0	0	Dense fog	
Lynchburg, Virginia	29.41	747.0	30.00	764.3	55	12.8	93	NE	6	2.7	.....	.....	10n	.....	N	1.34	34.0	Heavy rain	
Maricopa Wells, Arizona	.....	.....	.....	.....	33	0.6	51	N	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Marquette, Michigan	29.46	748.3	30.18	766.6	37	2.8	71	S	8	3.6	.....	.....	10s	.....	Calm	0	0	Cloudy	
Mason, Texas	28.39	721.1	30.18	766.6	48	8.9	77	SW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Memphis, Tennessee	29.76	755.9	30.00	764.3	44	6.7	92	N	5	2.2	.....	.....	10n	.....	Calm	0.02	0.5	Misting	
Milwaukee, Wisconsin	29.49	749.0	30.20	767.1	39	3.9	71	SW	7	3.1	.....	.....	10s	.....	.....	0	0	Cloudy	
Mobile, Alabama	29.98	761.5	30.03	762.7	55	12.8	80	N	7	3.1	.....	.....	10s	.....	NW	0	0	Cloudy	
Montgomery, Alabama	29.74	755.4	29.98	761.5	54.5	12.5	90	W	7	3.1	.....	.....	10s	.....	Calm	0	0	Cloudy	
Morgantown, West Virginia	29.04	737.6	30.00	764.3	51	10.6	82	SE	3	1.3	.....	.....	10n	.....	SE	0.26	6.6	Light rain	
Mt. Washington, N. H.	24.06	611.1	30.42	772.7	33	0.6	100	W	39	17.4	.....	.....	Fog	.....	W	0	0	Foggy	
Nashville, Tennessee	29.47	748.5	30.01	762.2	49	9.4	93	NW	4	1.8	.....	.....	10s	.....	Calm	0	0	Cloudy	
New Haven, Connecticut	30.32	770.1	30.45	773.4	39	3.9	80	NE	8	3.6	.....	5ck	5s	Calm	Calm	0	0	Cloudy	
New London, Connecticut	30.40	772.1	30.46	773.7	39	3.9	82	N	8	3.6	.....	8ck	1s	W	Calm	0	0	Fair	
New Orleans, Louisiana	29.98	761.5	30.04	763.0	56	13.3	81	N	4	1.8	.....	0	Sm'e	.....	Calm	0	0	Clear	
Newport, Rhode Island	30.41	772.4	30.46	773.7	43	6.1	83	E	6	2.7	.....	10k	0	SE	.....	0	0	Cloudy	
New York, New York	30.22	767.6	30.40	772.1	47	8.3	85	NE	16	7.2	.....	.....	Fog	.....	Calm	0	0	Foggy	
Norfolk, Virginia	30.07	763.8	30.13	765.3	59	15.0	94	E	5	2.2	.....	10ck	0	NW	.....	0.05	1.3	Cloudy	
North Platte, Nebraska	26.89	683.0	29.50	749.3	32	0.0	84	SE	6	2.7	.....	10k	0	NW	.....	0	0	Cloudy	
Olympia, Washington Ter.	29.59	751.6	29.83	752.6	42	5.6	91	S	11	4.9	.....	8c	0	NE	.....	1.81	46.0	Fair	
Omaha, Nebraska	28.89	733.8	30.00	762.0	34	1.1	90	S	6	2.7	.....	Haze	2s	Calm	Calm	0	0	Fair	
Oswego, New York	30.01	762.2	30.34	770.0	45	7.2	84	E	4	1.8	.....	.....	10n	.....	Calm	0.90	22.9	Light rain	
Pembina, Dakota	28.74	730.0	29.57	751.1	38	3.3	62	S	20	8.9	.....	.....	10s	.....	S	0	0	Cloudy	
Philadelphia, Pennsylvania	30.29	769.4	30.34	770.6	48	8.9	92	NE	18	8.0	.....	.....	10s	.....	NE	Inap	Inap.	Cloudy	
Phœnix, Arizona	.....	.....	.....	.....	39	3.9	39	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Pike's Peak, Colorado	17.56	446.0	29.77	756.1	14	—10.0	64	W	40	17.9	.....	8c	0	W	.....	0	0	Fair	
Ploche, Nevada	23.96	608.6	29.73	755.1	37	2.8	39	S	6	2.7	.....	.....	10s	.....	Calm	0	0	Cloudy	
Pittsburg, Pennsylvania	29.30	744.2	30.12	765.0	47	8.3	92	SE	4	1.8	.....	.....	10s	.....	S	0.60	15.2	Cloudy	
Port Huron, Michigan	29.51	749.5	30.18	766.6	42	5.6	91	NE	4	1.8	.....	.....	10s	.....	Calm	0.02	0.5	Cloudy	
Portland, Maine	30.43	772.9	30.48	774.2	39	3.9	82	W	3	1.3	.....	10k	Haze	W	.....	Inap.	Inap.	Cloudy	
Portland, Oregon	29.70	754.4	29.79	756.7	45	7.2	92	SW	10	4.5	.....	.....	10ks	.....	SW	1.31	33.3	Threatening	
Prescott, Arizona	24.77	629.2	30.13	765.3	39	3.9	25	Calm	.....	.....	.....	2ck	0	Calm	.....	0	0	Fair	
Punta Rassa, Florida	29.96	761.0	29.97	761.2	60	15.6	82	N	8	3.6	.....	0	5ks	.....	NE	0	0	Fair	
Red Bluff, California	29.62	752.3	29.98	761.5	55	12.8	87	S	12	5.4	.....	.....	10s	.....	S	0.21	5.3	Cloudy	
Rochester, New York	29.65	753.1	30.29	769.4	41	5.0	95	SE	6	2.7	.....	.....	10n;fg	.....	Calm	2.09	53.1	Light rain	
Roseburg, Oregon	29.38	746.2	29.95	760.7	44	6.7	88	SW	10	4.5	.....	5k	5ks	SW	SW	1.88	47.8	Cloudy	

UNITED STATES SERIES.—Continued.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Sacramento, California	29.96	761.5	30.07	763.8	55	12.8	87	S	5	2.2		10k	0	SW		0.10	2.5	Cloudy	
St. Louis, Missouri	29.54	750.3	30.13	765.3	40	4.4	82	N	4	1.8			10s		Calm	0	0	Cloudy	
St. Marks, Florida	29.93	760.2	29.95	760.7	57	13.9	93	NW	4	1.8			10s		NW	0.04	1.0	Cloudy	
St. Paul, Minnesota	29.15	740.4	30.00	762.0	34	1.1	79	SE	13	5.8			10s		S	0	0	Threatening	
St. Paul's Island, Alaska																			
Salt Lake City, Utah	25.41	645.4	29.74	755.4	50	10.0	20	SE	26	11.6			10s		Calm	0	0	Cloudy	
San Antonio, Texas	29.30	744.2	29.96	761.0	45	7.2	92	NE	2	0.9		0	0			0	0	Clear	
San Diego, California	29.97	761.2	30.04	763.0	52	11.1	86	E	6	2.7		0	0			0	0	Clear	
Sandusky, Ohio	29.45	748.0	30.14	765.5	46	7.8	92	E	10	4.5			Fog		Calm	0.03	0.8	Foggy	
Sandy Hook, New Jersey	30.35	770.9	30.38	771.6	48	8.9	92	NE	20	8.9			10s		SE	0	0	Cloudy	
San Francisco, California	30.02	762.5	30.08	764.0	57	13.9	90	SW	4	1.8			10s		W	0.13	3.3	Cloudy	
Santa Fé, New Mexico	23.19	589.0	29.73	755.1	30	—1.1	48	NE	4	1.8		0	1s		Calm	0	0	Clear	
Savannah, Georgia	29.75	755.6	29.84	757.9	62	16.7	88	W	10	4.5			10s		W	0.13	3.3	Threatening	
Shreveport, Louisiana	29.90	759.4	30.13	765.3	43	6.1	92	N	2	0.9		0	0			0	0	Clear	
Smithville, North Carolina	29.89	759.2	29.92	760.0	66	18.9	95	E	23	10.3			10n		E	1.14	29.0	Light rain	
Springfield, Massachusetts	30.26	768.6	30.40	772.1	37	2.8	71	N	1	0.4		10ck	Sm'e	NW		Inap.	Inap.	Cloudy	
Stanwix, Arizona					37	2.8	38	Calm				0	0			0	0	Clear	
Stockton, Texas	26.95	684.5	29.95	760.7	36	2.2	71	Calm	0	0		0	0			0	0	Clear	
Thatcher's Island, Mass	30.43	772.9	30.48	774.2	41	5.0	82	N	4	1.8		8ck	0	W		0	0	Fair	
Toledo, Ohio	29.44	747.8	30.13	765.3	45	7.2	92	NE	9	4.0			Fog		Calm	0.07	1.8	Foggy	
Tucson, Arizona	27.53	700.5	30.13	765.3	40	4.4	16	SE				0	0			0	0	Clear	
Tybee Island, Georgia	29.81	757.2	29.84	757.9	59	15.0	100	SW	8	3.6			Fog		Calm	0.35	8.9	Foggy	
Umatilla, Oregon	29.38	746.2			43	6.1	91	W	1	0.4			10ks		W	0.01	0.3	Cloudy	
Vicksburg, Mississippi	29.83	757.7	30.10	764.5	48	8.9	88	N	2	0.9			10s		N	0	0	Cloudy	
Virginia City, Montana	23.01	607.3	29.39	746.6	31	—0.6	89	SW	10	4.5			10s		Calm	0.13	3.3	Cloudy	
Visalia, California	29.73	755.1	30.12	765.0	42	5.6	83	Calm	0	0		0	2s		NW	0	0	Clear	
Washington, D. C.	30.12	765.0	30.24	768.1	51	10.6	100	NE	11	4.9			Fog		NE	0.22	5.6	Foggy	
Wickenburg, Arizona					28	—2.2	11	N				2c	0	Calm		0	0	Fair	
Wilmington, N. Carolina	29.84	757.9	29.91	759.7	67	19.4	90	E	16	7.2			10s		E	0.74	18.8	Cloudy	
Winnemucca, Nevada	25.45	646.4	29.81	757.2	42	5.6	83	SW	20	8.9			10ks		SW	Inap.	Inap.	Cloudy	
Wood's Holl, Mass	30.41	772.4	30.47	773.9	44	6.7	76	NE	10	4.5		0	8s		Calm	0	0	Fair	
Yankton, Dakota	28.68	728.9	29.90	759.4	35	1.7	80	SE	12	5.4		2cs	0	W		0	0	Fair	
Yuma, Arizona	29.82	757.4	30.00	762.0	45	7.2	54	Calm	0	0		0	0			0	0	Clear	
Sub-Series.																			
York Factory, B. A.	29.40	746.7	29.45	748.0	26.0	—3.3	94	S	16	7.2			10s			0.06	1.5	Cloudy	J. Fortescue, W. Wood.
Havana, Cuba, W. I.	29.89	759.2	29.90	759.4	74	23.3	76	S	1.2	0.5		8k	4n	Calm	NW	0.67	17.0	Cloudy	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.05	763.3	30.08	763.5	77	25.0	86	Calm	0	0		2c	2s	Calm	N	0	0		James Gall.
Navassa, W. I.	29.82	757.4	29.90	759.4	80	26.7		NE	5	2.2						0	0	Fair	F. M. Everett.
St. Thomas, W. I.					81	27.2	78	S	4	1.8		8c	2ks	SE		0	0		G. O. Gellich.
Paramaribo, D. Guiana, S. A.			29.94	760.5	85	29.4	72	E			3	4c	5k	E		0	0	Fair	C. J. Hering.
Batavia, Dutch Guiana, S. A.																			Dr. H. Groot.
Medellin, Colombia, S. A.	25.21	640.3			68.0	20.0	84	Calm			0	3ck	4ks			0.30	7.6	Cloudy	Thomas Herran.
Honolulu, Oahu, H. I.																			Daniel Smith.
Makawao, Maui, H. I.																			F. L. Clarke.

Note.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,700 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,838 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.8 ft., or 313.3 m.; Medellin, 4,875 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,862.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.67 in.; Cheyenne, 6.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.56 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in. Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard Mare Island, Cal.	30.05	763.3	56	13.3	55	12.8	93	NW	7	3.1	.....	.....	9ks	.....	.....	0.01	0.3	.....	.....	Cloudy.....	
Navy Yard, Pensacola, Fla.	30.11	764.8	.....	.....	59	15.0	88	NW	6	2.7	.....	.....	10	.....	NW	0	0	.....	.....	D. clouds.....	
Navy Yard, Portsmouth, N.H	30.50	774.7	64	17.8	37	2.8	81	NE	.....	.....	1	.....	.....	.....	.....	0	0	.....	.....	Cloudy.....	
Naval Hospital, Yokohama, Japan.....	30.09	764.3	59	15.0	53	11.7	93	NNW	.....	.....	3	.....	10n	.....	NNW	0.10	2.5	.....	.....	Light rain...	
Adams. Punta Arenas, Patagonia.	29.89	759.2	43	6.1	43	6.1	75	NNE	.....	.....	4	.....	10	.....	N&E	Light	Light	Long	NE	D. clouds.....	
Alert. Yokohama, Japan.....	30.24	768.1	56	13.3	56	13.3	100	NNW	.....	.....	2	.....	10	.....	N	.....	.....	.....	.....	Raining.....	
Alliance, Constantinople, Turkey.	29.95	760.7	67	19.4	62	16.7	100	ENE	.....	.....	0–1	.....	10	.....	NE	.....	.....	.....	.....	Cloudy.....	
Ashuelot. N. 38° 38,′ E. 118° 50′.....	30.52	775.2	48	8.9	45	7.2	53	E	.....	.....	3	.....	8	.....	E	.....	.....	Smooth	.....	D. clouds.....	
Canonicus, New Orleans, La.....	30.08	762.7	55	12.8	57	13.9	81	N	.....	.....	2	.....	6	.....	.....	.....	.....	.....	.....	Cloudy.....	
Colorado, New York, N. Y.....	30.40	772.1	48	8.9	47	8.3	85	E	1	0.4	.....	.....	9	.....	E	0	0	.....	.....	Light fog.....	
Despatch, Constantinople, Turkey.	30.01	762.2	82	27.8	63	17.2	83	NE	.....	.....	1	.....	8	.....	NE	.....	.....	.....	.....	Misty.....	
Essex, Clarence, Fernando Po Id.	29.86	758.4	81	27.2	83	28.3	91	NNW	.....	.....	1	.....	8	.....	.....	.....	.....	Smooth	.....	D. clouds...	
Franklin, Norfolk, Va.....	30.20	767.1	59	15.0	60	15.6	82	E	7.4	3.3	.....	.....	10	.....	E	0.05	1.3	.....	.....	Cloudy..	
Guard, N. 37° 44′, W. 30° 30′.....	30.00	762.0	71	21.7	67	19.4	95	SSE	.....	.....	3	.....	10	.....	S&E	.....	.....	Moderate.	S&E	Showery.....	
Lackawana, San Francisco, Cal.....	30.12	765.0	.....	.....	61	16.1	82	SW	.....	.....	2	.....	9	.....	NNE	.....	.....	.....	.....	D. clouds.....	
Marion, Smyrna, Turkey.....	29.89	759.2	64	17.8	63	17.2	94	E	.....	.....	1	.....	10	.....	Calm	Heavy	Heavy	Smooth	.....	Raining.....	
Michigan, Erie, Pa.....	29.70	754.4	69	20.6	49	9.4	85	E	.....	.....	1	.....	10	.....	E	.....	.....	.....	.....	Raining.....	
Monongahela, N. 32° 19, W. 28° 18′.....	30.04	763.0	70	21.1	70	21.1	90	SSW	.....	.....	4–5	.....	ck	.....	.....	Light	Light	Moderate.	S&W	D. clouds.....	
New Hampshire, Port Royal, S.C.....	29.99	761.7	.....	.....	63	17.2	100	S	16	7.2	.....	.....	10	.....	.....	0.24	6.1	.....	.....	Foggy	
Omaha, Callao, Peru.....	30.05	763.3	73	22.8	72	22.2	90	SSE	4	1.8	.....	.....	10	.....	SE	0	0	Smooth	.....	Misty.....	
Onward, Callao, Peru.....	30.04†	763.0†	73	22.8	70	21.1	95	SE	.....	.....	3	.....	10	.....	.....	.....	.....	Long	W	Misty.	
Ossipee, Norfolk, Va.....	30.19	766.8	70	21.1	60	15.6	94	ESE	.....	.....	2	.....	2	.....	ESE	.....	.....	.....	.....	D. clouds.....	
Palos, Shanghai, China.....	30.36	771.1	53	11.7	51	10.6	93	WNW	.....	.....	2	.....	9	.....	N;W	.....	.....	.....	.....	Cloudy.....	
Plymouth. N. 30° 38′, W. 70° 55′.....	30.34	770.6	76	24.4	71	21.7	95	ESE	.....	.....	6–7	.....	10	.....	SE	.....	.....	Heavy	SE	Squally.....	
Powhatan, Hampton Roads, Va.....	.....	.....	.....	.....	60	15.6	100	E	6.0	2.7	.....	.....	10	.....	.....	0.10	2.5	.....	.....	Overcast.....	
Ranger, Shanghai, China.....	30.57	776.5	66	18.9	55	12.8	87	N	.....	.....	3	.....	10	.....	N	.....	.....	.....	.....	Rainy.....	
Rio Bravo, Brownsville, Texas.....	29.94	760.5	.. ..	.....	64	17.8	100	ENE	.....	.....	1	.....	6	.....	NW	.....	.....	.....	.....	Misty	
Santee, Annapolis, Md.....	30.30	769.6	63	17.2	53	11.7	93	E	.....	.....	3	.....	10	.....	E	0.3	8.	.....	.....	Overcast.....	
Saratoga, Hampton Roads, Va.....	.....	.....	.....	.....	64	17.8	100	E	.....	.....	3	.....	9	.....	E	Light	Light	.....	.....	Misty.....	
St. Louis, League Island, Pa	30.24	768.1	57	13.9	56	13.3	94	NE	7	3.1	.....	.....	10	.....	NE	0	0	.....	.....	Overcast.....	
Swatara, Hampton Roads, Va.....	30.20	767.1	.....	.....	59	15.0	82	E	.....	.....	3	.....	9	.....	S&E	.....	.....	.....	.....	D. clouds.....	
Tennessee, Yokohama, Japan.....	30.23	767.8	68	20.0	55	12.8	93	NNW	7	3.1	.....	.....	10	.....	.....	0.08	0.8	Smooth	.....	Raining.....	
Trenton, Villefranche, France.....	29.83	757.7	.....	.....	69	20.6	43	WSW	4	1.8	.....	.....	1	.....	S&E	0	0	Ground	S	D. clouds.....	
Vandalia, Villefranche, France,...	29.65†	753 1†	68	20.0	69	20.6	70	NNW	.....	.....	1–6	.....	2	.....	NNW	.....	.....	Long smooth	SW	Squally.....	
Wabash, Boston, Mass.....	30.50	774.7	49	9.4	37	2.8	71	NW	3	1.3	.....	.....	7	.....	Calm	0	0	.....	.....	D. clouds.. ...	
Wyoming, Washington, D. C.....	30.49†	774.4†	.....	.....	52	11.1	.....	ESE	.....	.....	2	....	10	.....	.....	.....	.....	.....	.....	D. clouds.....	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. The position given for the Plymouth is that at noon, local time, instead of that at 7:35 a. m., Washington time.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.	Character.	Direction from—		
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—				
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska, N. 46° 49', W. 125° 00'			29.77†	756.1†	51	10.6		W			6				W	Heavy	W	Squally	Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama, Panama Bay			29.72	754.9	76	25.0	95	NW			2		2		Calm			D. clouds	Capt. Howard.
S. S. City of Peking, San Francisco, Cal			30.15*	765 8*	59	15.0	94	WSW			2		10		SE	Smooth	W	Misty	Lt. Z. L. Tanner, U.S.N
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio, Yokohama, Japan			30.29	769.4	52	11.1		N			5		10		NNE			Overcast	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

NOTE.—The originals give the wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. *Aneroid. †Aneroid; corrected for elevation, instrumental error not known.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.

S. S. Belgic																			Capt. John Metcalf.
S. S. Gaelic, N. 50° 22', W. 147° 33'			30.25*	768.3*	71	21.7	100	SW			5		ks		NE	Heavy	NW	Squally	Capt. W. H. Kidley
S. S. Oceanic, N. 43° 56', E. 172° 5'			29.80	756.9	44	6.7	52	Var.			2–5		7		Var.	High	N	Showery	Capt. H. Parsell.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. *Aneriod.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig, N. 47° 59', W. 36° 6'	875½W	11.5	30.02	762.5	48.0	8.9	78	NNE			5		ck		NNE	Swell	N	Partly o'cast	Capt. K. Undütsch.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio, Baltimore, Md			30.28	769.1	52.0	11.1	93	ENE			3		10					Overcast	Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, nor distinguish between upper and lower clouds.

UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Lo'wr	Upper.	Lower.	Character.	Direction From—		
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second	0—10.	0—10.	0—10.	From—	From—				
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, Liverpool			29.41*	747.0*	52	11.1	73	W			8		8		WNW				Captain Sargent.
S. S. Ohio. N. 51° 31′, W. 18° 25′			29.78	756.4	47	8.3	92	W			5		8?		W	Heavy	W	Clear?	Captain Morrison.
S. S. Pennsylvania, N. 39° 02′, W. 71° 54′			30.33†	770.4†	58	14.4	88	E			4		6?		NNE	Light	E	Clear?	Captain Harris.

NOTE.—The originals give the barometer as read off; the wind-force by the scale 0 to 12. *Aneroid; correction for elevation applied, instrumental error not known.
† Corrected for temperature and elevation, instrumental error not known.

RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

S. S. Nederland																			Capt. Randle.
S. S. Switzerland, N. 47° 25′, W. 42° 13′			30.14*	765.5*	45	7.2		NE	20	8.9			6		NE	Mod'ate	NE	D. clouds.	Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

*Aneroid; regulated to standard at Antwerp.

ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

S. S. Hibernian																			Capt. W. Richardson.
S. S. Scandinavian																			

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, Kennebunk, Maine			30.47	773.9	45	7.2	84	Calm	0	0			8ck		Calm			Cloudy	Capt. James Jorgensen.

NOTE.—The originals for the schooner Addie Fuller give the amount of cloudiness by the scale 0 to 4; the barometer as read off.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg'd,) Chief Signal Officer, U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON NOVEMBER 24, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:48 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:38 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours	.....	.....	30.19	766.7	67.3	19.6	63	Calm	.....	.....	0	.....	1	.....	.....	0	0	Very fair.....	Michel.
Algiers	.....	.....	30.04	762.9	64.4	18.0	71	W	.....	.....	0	.....	0	.....	.....	0	0	Clear.	Peter.
La Calle	.....	.....	30.04	763.1	68.4	20.2	78	N	.....	.....	1	.....	2	.....	.....	0	0	Fair.....	Fleury.
Tunis	.....	.....	30.18	766.4	67.1	19.5	65	W	.....	.....	3	.....	0	.....	.....	0	0	Clear.....	Jacques.
Sfax	.....	.....	30.11	764.7	64.4	18.0	.....	W	.....	.....	2	.....	1	.....	.....	0	0	Very fair....	Husson.
Saida	.....	.....	30.21	767.2	67.1	19.5	21	SSW	.....	.....	1	.....	1	.....	.....	0	0	Very fair....	Millot.
Tebessa	.....	.....	30.10	764.5	.....	.....	.....	Calm	.....	.....	0	.....	0	.....	.....	.....	.....	Clear	Bourgeois.
Geriville	.....	.....	30.19	766.8	51.1	10.6	80	W	.....	.....	2	.....	2	.....	.....	0	0	Fair	Lemaillot.
Laghouat	.....	.....	30.11	764.7	64.4	18.0	44	N	.....	.....	2	.....	0	.....	.....	0	0	Clear.....	Guyot.
Biskra	.....	.....	30.15	765.9	69.1	20.6	22	Calm	.....	.....	0	.....	0	.....	.....	0	0	Clear.	Kuntz.

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890 ? meters, or 2,919.9 ? feet; Tebessa, 1,088 ? m., or 3,569.4 ? ft.; Geriville, 1,360 ? m.; or 4,461.7 ? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Agram	29.32	744.7	29.89	759.1	39.6	4.2	93	Calm	.....	.....	0	.....	10	.....	.....	0	0	Dense fog....	Prof. Ivan Stozir
Cracow, I. R. Observatory	29.02	737.2	29.80	757.0	42.8	6.0	70	W	.....	.....	2	.....	8	.....	.....	0.016	0.4	.....	Dr. Wierzbiski.
Eperies	28.92	734.5	29.82	757.3	40.5	4.7	84	Calm	.....	.....	0	.....	1cs	.....	.....	0.079	2.00	.....	Julius Mikolik.
Gratz	28.88	725.8	29.84	758.0	44.1	6.7	77	S	.....	.....	2	.....	4	.....	.....	0	0	.....	Andreas Rospini.
Hermannstadt	28.44*	722.4	29.88	758.9	44.6	7.0	52	NW	.....	.....	3	.....	2	.....	.....	0.321	8.15	.....	Prof. Reissenberger.
Kremsmünster	28.41	721.6	29.77	756.1	42.8	6.0	88	NE	.....	.....	2	.....	10	.....	.....	0.295	7.5	.....	Prof. C. Wagner.
Lemberg	28.74	729.9	29.74	755.3	43.2	6.2	72	NW	.....	.....	1	.....	6	.....	.....	0	0	.....	Dr. T. Stanecki.
Pola	29.77	756.1	29.88	759.0	52.0	11.1	79	S	.....	.....	1	.....	10s	.....	.....	0.055	0.14	.....	I.R.HydrographicOffice.
Szathmar	29.44	747.7	29.91	759.7	45.7	7.6	65	SW	.....	.....	3	.....	2	.....	.....	0	0	.....	Johann Tamas, S. J.
Szegedin	29.60	751.9	29.89	759.1	44.1	6.7	94	S	.....	.....	1	.....	6	.....	.....	0	0	.....	Karl Stancel.
Trieste	29.78	756.5	29.89	759.1	51.8	11.0	85	SW	.....	.....	1	.....	3	.....	.....	0.205	5.2	Raining.....	P. Busin.
Vienna	29.11	739.3	29.81	757.2	46.4	8.0	72	Calm	.....	.....	0	.....	.....	.....	.....	0	0	.....	I.R. Central Met. Obs'y.

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time, and at Trieste at 7 a. m. of the following day. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Arlon	27.99	710.9	29.50	749.3	35.6	2.0	95	SE	.....	.....	1	.....	10	.....	.....	1.555	40.5	Rain & snow	Prof. M. Passau.
Brussels	29.26	743.3	29.47	748.4	43.3	6.3	87	SSW	.....	.....	3	.....	.....	.....	.....	1.262	32.05	Light rain...	Royal Observatory.
Furnes	29.38	746.2	29.40	746.8	43.2	6.2	97	ESE	.....	.....	2	.....	10	.....	.....	2.362	60.0	.....	M. E. de Cae.
Maeseyck	29.39	746.5	29.52	749.8	43.2	6.2	94	SSW	.....	.....	2	.....	10	.....	.....	1.130	28.7	.....	M. Pierrot.

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	29.40	746.7	29.51	749.5	34.6	1.4		W	2	0.9			2			0.020	0.51	Hazy	W. Boswell.
Ardrossan	29.40	746.7	29.41	747.0	39	3.9		ENE			2		6					Misty	William McNeil.
Armagh, Observatory			29.38	746.2	34.9	1.6		SSW	6	2.7			10					Foggy	S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)			29.34	745.2	42.4	5.8		ESE	18	8.0			1					Blue sky	John Hartnup.
Birr Castle, (Parsonstown)			29.31	744.5	38.1	3.4		NNE			1		8					D. clouds	J. L. E. Dreyer.
Bradford, Yorkshire	29.07	738.4	29.46	748.3	37.1	2.8		W			0		0			0.06	1.5	Blue sky	J. McLandsborough.
Bridgetown, (Barbados)	29.88	758.9	29.91	759.7	83.0	28.3		NE			2		2					D. clouds	Pvt. G. W. Roberts, A.
Cambridge, Observatory			29.36	745.7	40.0	4.4		E			1		10					Drizzling	H. Todd. [H. C.
Cardington			29.38	746.2	39.6	4.2		E			1		10					Overcast	John McLaren.
Chatham, School M. E.	29.32	744.7	29.45	748.0	39.2	4.0		NE			2		10					Drizzling	Lt. W. G. Morris, R. E.
Dartmoor	28.71	729.2	30.22	767.6	40.0	4.4		SE			2		7					Raining	Alexander Watt.
Davos Platz (Switzerland)																			
Donaghadee	29.33	745.0	29.36	745.7	43	6.1		E			3		10					Overcast	Francis Redford, M. A.
Dover	29.30	744.2	29.32	744.7	43	6.1		SSE			5		10					Raining	J. Mac Gowan.
Eccles, (near Manchester)			29.36	745.7	43.9	6.6		NE	6.2	2.8			6					D. clouds	J. Costello.
Falmouth, Observatory	28.87	733.3	29.09	738.9	50.0	10.0		WSW			1		10					Foggy	Thomas Mackereth.
Fort Napier, (Natal)	27.53	699.2	29.73	755.1	84.6	29.2		NE			3		0					Blue sky	The Staff.
Free Town, (Sierra Leone)			29.88	758.9	87.0	30.6		E			0		0					Blue sky	Pvt. G. Salmon, A. H. C.
Galway, Queen's College																			Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	30.04	763.0	30.09	764.3	63.4	17.4		W			4		1					Blue sky	Corpl. C. Aitken, A.H.C.
Glasgow, Observatory	29.23	742.4	29.44	747.8	37.0	2.8		NNE			2		10					Gloomy	D. G. Maclean.
Great Yarmouth	29.42	747.3	29.42	747.3	43	6.1		E			3		3					Blue sky	G. T. Watson.
Greenwich, Royal Obs'y	29.16	740.7	29.38	745.0	42.6	5.9		E			1		10					Raining	The Staff, for G. B. Airy.
Guernsey	28.98	736.1	29.20	741.7	50	10.0		SW			2		10					Raining	Dr. S. E. Hoskins, F.R.S.
Helston			29.17	740.9	50	10.0		N			2		6k			0	0	Showery	M. P. Moyle.
Holyhead	29.23	742.4	29.28	743.7	44	6.7		E			4		1					Blue sky	John Tilston.
Jersey	28.96	735.6	29.24	742.7	51.6	10.9		SW			6		10					Raining	J. Fisher.
Kew, Observatory			29.33	745.0	42.6	5.9		ENE	13	5.8								Rain and fog	The Staff.
Kingstown	29.28	743.7	29.30	744.2	45	7.2		ESE			5		8					Overcast	George Mitchell.
Leicester, Museum			29.37	746.0	43.8	6.6		E			1		10					Drizzling	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.96	761.0	30.03	762.7	66.4	19.1		NW			2		6					D. clouds	Sgt. C. Arbeiter, A.H.C.
Nairn	29.36	745.7	29.46	748.3	32	0.0		Calm			0		2					¼ clouded	W. D. Penny.
Nassau, (Bahamas)			29.96	761.0	73.8	23.2		NW			2		8					D. clouds	C. S. Duncombe.
Nottingham, Observatory	29.19	741.4	29.38	746.2	36.5	2.5		ENE			2		10s		ENE	0	0	Foggy	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	28.82	732.0	29.34	745.2	37.1	2.8		ENE			2		10					Threatening	Rev. Stephen Whitty.
Oxford, Radcliffe Obs'y			29.33	745.0	40	4.4		E			1		10					Drizzling	F. Lucas
Plymouth	29.03	737.3	29.10	739.1	46.6	8.1		SW			1		10			Blank	Blank	Overcast	John Merrifield.
Roche's Point	29.21	741.9	29.25	742.9	42	5.6		NE			3		8					Dull	W. Kennedy.
Saint Ann's Head	29.04	737.6	29.20	741.7	43	6.1		E			4		10					Misty	John C. Walker.
Sandwick Manse, (Orkneys)			29.50	749.3	35.8	2.1		NW	5	2.2			4					D. clouds	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey)			29.70	754.4	51.2	10.7		NNW			2		10					Raining	Sergt. W. H. Lyne.
Sheffield	29.16	740.7	29.41	747.0	35.6	2.0		ENE			1		6			0	0	Misty	W. F. Cooper.
Silloth Rectory	29.38	746.2	29.41	747.0	39.3	4.1	86	E			2		0			0	0	Blue sky	Rev. F. Redford, M. A.
Stonyhurst, Observatory					37.7	3.2		NW			1							Hazy	Rev. S. J. Perry.
Stornoway, Lewis C., (Hebr.)			29.38	746.2	37	2.8		NE			2		2					D. clouds	John Smith.
Stratfield Turgiss	29.13	739.9	29.34	745.2	40.8	4.9		S			1		10					Raining	Rev. C. H. Griffith, F.M.S.
Thurso			29.46	748.3	36	2.2		S			1		3					Blue sky	John Trotter.
Truro, Royal Institution			29.19	741.4	51	10.6		W			2		10					Raining	W. Newcombe.
Valencia, Observatory			29.80	756.9	44.4	6.9		WNW	17	7.6			8					D. clouds	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)																			Henry Mercer.
Cape Good Hope, Obs'y	29.77	756.1	29.81	757.2	85.0	29.4	27	NW	11	4.9		8	10						The Staff, for E. J. Stone.
Hobart Town, (Tasmania)			29.96	761.0	57.0	13.9	62	NW			3		0			0.03	0.8		Francis Abbott, F.R.A.S.
Leith, Restalrig Park																			Andrew Gibb.
Mauritius, Observatory	29.80	756.9	29.99	761.6	79.1	26.2	71	ENE	11.5	5.1		1	4		NE	2.04	51.8	Fine	C. Meldrum.
Melbourne, Observatory	30.02	762.5	30.11	764.8	62.2	11.2	76	SE	6	2.7			1			0	0	Very fine	R. L. J. Ellery.
Monach L't-house, (Hebrides)																			J. Youngclause.
North Unst, (Shetland Is.)																			Robert Burnet.

Note.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 8 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m.

Marine Series. Vessels.	Sea or swell. Height scale 0—9	Sea or swell. Direction from—		
S. S. Algeria				
S. S. Batavia				
Ship Camperdown				Capt. W. Watson.
Brig Catherine				Capt. J. E. Mouland.
Barque Celeste				Capt. A. T. Miller.
S. S. Hibernia				Capt. Adam Smith.
Barque Maroon				Capt. D. F. McKechnie.
Ship Mikado				Capt. W. R. Cato.
S. S. Seine				Capt. A. T. Brown.
Barque Sorata				Capt. C. C. Prehn.
Schooner Traveller				Capt. H. Manning.
				Capt. Jas. J. Price.
				Capt. Alex. Simpson.

Note.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.

Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	BAROMETER. Corrected for instrumental error and temperature. Inches.	BAROMETER. Corrected for instrumental error and temperature. Millimeters.	BAROMETER. Reduced to sea-level. Inches.	BAROMETER. Reduced to sea-level. Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Upper. From—	CLOUDS. Direction. Lower. From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	WEATHER.	OBSERVER
San José	26.21	665.7	.....	.....	68.4	20.2	89	E	.....	.....	1	3cs	2cs	.....	NE	Inap.	Inap.	.....	Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29 24	742.8	29.29	744.0	43.3	6.3	87	WNW	.....	.....	4	.....	10	.....	.....	.....	.....	.....	
Fanöe	29.35	745.5	29.37	746.0	41.9	5.5	91	WNW	.....	.....	6	.....	8	.....	.....	.....	.....	.....	
Godthaab, (Greenland)	29.72	755.0	29.77	756.1	28.4	— 2.0	.....	NW	.....	.....	6	.....	10	.....	.....	.....	.....	.....	
Stykkisholm, (Iceland)	29.91	759.7	29.95	760.8	18.3	— 7.6	100	E	.....	.....	2	.....	5	.....	.....	.....	.....	.....	
Thorshavn, (Faröe)	29.51	749.5	29.54	750.4	34.7	1.5	67	NE	.....	.....	2	.....	3	.....	.....	.....	.....	.....	
Vestervig	29.09	738.9	29.20	742.2	41.7	5.4	87	WNW	.....	.....	6	.....	8	.....	.....	.....	.....	Raining.....	

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

Alençon, Normal School	28.91	734.2	29 46	748.2	48.2	9	95	SW	.....	.....	1	.....	10	.....	.....	0.51	13.	Covered	Colignon, Director.
Amiens, Normal School	29.26	743.3	29.37	746.1	44.2	6.8	89	ESE	.....	.....	2	.....	10	.....	.....	0.118	3.0	Covered	Bonvarne, Director.
Avignon, Normal School	29.82	757 4	29.90	759.4	53.6	12	78	NE	.....	.....	2	.....	10	.....	WNW	0	0	Covered	Mr. Giraud, Director.
Bar-sur-Seine	28.95	735.4	29.51	749.6	33.1	11.7	87	S	.....	.....	4	.....	10	.....	SW	0.244	6.2	Raining	C. Saillard.
Beaumette Obs'y (Angers)	29.13	739.8	29.24	742.8	55.6	13.1	79	SW	6.0	2.7	.....	.....	10	.....	SW	0.780	19.8	Raining	Albert Cheux.
Beauvais	29.11	739.5	29.40	746.8	43.5	6.4	94	ESE	.....	.....	1	.....	10	.....	SE	0.177	4.50	Covered	Normal School.
Besançon	28.78	731.1	29.07	753.6	52.2	11.2	80	S	.....	.....	8	.....	8	.....	W	0.185	4.7	Very cloudy	Normal School.
Bourg-en-Bresse	28.87	733 4	29.78	756.5	50.9	10 5	72	S	.....	.....	8	.....	10n	.....	W	0.063	1.6	Covered	Normal School.
Bourges, Normal School	29.06	738.0	29.60	751.9	55.4	13	88	WSW	.....	.....	8	.....	10	.....	E	0.319	8.1	Covered	A. Wagner, Director.
Brest, Naval Observatory	28.98	736.0	29.20	741.6	59.2	10.1	92	SW	.....	.....	4	.....	10	.....	SW	0.659	16.75	Raining	The Staff.
Carcassonne, Normal School	29.47	748.6	29.89	759.1	61.2	16.2	79	S	.....	.....	2	.....	2	.....	S	0	0	Slightly cl'dy	Vateau, Director.
Caen	29.21	742.0	29.29	743.9	47.7	8.7	97	N	.....	.....	1	.....	10	.....	NE	0.31	8.	Covered	Normal School.
Chartres, Normal School	28.78	730.9	29.33	745.0	53.4	11.9	85	NE	.....	.....	4	.....	10	.....	.....	0.39	10.	Covered	Lequin, Director.
Châlons-sur-Marne, N. Sch'l	29.08	738.6	29.39	746.6	49.8	9.9	100	SW	.....	.....	4	.....	10	.....	SW	0.433	11.0	Light rain	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.34	719.8	29.67	753.6	56.5	13.6	52	SW	.....	.....	4	.....	10	.....	SW	0.028	0.7	Covered	Alluard, Director.
Commercy, Normal School	28.56	725.4	29.45	748.0	47.5	8.6	97	SW	.....	.....	2	.....	10	.....	SW	0.28	7.	Covered	Dr. Goulet, Director.
Commune de Grésque*	28.83	732.2	29.97	761.2	57.0	13.9	76	W	.....	.....	2	.....	10	.....	W	0	0	Covered	V. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	29.29	744.0	29.60	749.3	55.0	12.8	86	S	.....	.....	8	.....	8	.....	SW	0.226	5.75	Very cloudy	Mouillot, Director.
Le Mans, Normal School	29.07	738.3	29.37	746.0	52.9	11.6	93	SW	.....	.....	8	.....	8	.....	SW	0.453	11.5	Very cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	28.79	731.3	29.71	754.5	52.7	11.5	80	SE	.....	.....	4	.....	5	.....	ENE	0.322	8.2	Cloudy	Pin, Director.
Lorient, Naval Observatory	29.10	740.6	29.26	743.1	55.4	13.0	88	SW	.....	.....	7	.....	10	.....	.....	1.142	29.0	Covered	T. Carré, Director.
Mâcon, Normal School	29.05	737.8	29.75	755.7	45.1	7.3	85	Calm	.....	.....	0	.....	10	.....	.....	0	0	Covered	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	28.50	723.9	29.54	750.4	46.4	8	94	N	.....	.....	.....	.....	10	.....	N	0.217	5.5	Covered	Normal School.
Nismes, Normal School	29.71	754.7	29.91	759.8	66.6	19.2	66	W	.....	.....	2	.....	2	.....	E	0	0	Slightly cl'dy	Boyer, Director.
Orleans, Normal School	29.08	738.6	29.46	748.3	53.6	12	87	SW	.....	.....	4	.....	8	.....	SW	0.331	8.4	Very cloudy	Bernard, Director.
Paris, Observatory	29.14	740.1	29.37	746.1	53 4	11.9	87	SW	.....	.....	1	.....	10n	.....	SW	0.259	6.57	Raining	National Observatory.
Privas	28.86	733.0	29.94	760.4	48.2	9	76	NE	.....	.....	6	.....	10	.....	N	0	0	Covered	Normal School
Rochefort, Naval Obs'y	29.61	752.2	29.95	753.0	56.1	13.4	84	WSW	.....	.....	8	.....	10	.....	WSW	0.28	7.	Covered	Lt. Decante, Director.
Rouen, Normal School	29.28	743.7	29.37	746.0	46.1	7.8	88	SE	.....	.....	2	.....	10	.....	.....	0.307	7.8	Covered	F. Lucard, Director.
Tarbes, Normal School																			T. Hugues, Director.
Villefranche	28.96	735.6	29.67	753.7	51.8	10.7	96	SE	.....	.....	4	.....	10	.....	NW	0.071	1.8	Covered	Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.77	756.2	29.80	756.9	81.0	27.2	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0	.....	L'Abbé Marchési.
Marseilles, Observatory	.....	.....	29.92	760.0	61.0	16.1	75	SW	.....	.....	1–2	.....	9	.....	.....	Inap.	Inap.	Rainy	The Staff.
Mont-Louis	24.74	628.4	30.06	763.4	44.2	6.8	59	SSW	24.2	10.83	.....	.....	5	.....	SW	0	0	.....	Mr. Falguère.
Nice																			
Paris, Montsouris Obs'y	29.10	739 0	29.81	757.2	57.9	14.4	68	SW	.....	.....	.....	.....	5	.....	SW	.....	.....	Cloudy	Dr. A. Niepce.
Perpignan			29.37	746.0	52.5	11.4	94	WSW	.....	.....	4	.....	10	.....	.....	0.390	9.9	Raining	Marié Davy, Director.
Pic du Midi, (Summit,) H. P.	29.84	757.8	62.1	16.7	68	SE	13.0	5.83	.....	.....	.....	.....	2	.....	W	0	0	.....	Dr. Fines.
Pic du Midi, (Plantade,) H. P.	21.12	536.3	.....	.....	29.1	— 1.6	.....	SW	.....	.....	6	.....	6	.....	.....	.....	.....	Fair	M. Baylac.
Saint Maur, (near Paris)	22.36	568.0	.....	.....	41.0	5.0	.....	SW	.....	.....	6	.....	6	.....	.....	0.079	2.0	Fair	Gen'l de Nansouty.
Toulouse, Observatory	29.21	742.0	29.38	746.2	53.1	11.7	91	SW	.....	.....	2	.....	10	SW	.....	0.535	13.6	Raining	E. Renou.
Tours	29.13	740.0	29.85	758.3	58.5	14.7	63	S	.....	.....	1	.....	3	.....	.....	0.089	2.25	.....	The Staff.
Versailles, (near Paris)	29.28	743.6	29.47	748.6	57.6	19.8	86	SW	.....	.....	7	.....	10	.....	W	0.425	10.8	.....	C. Marquet.
Zi-Ka-Wei, (near Shanghai)			29.37	746.1	52.9	11.6	90	WSW	.....	.....	1	.....	10	.....	.....	0.416	10.57	Raining	Dr. A. Bérigny.
	30.31	769.9	30.34	770.5	44.8	7.1	80	NNE	5.1	2.3	.....	.....	6k	.....	.....	0.031	0.8	Cloudy	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; for Montsouris, the barometer reduced to freezing but not to sea-level. At Mirecourt the cloud direction is apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Grésque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10	Clouds. Amount. Up'er 0-10	Clouds. Amount. Low'r 0-10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg																			Prof. Dr. Hoh.
Berlin	29.42	747.3	29.59	751.6	45.7	7.6	74	SW			4		7			0.135	3.43		Prof. Arndt.
Breslau	29.19	741.4	29.71	754.7	43.9	6.6	64	WSW			3		6			0	0		Royal University Obs'y.
Carlsruhe	29.17	741.0	29.60	751.8	42.6	5.9	74	SE			1		10			0.177	4.5	Heavy rain.	Albert Senz.
Cassel	29.00	736.7	29.61	752.0	42.4	5.8	81	S			2		8	SW		0.147	3.72		Dr. H. Möhl.
Crefeld	29.86	745.8	29.52	749.9	43.3	6.3	85	S			2		10			0	0	Foggy	Director Lose.
Emden	29.54	750.3	29.58	751.2	42.6	5.9	86	WSW			2		5			0.248	6.3		Prof. Prestel.
Frankfort on the Main	29.26	743.3	29.63	752.6	45.7	7.6		S			2		10			0.016	0.4		Physical Society.
Friedrichshafen	28.27	718.1	29.73	755.1	41.2	5.1	88	SW			5		10	SW		0.228	5.8		M. Wilhelm.
Hamburg	29.47	748.5	29.54	750.3	41.4	5.2	90	WSW			4		5ck	WSW		0.213	5.4	Fair	Captain F. Hegemann.
Kiel	29.43	747.4	29.44	747.8	43.5	6.4	83	W			4		2			0.073	1.84		Prof. G. Karsten.
Königsberg, (Prussia)	29.34	745.2	29.42	747.3	43.7	6.5	75	SW										Fair	Prof. E. Luther.
Köslin			29.44	747.8	42.4	5.8		SW			6		4			0.110	2.8		H. Müller.
Leipsic, Observatory	29.27	743.5	29.70	754.4	39.9	4.4	76	SW			2		4	NW		0	0		Prof. Bruhns.
Memel, Naval School	29.30	744.3	29.35	745.4	44.6	7.0	79	SW			6–7		10n					Raining	Reinbrecht von Skalweit.
Neufahrwasser	29.43	747.5	29.45	747.9	44.4	6.9	76	WSW			5		10			0.047	1.2		A. Lothes.
Posen	29.36	745.7	29.66	753.4	44.4	6.9	78	WNW			2		7					Cloudy	Dr. Magener.
Strassburg Obs., (in Alsace	29.04	737.6	29.60	751.8	42.8	6.0	91	S			2		10			0.158	4.02	Raining	Dr. Schur.
Stuttgart	28.65	727.7	29.61	752.0	39.2	4.0	87	S			1		10			0.406	10.3	Raining	Prof. Schoder.
Treves, (Trier)	28.91	734.3	29.43	747.5	43.3	6.3	81	S			3		10			0.490	12.45	Foggy	Prof. Flesch.
Weissenburg, (Bavaria)	28.19	715.9	29.72	754.8	39.7	4.3	85	S	7	3			10		S	0.550	16.5	Light rain	Dr. Von Bebber.
Wustrow, Naval School	29.46	748.3	29.50	749.3	42.8	6.0	83	WSW			7		10					Covered	E. F. Schütz.
German Naval Series.																			

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet: Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4, Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens

Athens	29.46	748.2	29.84	758.0	64.8	18.2		W										Clear	Dr. J. F. J. Schmidt.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and wind-force; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.90	759.3	29.95	760.6	68.5	20.3	35	W	16.0?	7.2?			3			0	0	D. clouds	
Deesa	29.47	748.6	29.95	760.8	79.3	26.3	47	SSW					2	W	SSW	0	0	D. clouds	
Bombay	29.89	759.3	29.93	760.2	81.5	27.5	77	NW	11.0	4.9			0			0	0	Blue sky	
Poona	27.90	708.7	29.90	759.5	80.4	26.9	56	N					3		NW	0	0	D. clouds	
Lahore	29.21	741.8	29.97	761.3	66.2	19.0	84	E	5.9	2.6			10			0.78	19.8	Overcast	
Belgaum	27.40	696.0	29.94	760.5	77.1	25.1	53	ENE	4.0	1.8			1			0	0	D. clouds	
Bangalore																			
Roorkee	29.08	738.8	30.00	762.1	70.8	21.6	62	NW	2.7	1.2			8			0	0	Dust-storm	
Agra	29.37	746.0	29.94	760.5	78.7	25.9	51	W								0	0		
Trichinopoly																			
Nagpur	28.92	734.7	29.98	761.4	76.9	24.9	47	E	2.9	1.3			3			0	0	D. clouds	
Madras																			
Lucknow	29.60	751.8	29.98	761.4	73.5	23.1	63	S	2.0	0.9			0			0	0	Blue sky	
Allahabad	29.65	753.1	29.96	761.1	75.3	24.1	60	Calm	0.7	0.3			2			0	0	D. clouds	
Patna	29.82	757.3	30.00	762.0	79.5	26.4	58	E	1.1	0.5			4	E	E	0	0	D. clouds	
Hazaribagh	27.96	710.2	30.01	762.2	71.8	22.1	66	Calm	2.7	1.2			10			0	0	Overcast	
Cuttack	29.92	759.9	30.00	762.0	76.3	24.6	70	NE	1.5	0.7			5		W	0	0	D. clouds	
Calcutta (Alipore)	29.98	761.5	30.00	762.0	72.8	22.7	83	WNW	2.0	0.9			0			0	0	Blue sky	
Goalpara	29.58	751.4	29.98	761.4	76.2	24.6	66	Calm	0.9	0.4			0			0	0	Blue sky	
Chittagong	29.92	759.9	30.01	762.3	74.8	23.8	77	Calm	0.8	0.4			0			0	0	Blue sky	
Sibsagar	29.67	753.6	30.01	762.3	70.4	21.3	84	NNE	0.6	0.3			5		SW	0	0	D. clouds	
Rangoon																			
Jubbulpore	28.62	726.9	30.01	762.3	72.5	22.5	63	SW	1.3	0.6			8	S		0	0	D. clouds	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,026 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,361 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 1—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	21.93	557.1	29.89	759.1	23.0	— 5.0	87	SE	.....	.....	8	.....	8	NW	.....	1.969*	50.0*	.....	Ab. Dom. Morgini.
Stelvio	21.89	556.0	29.86	758.5	22.1	— 5.5	.....	WNW	.. ...	.....	6	.....	7	.....	.....	0	0	.....	Signora Ernesta Manfredi.
Udine	29.44	747.7	29.85	758.3	49.3	9.6	56	Calm	0	0	.....	.....	3	.....	.....	0	0	.....	Prof. Giovanni Clodig.
Padua	29.74	755.4	29.85	758.2	45.3	7.4	69	SE	1.8	0.8	.....	.....	5	.....	.....	0	0	.....	Prof. Dott. Lorenzoni.
Vicenza	29.65	753.2	29.85	758.2	47.8	8.8	69	S	0.7	0.3	.....	.....	5	W	.....	0	0	.....	Conte Alm. Da Schio.
Verona	29.65	753.1	29.87	758.8	41.9	5.5	85	NNE	0	0	.....	.....	5	.....	.....	0	0	.....	Dott. B. Bertoncelli.
Bergamo	28.52	724.4	29.86	758.5	46.0	7.8	64	SSW	.....	.....	1	.....	6	.....	.....	0	0	.....	Prof. Trionfini Carlo.
Domodossola	28.82	732.0	29.87	758.6	49.8	9.9	60	N	.....	.....	2	.....	5	.....	.....	0	0	.....	Prof. Giuseppe Calza.
Milan	29.35	745.4	29.88	759.0	47.1	8.4	.....	ENE	.....	.....	2	.....	6	SSW	.....	0	0	.....	Ab. Gio. Capelli.
Pavia	29.49	749.1	29.85	758.1	43.2	6.2	74	NE	.....	.....	1	.....	7	NE	.....	0	0	.....	Prof. Gio. Cantoni.
Moncalieri	28.95	735.2	29.87	758.6	44.8	7.1	69	NNW	2.6	1.1	.....	.....	5	SE	.....	0	0	.....	Prof. P. F. Denza.
Mondovi	27.92	709.1	29.85	758.2	47.7	8.7	37	NW	.....	.....	2	.....	2	NNW	.....	0	0	.....	Prof. D. C. Bruno.
Porto Maurizio	29.63	752.5	29.85	758.1	58.8	14.9	56	SW	.....	.....	2	.....	8	W	.....	0	0	.....	Prof. L. Vassallo.
Genoa	29.68	753.9	29.85	758.2	56.5	13.6	60	SE	6.9	2.8	.....	.....	10	SE	.....	0	0	.....	Prof. G. M. Garibaldi.
Piacenza	29.62	752.3	29.88	759.0	40.3	4.6	81	N	0.7	0.3	.....	.....	7	N	.....	0	0	.....	Dott. G. Manzi.
Parma	29.54	750.4	29.87	758.7	43.2	6.2	77	NE	.....	.....	2	.....	4	.....	.....	0	0	.....	Prof. P. Pigorini.
Florence	29.63	752.7	29.89	759.3	50.4	10.2	91	SE	.....	.....	2	.....	10	.....	.....	0.004	0.1	.....	Cav. F. Meucci.
Leghorn	29.83	757.6	29.91	759.8	56.8	13.8	83	SW	11.9	5.3	.....	.....	10	W	.....	0.020	0.5	.....	Prof. P. Monte.
Siena	28.70	728.9	29.92	759.9	51.8	11.0	66	SW	0.7	0.3	.....	.....	10	W	.....	0.008	0.2	.....	Prof. L. Toscani.
Urbino	28.35	720.0	29.92	759.9	52.2	11.2	71	SW	.....	.....	2	.....	4	.....	.....	0	0	.....	Prof. P. Serpieri.
Pesaro	.....	.....	.....	.....	51.8	11.0	68	SE	13.0	5.8	.....	.....	10	.....	.....	0	0	.....	Prof. Luigi Guidi.
Ancona	29.88	759.0	29.99	761.7	55.0	12.8	73	SE	.....	.....	4	.....	1	.....	.....	0	0	.....	Prof. F. DeBosis.
Grosseto	29.84	757.8	29.95	760.7	59.7	15.4	68	SSE	.....	.....	2	.....	6	S	.....	0	0	.....	Avv. P. Ponticelli.
Rome	29.80	756.9	29.98	761.4	58.8	14.9	64	Calm	0	0	.....	.....	9	.....	.....	0.047	1.2	.....	Prof. P. A. Secchi.
Naples, O. U.	29.78	756.4	29.98	761.5	63.0	17.2	57	WNW	.....	.....	4	.....	2	N	.....	0.193	4.9	.....	Prof. L. Palmieri.
Lecce	29.75	755.6	30.00	762.1	60.8	16.0	60	NNE	6.7	3.9	.....	.....	3	.....	.....	0.035	0.9	.....	Prof. C. De Giorgi.
Cosenza	.....	.....	.....	.....	61.9	16.6	73	SE	3.8	1.7	.....	.....	7	.....	.....	0.433	11.0	.....	Prof. F. D. Conti.
Cagliari	.....	.....	.....	.....	.....	.....	.....	... ..	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. A. Pacinotti.
Riposto, (Sicily)	.....	.....	.....	.....	65.1	18.4	62	SE	.....	.....	2	.....	7	S	.....	0	0	.....	Prof. F. Cafiero.
Palermo	29.74	755.5	30.00	762.0	64.4	18.0	55	WSW	4.9	2.2	.....	.....	1	WSW	.....	0	0	.....	Prof. G. Cacciatore.
Caltanissetta	28.05	712.5	30.00	762.1	57.7	14.3	67	WNW	.....	.....	6	.....	0	.....	.....	0	0	.....	Prof. A. Pagani.
Syracuse	29.90	759.5	29.98	761.4	66.2	19.0	54	WNW	.....	.....	2	.....	4	W	.....	0	0	.....	Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.45	748.1	30.01	762.2	60.6	15.9	58	NW	1.3	0.6	.....	.....	2	.....	.....	0.063	1.6	.....	Prof. F. Brioschi.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,548.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Siena, 348.5 m., or 1,143.3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft *Unmelted snow.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Tokei (Yeddo)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	The Observatory.
Tokei (Yeddo) University	29.57	751.0	29.66	753.4	69.8	15.5	54	NNE	5	2.2	.....	.....	.....	.....	.....	1.66	42.2	Clear	Prof. P. V. Veeder.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Señor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Aguascalientes	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	I. N. Marin, M. D.
Córdoba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	C. Peña, M. D.
Cuernavaca	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	L. Castillo, A. E.
Guadalajara	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. L. Perez.
Guanajuato	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. V. Fernandez.
Leon	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. M. Leal.
Mexico	29.09	386.4	30.18	766.5	55.4	13.0	75	Calm	0	0	.....	0	6ck	.....	W	0.05	1.2	Cloudy	Central Observatory.
Orizaba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	N. N.
Orizaba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	I. Orozco, M. D.
Pabellon, (Aguascalts)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. V. de Leon, M. E.
Puebla	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. B. Gonzalez.
Toluca	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. C. Velazquez.
Tlacotalpam	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. F. R. Bayly.
San Luis Potosi	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	G. Barroeta, M. D.
Vera-Cruz	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. J. Rossell.
Zacatecas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. A. Bonilla, M. E.
Puebla, (Catholic Institute)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	P. Spina. [M. M. D. D.
Morelia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Tena, F. L. Páramo.

NOTE.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,230 m., or 7,312.9 ft.; Orizaba, 1,923 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

Furnished by the cooperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	29.46	748.3	29.46	748.3	44.8	7.1	.....	SE	.....	.....	3	.....	.....	.....	.....	0.016	0.4	.....	
Groningen	29.47	748.5	29.52	749.9	43.5	6.4	.....	W	.....	.....	2	.....	.....	.....	.....	0.094	2.4	.....	
Helder	29.48	748.7	29.48	748.7	45.3	7.4	.....	WSW	.....	.....	2	.....	.....	.....	.....	0.031	0.8	.....	
Hellevoetsluis	.....	.....	29.48	748.9	44.6	7.0	91	SE	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	
Utrecht	29.47	748.4	29.51	749.6	43.3	6.3	88	S	.....	.....	2	.....	5	.....	.....	0.091	2.3	Cloudy	H. v d Brink.

NOTE.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	29.22	742.1	29.27	743.5	40.3	4.6	74	N	28.2	12.6	.....	.....	3	.....	.....	0.031	0.8	.....	
Brönö	29.16	740.7	29.20	741.7	35.6	2.0	73	NE	7	3	.....	.....	4	.....	.....	0	0	.....	
Christiania	28.99	736.3	29.14	740.1	33.3	0.7	87	NE	0	0	.....	.....	10	.....	.....	0	0	.....	
Tromsö	29.13	739.8	29.17	740.9	30.9	— 0.6	81	S	7	3	.....	.....	0	.....	.....	0	0	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	29.65	753.2	29.84	758.0	66.6	19.2	94	SW	7.4	3.3	.....	.....	7	.....	.....	0.079	2.0	.....	Dr. J. A. Sampaio.
Campo Major	29.16	740.6	30.21	767.4	45.9	7.7	94	W	1.8	0.8	.....	.....	10	.....	.....	0	0	.....	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.07	763.7	30.15	765.9	72.0	22.2	67	SW	6.3	2.8	.....	.....	3	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.52	757.4	30.18	766.5	60.4	15.8	72	SW	12.5	5.6	.....	.....	6	W	.....	0	0	.....	The Staff.
Ponta Delgada, (Azores)	29.85	758.2	29.92	760.0	66.6	19.2	96	SE	6.3	2.8	.....	.....	10	.....	.....	0.165	4.2	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 9 h. 6 m., p. m

Naval Series. Vessels.	Sea or swell. Height scale 0–9	Sea or swell. Direction from—		
S. S. India.	.....	.....	.....	§ A. D. Pedroso, Com'd't. ‡ Lt. S. A. P. de Mirando
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....

Note.—The originals give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.22	742.1	29.65	753.0	42.3	5.7	80	SW	20	9	.....	.....	10	.....	.....	.....	.....	.....	Astronomical Obs.
Wilna	29.10	739.1	29.52	749.9	41.4	5.2	89	S	4	2	.....	.....	10	.....	.....	.....	.....	Raining	Astronomical Obs.
Dorpat	29.12	739.6	29.36	745.8	41.4	5.2	90	S	11	5	.....	.....	10	.....	.....	.....	.....	.....	Prof. Dr. Weihrauch.
St. Petersburg	29.40	746.7	29.41	747.1	41.7	5.4	85	S	13	6	.....	.....	10	.....	.....	.....	.....	.....	Central Physical Obs.
Kuopio	28.93	734.7	29.24	742.8	39.2	4.0	95	S	18	8	.....	.....	10	.....	.....	.....	.....	Raining	Ch. Forsten.
Kieff	29.06	738.1	29.71	754.5	41.4	5.2	94	NW	2	1	.....	.....	10	.....	.....	Blank	Blank	.....	Physical Cabinet.
Nikolaiev	29.63	752.5	29.70	754.3	51.1	10.6	95	S	4	2	.....	.....	10	.....	.....	.....	.....	.....	Kurdakof.
Kertch	29.64	752.8	29.66	753.3	57.9	14.4	86	SE	2	1	.....	.....	9	.....	.....	.....	.....	Light clouds	Lagorio.
Moscow	29.22	742.2	29.78	756 3	40.6	4.8	94	S	4	2	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Lugan	29.55	750.6	29.76	755 8	46.2	7.9	89	E	13	6	.....	.....	10	.....	.....	Blank	Blank	.....	Meteorological Obs.
Archangel	29.44	747.8	29.46	748.3	36 3	2.4	96	SSE	13	6	.....	.....	10	.....	.....	.....	.....	.....	Ogorodnikof.
Tiflis	28.63	727.3	30.09	764.3	43.0	6.1	72	Calm	0	0	.....	.....	10	.....	.....	.....	.....	.....	Physical Observatory.
Astrakhan	30.11	764.8	30.03	762.7	40.3	4.6	56	ESE	11	5	.....	.....	7	.....	.....	.....	.....	.....	Sebastianof.
Kasan	29.84	757.9	30.12	765.1	31.5	— 0.3	90	S	16	7	.....	.....	10	.....	.....	.....	.....	.....	Physical Cabinet.
Orenburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Tschernischef.
Ekaterinburg	29.32	744 8	30.32	770.2	28.2	— 2.1	85	WSW	13	6	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Nukuss	30.06	763.5	30.31	769.8	27.7	— 2.4	65	NNE	9	4	.....	.....	0	.....	.....	.....	.....	.....	
Kasaly	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Bobrof.
Tashkend	28.65	727.7	30.48	774.1	29.1	— 1.6	72	NW	2	1	.....	.....	10	.....	.....	.....	.....	.....	Michelson.
Barnaul	29.98	761.5	30.54	775.8	21.4	— 5.9	87	SW	9	4	.....	.....	10	.....	.....	.....	.....	Snowing	Meteorological Obs.
Yeniseisk	29.85	758.1	30.19	766.8	23.7	— 4.6	91	SW	11	5	.....	.....	6	.....	.....	Blank	Blank	.....	Marks.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Useizef.
Oorga	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Mossin.
Peking, (China)	30.31	769.8	30.45	773.4	34.9	1.6	61	Calm	0	0	.....	.....	7	.....	.....	.....	.....	.....	Physical Observatory.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nikolaievsk, on the Amoor	.....	.....	.....	.....	10.4	—12.0	93	Calm	0	0	.....	.....	10n	.....	.....	.....	.....	Snowing	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 494.9? m., or 1,621.3? ft.; Irkutsk, 502 m., or 1,238 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft. ☞At Ekaterinburg the latest levellings show that the altitude of the barometer has always been 267 m., or 875.9 ft., instead of 306.4? m., or 1,005.2? ft.

SPANISH SERIES.

Furnished by the cooperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Rave, Director.
Bilbao, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Manuel de Naveran
Burgos, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Domingo Martin y Perez.
Madrid, Royal Observatory	27.85	707.4	30.16	766.0	42.6	5.9	93	S	2.2	1.00	.....	0	10	.....	.....	0.008	0.2	Covered	The Staff.
Murcia, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Olayo Diaz, Director.
Santiago, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.93	760.2	30.00	761.9	71.2	21.7	87	Calm	0	0	.....	6ck	0	WSW	.....	0	0	Fair	Benito Vines, S. J.
San Fernando, Naval Obs'y.	30.13	765.4	30.23	767.9	59.0	15.0	72	WNW	10.3	4.3	.....	0	9	.....	WNW	0	0	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W.I.	.....	.....	29.85	758.2	77.7	25.4	90	SW	0	0	.....	2k	2k	.....	.....	0	0	Clear	Leonardo de Tejeda, Chief of Engineers.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the cöoperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.18	741.2	29.22	742.2	33.4	0.8	.....	E	.....	.....	2	.....	0	.....	.....	0.276	7.0	.....	
Umea	29.08	738.8	29.13	739.9	36.0	2.2	100	NNE	.....	.....	2	.....	10	.....	.....	0.354	9.0	Foggy	
Hernosand	29.03	737.4	29.08	738 7	37.4	3.0	93	NE	.....	.....	2	.....	10	.....	.....	0.181	4.6	.....	
Stockholm	28.90	734.1	29.08	738.6	40.3	4.6	99	SW	.....	.....	2	.....	10	.....	.....	0.008	0.2	Raining	
Wisby	29.06	738.0	29.11	739.5	41.7	5.4	91	SW	.....	.....	6	.....	7	.....	.....	0.217	5.5	.....	
Sub-Series.																			
Upsala	29.00	736.7	29.08	738.6	38.7	3.7	96	Calm	0	0	.....	.....	10	.....	.....	0.228	5.80	.....	Dr. Hildebrandsson.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.35	720.1	29.78	756.5	52.2	11.2	64	WNW	.....	.....	2	.....	10	.....	.....	0.028	0.7	Covered	The Observatory.
Zurich	28.08	713.1	29.76	756.0	39.2	4.0	92	W	.....	.....	1	.....	10	.....	.....	0.402	10.2	Covered	The Observatory.
.....																			
.....																			
.....																			

Note.—For Geneva the corresponding departures from the normal values are: Barometer, —6.6 mm; Thermometer, +6.0 cent.; Relative Humidity, —14 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 476 m., or 1,562 ft.

TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	29.74	755.3	51.4	10.8	95	NW	17	7.5	.....	.....	10	.....	NW	0.984	25.0	.....	The Observatory.
Fao, (Persian Gulf)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salonica	.....	.....	29.87	758.8	63.5	17.5	.....	NW	.....	.....	6	.....	0	.....	.....	.....	.....	.....	B. Stefanides.
Valona	.....	.....	29.98	761.5	61.9	16.6	.....	W	.....	.....	1	.....	2	.....	.....	0.43	11.	Slightly cl'dy	A. Bertrand.
Varna	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Imperial Observatory.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.64	752.8	29.76	755.9	65.5	18.6	80	SW	.....	.....	3	.....	5n	.....	SW	1.84	46.7	D. clouds	Prof. C. V. A. Van Dyck.

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	30.54	775.7	30.61	777.5	26.7	— 2.9	96	Calm	0	0	.....	0	.....	.....	.....	.....	.....	.....	Hon. J. Ferguson.
Brockville, Ontario	.....	.....	30.28	769.1	38	3.3	.....	E	2	0.9	.....	.....	10s	.....	E	0.28	7.1	Cloudy	W. R. Bigg.
*Chatham, N. B	.....	.....	30.60	777.2	28	— 2.2	96	NE	2	0.9	.....	0	0	.....	.....	0	0	Clear	G. A. Blair.
Charlottetown, P. E. Island	.....	.....	30.54	775.7	36	2.2	85	N	4	1.8	.....	0	0	.....	.....	0	0	Clear	H. J. Cundall, C. E.
Cornwall, Ontario	30.09	764.3	30.29	769.4	34.4	1.3	100	NE	.....	.....	1	.....	10s	.....	.....	0	0	Cloudy	James Smith, M. A.
Dalhousie, N. B	30.58	776.7	30.62	777.7	27	— 2.8	88	W	.....	.....	1	.....	.....	.....	.....	0	0	Bright	H. A. Johnson.
Esquimault, B. C	29.74	755.4	29.79	756.7	44.8	7.1	88	SE	.....	.....	.....	.....	10	.....	.....	1.07	27.2	Cloudy	W. H. Bevis.
*Father Point, Quebec	.....	.....	30.58	776.7	31	— 0.6	97	Calm	0	0	.....	2k	8s	SW	SW	0	0	Cloudy	J. McWilliams.
Fredericton, N. B	30.55	776.0	30.62	777.7	31.5	— 0.3	86	NW	1.0	0.4	.....	1c	0	.....	.....	0	0	Clear	Prof. Harrison.
*Fort Garry, Manitoba	.....	.....	29.74	755.4	32	0.0	96	SE	2	0.9	.....	.....	10n	.....	.....	0.32	8.1	Cloudy	James Stewart.
Goderich, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	H. J. Strang, M. A
Granton, Ontario	28.81	731.8	29.92	760.0	45	7.2	100	E	.....	.....	2	.....	10n	.....	.....	?	?	Raining	James Grant.
*Halifax, N. S	30.32	770.1	30.46	773.7	34	1.1	92	N	11	4.9	.....	0	0	.....	.....	0	0	Clear	F. Allison, M. A.
Hamilton, Ontario	29.70	754.4	30.08	764.0	44.7	7.1	95	E	.....	.....	2	10cs	.....	E	.....	0.90	22.9	Raining	Geo. Dickson, M. A
Heart's Content, N. F	30.20	769.4	30.32	770.1	35	1.7	80	NE	.....	.....	1	.....	10	.....	.....	0	0	Overcast	E. Weedon.
*Kingston, Ontario	29.89	759 2	30.24	768.1	43	6.1	81	NE	3	1.3	.....	.....	10ks	.....	Calm	0.26	6.6	Cloudy	S. Woods, M. A.
Little Glace Bay, N. S	30.41	772.4	30.45	773.4	39.2	4.0	77	N	8	3.6	.....	2c	.....	N	.....	0	0	Fair	C. H. Rigby.
*Montreal, Quebec	30.16	766.1	30.37	771.4	34	1.1	97	NE	4	1.8	.....	.....	Fog	.....	.....	0.17	4.3	Foggy	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.40	746.7	30.10	764.5	45	7.2	92	SE	19	8.5	.....	5k	5ks	E	E	Inap.	Inap.	Cloudy	Rev. R. Mosley.
Peterboro, Ontario	29.39	746.5	30.16	766.1	42.7	5.9	92	E	.....	.....	2	.....	10n	.....	.....	0.46	11.7	Foggy	J. F. Jeffers, B. A.
Port Dover, Ontario	29.24	742.7	29.93	760.2	47	8.3	100	NE	17	7.6	.....	.....	10n	.....	NE	0.48	12.2	Heavy rain..	H. Morgan.
Port Hastings, N. S	30.42	772 7	30.47	773.9	38.6	3.7	.....	W	2	0.9	.....	.....	.....	.....	.....	0	0	Fine	Peter Grant.
Port Stanley, Ontario	29.27	743.4	29.92	760.0	48	8.9	96	NE	14	6.3	.....	.....	10n	.....	E	0.26	6.6	Light rain ...	M. Payne.
*Quebec, Quebec	30.18	766.6	30.51	774.9	36	2.2	80	E	15	6.7	.....	2c	Haze	.....	.....	0.05	1.3	Fair	Capt. Ashe, R. N.
*Rockliffe, Ontario	29.78	756.4	30.25	768.3	39	3.9	90	E	10	4.6	.....	.....	10s	.....	E	0.03	0.8	Cloudy	W. H. McIntyre.
St. John, N. B	30.38	771.6	30.57	776.5	30	— 1.1	94	N	3	1.3	.....	0	0	.....	.....	0	0	Clear	G. Murdock, C. E.
*Saugeen, Ontario	29.29	744.0	30.00	762.0	47	8.3	91	E	9	4.0	.....	.....	10ks	.....	.....	0.10	2.5	Cloudy	K. Stewart.
Stayner, Ontario	.....	.....	30.09	764.3	40	9.4	96	SE	5	2.2	.....	.....	10n	.....	SE	0.13	3.3	Light rain ...	R. J. Cole.
Stratford, Ontario	28.68	728.5	29.97	761.2	44.1	6.7	97	SE	18.0	8.0	.....	.....	10n	.....	.....	.....	.....	Raining	C. J. MacGregor, M. A.
*Sydney, C. B	30.45	773.4	30.48	774.2	39	3.9	80	N	8	3.6	.....	8k	2ks	NE	NE	0	0	Fair	T. C. Hill.
*Toronto, Ontario	29.68	753.9	30.07	763.8	43	6.1	95	E	19	8.5	.....	.....	10n	.....	E	0.51	13.0	Heavy rain..	Magnetic Observatory.
Windsor, N. S	30.42	772.7	30.51	774.9	34.5	1.4	80	N	8	3.6	.....	2c	0	.....	.....	0	0	Clear	Prof. John E. Oram.
Woodstock, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Montgomery.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	34.0	1.1	90	N	.....	.....	.....	10ks	.....	.....	.....	Inap.	Inap.	Cloudy	John Delany.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Byt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	30.10	764.5	30.33	770.4	40	4.4	83	Calm	0	0	.....	.....	10s	.....	Calm	Inap.	Inap.	Cloudy	
Alpena, Michigan	29.32	744.7	29.97	761.2	44	6.7	100	E	6	2.7	.....	.....	Fog	.....	Calm	0.04	1.0	Foggy	
Atlantic City, New Jersey	30.05	763.3	30.07	763.8	55	12.8	93	E	44	19.7	.....	.....	10n	.....	NE	0.04	1.0	Light rain	
Augusta, Georgia	29.64	752.8	29.83	757.7	54	12.2	80	SW	6	2.7	.....	.....	10n	.....	NE	0.04	1.0	Light rain	
Baltimore, Maryland	29.88	758.9	29.92	760.0	56	13.3	93	E	27	12.1	.....	0	8s	.....	W	0.18	4.6	Cloudy	
Barnegat, New Jersey	30.10	764.5	30.13	765.3	53	11.7	90	E	36	16.1	.....	.....	10n	.....	E	1.61	40.9	Light rain	
Bismarck, Dakota	28.07	713.0	29.78	756.4	33	0.6	89	Calm	0	0	.....	8cs	2s	S	.....	0	0	Cloudy	
Boise City, Idaho	27.45	697.2	30.20	767.1	32	0.0	79	S	4	1.8	.....	5cs	0	Calm	.....	0.29	7.4	Fair	
Boston, Massachusetts	30.28	769.1	30.44	773.2	44	6.7	68	E	15	6.7	.....	1c	0	Calm	.....	0.08	2.0	Clear	
Bracketville, Texas	28.70	729.0	29.71	754.6	61	16.1	80	N	5	2.2	.....	.....	10s	.....	E	0	0	Cloudy	
Breckenridge, Minnesota	28.64	727.4	29.64	752.8	35	1.7	90	NW	10	4.5	.....	.....	10s	.....	Calm	0	0	Cloudy	
Brownsville, Texas	29.85	758.2	29.92	760.0	67	19.4	90	SE	4	1.8	.....	.....	10s	.....	NW	Inap.	Inap.	Cloudy	
Buffalo, New York	29.24	742.7	29.94	760.5	47	8.3	100	NE	19	8.5	.....	0	0	.....	.....	0	0	Clear	
Burlington, Vermont	30.12	765.0	30.39	771.9	40	4.4	83	S	7	3.1	.....	.....	10n	.....	NE	0.53	13.5	Light rain	
Cairo, Illinois	29.56	750.8	29.96	761.0	42	5.6	83	NW	6	2.7	.....	8c	0	Calm	.....	0.02	0.5	Fair	
Camp Grant, Arizona	25.22	640.6	30.02	762.5	47	8.3	15	N	.....	.....	1	0	0	.....	Calm	0	0	Cloudy	
Camp Verde, Arizona	26.88	682.7	30.36	771.1	32	0.0	59	NW	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Campo, California	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Cape Hatteras, N. Carolina	29.77	756.1	29.78	756.4	62	16.7	100	Calm	0	0	.....	.....	10n	.....	Calm	2.03	51.6	Light rain	
Cape Henry, Virginia	29.82	757.4	29.85	758.2	60	15.6	100	SE	14	6.3	.....	.....	10n	.....	Calm	1.94	49.3	Light rain	
Cape Lookout, N. Carolina	29.81	757.2	29.82	757.4	63	17.2	94	W	5	2.2	.....	8k	0	SW	.....	2.50	63.5	Cloudy	
Cape May, New Jersey	29.98	761.5	30.00	762.0	58	14.4	93	E	36	16.1	.....	.....	10s	.....	E	0.40	10.2	Cloudy	
Charleston, South Carolina	29.82	757.4	29.89	759.2	55	12.8	87	SW	9	4.0	.....	0	5s	.....	SW	0.02	0.5	Fair	
Cheyenne, Wyoming	23.89	606.8	29.83	757.7	27	— 2.8	88	NW	32	14.3	.....	.....	10n	.....	NW	Inap.	Inap.	Light snow	
Chicago, Illinois	29.16	740.7	29.85	758.2	46	7.8	92	E	7	3.1	.....	.....	10s	.....	Calm	0	0	Cloudy	
Cincinnati, Ohio	29.03	737.3	29.66	753.4	52	11.1	86	N	10	4.5	.....	.....	10s; fg	.....	N	0.10	2.5	Cloudy	
Cleveland, Ohio	29.10	739.1	29.81	757.2	54	12.2	73	NE	9	4.0	.....	.....	10s	.....	Calm	0.19	4.8	Cloudy	
Concho, Texas	27.88	708.1	29.52	749.8	55	12.8	93	SW	16	7.2	.....	8cs	0	SW	.....	0	0	Cloudy	
Corsicana, Texas	29.34	745.2	29.80	756.9	54	12.2	86	S	8	3.6	.....	Haze	8s	Calm	.....	0	0	Cloudy	
Davenport, Iowa	29.26	743.2	29.91	759.7	39	3.9	80	E	1	0.4	.....	.....	10s	.....	S	0	0	Cloudy	
Denison, Texas	28.92	734.6	29.70	754.4	53	11.7	93	S	20	8.9	.....	.....	10s	.....	Calm	0	0	Cloudy	
Denver, Colorado	24.70	627.4	29.92	760.0	34	1.1	18	NW	20	8.9	.....	.....	10ks	.....	S	0	0	Cloudy	
Detroit, Michigan	29.16	740.7	29.82	757.4	50	10.0	100	NE	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Dodge City, Kansas	27.11	688.6	29.39	746.5	40	4.4	79	N	24	10.7	.....	.....	10n	.....	Calm	0.21	5.3	Light rain	
Dubuque, Iowa	29.22	742.2	29.93	760.2	36	2.2	90	S	1	0.4	.....	0	5s	.....	N	0	0	Fair	
Duluth, Minnesota	29.13	739.9	29.82	757.4	37	2.8	80	S	5	2.2	.....	.....	10s	.....	Calm	0	0	Cloudy	
Eagle Pass, Texas	29.05	737.9	29.79	756.7	52	11.1	93	SE	1	0.4	.....	.....	10s	.....	S	0	0	Cloudy	
Eastport, Maine	30.49	774.4	30.56	776.2	39	3.9	71	NE	16	7.2	.....	.....	Fog	.....	Calm	0	0	Foggy	
Erie, Pennsylvania	29.11	739.4	29.81	757.2	51	10.6	93	E	16	7.2	.....	0	Haze	.....	Calm	0	0	Clear	
Escanaba, Michigan	29.32	744.7	29.99	761.7	38	3.3	81	Calm	0	0	.....	.....	10s	.....	SE	0.52	13.2	Cloudy	
Florence, Arizona	28.45	722.6	30.05	763.3	40	4.4	18	N	.....	.....	.....	.....	10s	.....	Calm	0	0	Cloudy	
Fort Bayard, New Mexico	24.01	609.8	30.01	762.2	39	3.9	31	SW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Fort Craig, New Mexico	25.47	646.9	.....	.....	42	5.6	50	SW	18	8.0	.....	0	0	.....	.....	0	0	Clear	
Fort Gibson, Indian Ter	29.16	740.7	29.69	754.1	50	10.0	64	S	16	7.2	.....	0	0	.....	.....	0	0	Clear	
Fort Griffin, Texas	28.40	721.3	29.64	752.8	56	13.3	62	S	12	5.4	.....	5c	0	W	.....	0	0	Fair	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	2s	.....	Calm	0	0	Fair	
Fort Sill, Indian Territory	28.39	721.1	29.48	748.8	47	8.3	85	Calm	0	0	.....	0	5s	.....	W	0	0	Fair	
Galveston, Texas	29.89	759.2	29.94	760.5	62	16.7	88	S	4	1.8	.....	0	2s	.....	W	0	0	Fair	
Grand Haven, Michigan	29.27	743.4	29.92	760.0	46	7.8	92	NE	8	3.6	.....	.....	10n	.....	Calm	0.01	0.3	Light rain	
Indianapolis, Indiana	28.99	736.3	29.76	755.9	48	8.9	92	NW	4	1.8	.....	.....	10s	.....	Calm	0.05	1.3	Cloudy	
Indianola, Texas	29.89	759.2	29.91	759.7	65	18.3	89	S	12	5.4	.....	10k	0	S	.....	0	0	Cloudy	
Jacksboro, Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Jacksonville, Florida	29.93	760.2	29.95	760.7	52	11.1	72	W	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Keokuk, Iowa	29.24	742.7	29.87	758.7	41	5.0	83	SE	4	1.8	.....	.....	10s	.....	Calm	0	0	Cloudy	
Key West, Florida	29.95	760.7	29.98	761.5	72.0	22.2	67	N	6	2.7	.....	8k	0	W	.....	0	0	Fair	
Kittyhawk, North Carolina	29.81	757.2	29.84	757.9	61	16.1	100	S	3	1.3	.....	.....	10s	.....	W	0.64	16.3	Cloudy	
Knoxville, Tennessee	28.77	730.7	29.76	755.9	48	8.9	92	SW	16	7.2	.....	.....	10n	.....	SW	1.42	36.1	Light rain	
La Crosse, Wisconsin	29.12	739.6	29.87	758.7	40	4.4	82	S	8	3.6	.....	.....	10s	.....	S	0	0	Cloudy	
La Mesilla, New Mexico	26.04	661.4	30.19	766.8	37	2.8	48	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Laredo, Texas	.....	.....	.....	.....	65	18.3	89	S	4	1.8	.....	10k	0	Calm	.....	0	0	Cloudy	
Leavenworth, Kansas	28.92	734.6	29.76	755.9	41	5.0	73	SE	3	1.3	.....	10cs	0	Calm	.....	0	0	Cloudy	
Los Angeles, California	29.69	754.1	30.03	762.7	50	10.0	86	N	5	2.2	.....	0	2s	.....	N	0	0	Clear	
Louisville, Kentucky	29.20	741.7	29.76	755.9	49	9.4	93	NW	12	5.4	.....	.....	10s	.....	NW	0.10	2.5	Cloudy	
Lynchburg, Virginia	29.07	738.4	29.72	754.9	59	15.0	88	SE	4	1.8	.....	.....	10ks	.....	SE	4.23	107.4	Cloudy	
Maricopa Wells, Arizona	.....	.....	.....	.....	35	1.7	53	E	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Marquette, Michigan	29.22	742.2	29.93	760.2	39	3.9	71	SE	4	1.8	.....	.....	10s	.....	Calm	0	0	Cloudy	
Mason, Texas	28.18	715.8	29.90	759.4	59	15.0	81	SW	8	3.6	.....	.....	10s	.....	.....	0	0	Cloudy	
Memphis, Tennessee	29.66	753.4	29.99	761.7	37	2.8	100	Calm	0	0	.....	.....	Fog	.....	Calm	Inap.	Inap.	Foggy	
Milwaukee, Wisconsin	29.21	741.9	29.89	759.2	48	8.9	100	NE	5	2.2	.....	.....	10n	.....	.....	0.02	0.5	Light rain	
Mobile, Alabama	29.98	761.5	30.02	762.5	43	6.1	91	NW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Montgomery, Alabama	29.75	755.6	29.99	761.7	50	10.0	78	W	6	2.7	.....	.....	10s	.....	NW	0	0	Cloudy	
Morgantown, West Virginia	28.67	728.2	29.69	754.1	57	13.9	75	NE	4	1.8	.....	0	8s	.....	NE	1.43	36.3	Fair	
Mt. Washington, N. H.	24.07	611.4	30.43	772.9	29	— 1.7	67	S	36	16.1	.....	8ck	5s	W	S	0	0	Cloudy	
Nashville, Tennessee	29.34	745.2	29.88	758.9	45	7.2	92	W	9	4.0	.....	.....	10s	.....	W	Inap.	Inap.	Cloudy	
New Haven, Connecticut	30.24	768.1	30.36	771.1	40	4.4	83	NE	16	7.2	.....	.....	10s	.....	E	0	0	Cloudy	
New London, Connecticut	30.32	770.1	30.37	771.4	42	5.6	83	NE	9	4.0	.....	2cs	3s; ks	W	Calm	0	0	Fair	
New Orleans, Louisiana	29.96	761.0	30.02	762.5	51	10.6	65	NE	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Newport, Rhode Island	30.36	771.1	30.41	772.4	42	5.6	74	NE	4	1.8	.....	.....	10ks	.....	E	0	0	Cloudy	
New York, New York	30.07	763.8	30.25	768.3	46	7.8	85	NE	28	12.5	.....	.....	10s; fg	.....	NE	0	0	Cloudy	
Norfolk, Virginia	29.78	756.4	29.83	757.7	61	16.1	100	S	4	1.8	.....	.....	10n	.....	Calm	1.27	32.3	Light rain	
North Platte, Nebraska	26.92	683.8	29.52	749.8	34	1.1	85	NW	12	5.4	.....	5c	2s	Calm	NW	0	0	Fair	
Olympia, Washington Ter.	29.91	759.7	29.95	760.7	42	5.6	91	S	8	3.6	.....	.....	10n	.....	Calm	1.11	28.2	Heavy rain	
Omaha, Nebraska	28.65	727.7	29.73	755.1	41	5.0	83	SE	5	2.2	.....	.....	10s	.....	Calm	0	0	Cloudy	
Oswego, New York	29.83	757.7	30.15	765.8	47	8.3	73	SE	19	8.5	.....	.....	10s	.....	SE	0.03	0.8	Cloudy	
Pembina, Dakota	28.86	733.0	29.71	754.6	33	0.6	100	SE	2	0.9	.....	.....	10n	.....	Calm	0.21	5.3	Light rain	
Philadelphia, Pennsylvania	30.06	763.5	30.11	764.8	53	11.7	93	E	32	14.3	.....	.....	10n	.....	E	0.09	2.3	Light rain	
Phœnix, Arizona	.....	.....	.....	.....	40	4.4	40	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Pike's Peak, Colorado	17.51	444.7	29.72	754.9	—7	—21.7	100	NE	48	21.5	.....	.....	10n	.....	NE	0.10	2.5	Light snow	
Pioche, Nevada	24.21	614.9	29.98	761.5	28	— 2.2	65	N	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Pittsburg, Pennsylvania	28.91	734.3	29.69	754.1	55	12.8	80	SE	16	7.2	.....	5cs	0	SE	.....	1.69	42.9	Fair	
Port Huron, Michigan	29.22	742.2	29.88	758.9	47	8.3	100	NE	9	4.0	.....	.....	10n	.....	Calm	0.07	1.8	Light rain	
Portland, Maine	30.45	773.4	30.50	774.7	39	3.9	91	N	9	4.0	.....	.....	10s	.....	Calm	Inap.	Inap.	Cloudy	
Portland, Oregon	30.07	763.8	30.17	766.3	45	7.2	92	S	3	1.3	.....	.....	10n	.....	Calm	0.33	13.5	Light rain	
Prescott, Arizona	24.89	632.2	30.25	768.3	29	— 1.7	67	S	.....	.....	.....	8c	0	Calm	.....	0	0	Fair	
Punta Rassa, Florida	29.98	761.5	30.00	762.0	65	18.3	73	N	5	2.2	.....	.....	5ks	.....	W	0	0	Fair	
Red Bluff, California	29.90	759.4	30.27	768.8	42	5.6	82	N	6	2.7	.....	Haze	0	Calm	.....	0	0	Clear	
Rochester, New York	29.46	748.3	30.08	764.0	43	6.1	91	E	7	3.1	.....	.....	10s	.....	SE	0.04	1.0	Threatening	
Roseburg, Oregon	29.72	754.9	30.31	769.9	42.5	5.8	83	S	4	1.8	.....	8cs	2s	W	Calm	0.42	10.7	Cloudy	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Sacramento, California	30.16	766.1	30.25	768.3	43	6.1	75	N	8	3.6	.....	0	0	.....	.....	0	0	Clear	
St. Louis, Missouri	29.33	745.0	29.91	759.7	42	5.6	83	NW	2	0.9	.....	.....	Fog	.....	.....	0	0	Foggy	
St. Marks, Florida	29.96	761.0	29.98	761.5	44	6.7	96	NW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
St. Paul, Minnesota	28.92	734.6	29.75	755.6	35	1.7	70	SE	11	4.9	.....	2cs	5s	S	S	0	0	Fair	
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salt Lake City, Utah	25.90	657.8	30.23	767.8	32	0.0	69	SE	3	1.3	.....	10k	0	NW	.....	0.22	5.6	Cloudy	
San Antonio, Texas	29.15	740.4	29.72	754.9	62	16.7	94	S	2	0.9	.....	0	10ks	.....	S	0	0	Cloudy	
San Diego, California	29.96	761.0	30.03	762.7	52	11.1	86	NE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Sandusky, Ohio	29.12	739.6	29.78	756.4	48	8.9	100	NE	24	10.7	.....	.....	10s	.....	E	0.36	9.1	Threatening	
Sandy Hook, New Jersey	30.19	766.8	30.22	767.6	48	8.9	82	E	42	18.8	.....	.....	10s	.....	E	0	0	Cloudy	
San Francisco, California	30.18	766.6	30.25	768.3	52	11.1	72	N	6	2.7	.....	0	0	.....	.....	Inap.	Inap.	Clear	
Santa Fé, New Mexico	23.17	588.5	29.71	754.6	33	0.6	43	NW	1	0.4	.....	Haze	0	.....	.....	0	0	Clear	
Savannah, Georgia	29.82	757.4	29.92	760.0	55	12.8	80	W	6	2.7	.....	.....	10s	.....	W	0	0	Cloudy	
Shreveport, Louisiana	29.71	754.6	29.93	760.2	46	7.8	84	SE	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Smithville, North Carolina	29.82	757.4	29.85	758.2	59	15.0	82	SW	8	3.6	.....	0	1s	.....	S	1.16	29.5	Clear	
Springfield, Massachusetts	30.21	767.3	30.35	770.9	42	5.6	65	NE	4	1.8	.....	.....	10s	.....	NE	0	0	Cloudy	
Stanwix, Arizona	.....	.....	.....	.....	40	4.4	39	Calm	.....	.....	.....	8c	0	N	.....	0	0	Fair	
Stockton, Texas	26.83	681.5	29.83	757.7	50	10.0	32	SW	8	3.6	.....	0	5s	.....	SW	0	0	Fair	
Thatcher's Island, Mass	30.40	772.1	30.46	773.7	46	7.8	76	E	16	7.2	.....	.....	10s	.....	SE	0	0	Cloudy	
Toledo, Ohio	29.12	739.6	29.79	756.7	48	8.9	100	NE	16	7.2	.....	.....	10n	.....	NE	0.36	9.1	Light rain	
Tucson, Arizona	27.64	702.0	30.19	766.8	39	3.9	30	S	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Tybee Island, Georgia	29.87	758.7	29.90	759.4	50	10.0	93	SW	7	3.1	.....	10k	0	W	.....	0.06	1.5	Cloudy	
Umatilla, Oregon	29.79	756.7	.....	.....	45	7.2	76	SW	8	3.6	.....	.....	10n	.....	W	0.14	3.6	Light rain	
Vicksburg, Mississippi	29.76	755.9	30.02	762.5	42	5.6	83	SE	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Virginia City, Montana	24.33	618.0	29.81	757.2	20	— 6.7	70	W	10	4.5	.....	0	0	....	.....	0.20	5.1	Clear	
Visalia, California	29.89	759.2	30.28	769.1	39	3.9	91	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Washington, D. C.	29.76	755.9	29.87	758.7	57	13.9	100	E	10	4.5	.....	.....	10n	.....	E	1.88	47.8	Heavy rain	
Wickenburg, Arizona	.....	.....	.....	.....	33	0.6	23	NW	.....	.....	.....	2c	0	Calm	.....	0	0	Fair	
Wilmington, N. Carolina	29.75	755 6	29.82	757.4	57	13.9	87	SW	6	2.7	.....	0	0	.....	.....	0.46	11.7	Clear	
Winnemucca, Nevada	25.88	657 3	30.24	768.1	22	— 5.6	72	Calm	0	0	.....	0	0	.....	.....	0.02	0.5	Clear	
Wood's Holl, Mass	30.36	771.1	30.41	772.4	48	8.9	62	E	8	3.6	.....	.....	10s	.....	E	0	0	Cloudy	
Yankton, Dakota	28.52	724.4	29.82	757.4	34	1.1	84	NW	8	3.6	.....	10c	2s	NW	NW	0	0	Cloudy	
Yuma, Arizona	29.89	759.2	30.05	763.3	58	14.4	44	W	4	1.8	.....	5cs	0	W	.....	0	0	Fair	
SUB-SERIES.																			
York Factory, B. A.	29.53	750.0	29.59	751.6	18.5	— 7.5	92	SW	8	3.6	.....	0	0	.....	.....	0	0	Clear	J. Fortescue, W. Wood.
Havana, Cuba, W. I.	29.91	759.7	29.93	760.2	74	23.3	76	Calm	0	0	.....	8ck	0	Calm	....	0	0	Fair	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.08	764.0	30.09	764.3	77	25.0	82	Calm	0	0	.....	2c	0	Calm	.....	0	0	.....	James Gall.
Navassa, W. I.	29.85	758.2	29.93	760.2	81	27.2	.....	NE	6	2.7	.....	.....	.....	.....	.....	0	0	Fair	F. M Everett.
St. Thomas, W. I.	.....	.....	.....	.....	82	27.8	91	Calm	0	0	.....	2c	2k	E	.....	0	0	.....	G. O. Gellich.
Paramaribo, D. Guiana, S. A.	.....	.....	29.95	760.7	85	29.4	72	E	.....	.....	2	4c	5k	E	.....	0	0	Fair	C. J. Hering.
Batavia, Dutch Guiana, S. A	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Dr. H. Groot.
Medellin, Colombia, S. A.	25.22	640.6	.....	.....	66.8	19.3	80	Calm	.....	.....	0	7cs	0	.....	.....	0.24	6.1	Cloudy	Thomas Herran.
Honolulu, Oahu, H. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Daniel Smith.
Makawao, Maui, H. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters: Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573,4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.8 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,870 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard Mare Island, Cal.	30.21	767.3	46	7.8	45	7.2	92	NNE	3	1.3			0			0	0			Lunar halo.	
Navy Yard, Pensacola, Fla.	30.08	764.0			49	9.4	78	NW	5	2.2			4			0	0			D. clouds.	
Navy Yard, Portsmouth, N.H.	30.47	773.9	56	13.3	37	2.8	81	NE	3	1.3			10			0	0			Cloudy.	
Naval Hospital, Yokohama, Japan.	29.56	750.8	60.5	15.8	57.5	14.2	61	WNW			2		0			1.63	41.4			Clear	
Adams. Punta Arenas, Patagonia.	29.90	759.4	45	7.2	45	7.2	84	N			1		10		N	Light	Light	None		D. clouds.	
Alert, Yokohama, Japan.	20.72†	764.9†	62	16.7	62	16.7	88	Calm			0		0							Blue sky.	
Alliance, Constantinople, Turkey.	29.85	758.2	68	20.0	56	13.3	81	NNE			2		10							Raining.	
Ashuelot. N. 37° 21′ E. 122° 49′	30.36	771.1	52	11.1	44	6.7	52	NNW			3		8		N&W			Long; mod'ate	S	D. clouds.	
Canonicus, New Orleans, La.	29.99	761.7	43	6.1	52	11.1	86	E			1									Clear	
Colorado, New York, N. Y.	30.25	768.3	48	8.9	46	7.8	84	E	9	4.0			10		ENE	0	0			Light fog.	
Despatch, Constantinople, Turkey.	29.83	757.7	66	18.9	54	12.2	87	N			3		10		NE					Raining.	
Essex, Clarence, Fernando Po Id.	29.83	757.7	85	29.4	87	30.6	92	NW			0–1		4					Smooth		D. clouds.	
Franklin, Norfolk, Va.	29.94	760.5	62	16.7	63	17.2	89	SE	3.5	1.6			7		SE	0.067	1.70			D. clouds.	
Guard, N. 39° 20′, W. 28° 12′	29.90	759.4	70	21 1	66	18.9	94	SSE			2		9		S&E			Long	S	D. clouds.	
Lackawana, San Francisco, Cal.	30.20	767.1			53	11 7	73	NW			2–3		0							Blue sky.	
Marion, Smyrna, Turkey.	29.81	757.2	62	16.7	60	15.6	94	Calm			0		10		Calm	Light	Light	Smooth		Raining.	
Michigan, Erie, Pa.	29.38	746.2	80	26.7	50	10.0	86	NE			4		10		NE					Raining.	
Monongahela, Alexandria, Egypt.	30.03	762.7	69	20.6	69	20.6	86	NW			3		ck			Light	Light	Smooth		D. clouds.	
New Hampshire, Port Royal, S.C.	30.02	762.5			53	11.7	93	WSW	17	7.6			10		SW	0.01	0.3			D. clouds.	
Omaha, Callao, Peru.	30.08	764.0	74	23.3	74	23.3	90	SE	4	1.8			10		SE	0	0	Smooth		Pleasant.	
Onward, Callao, Peru.	30.04†	763.0†	74	23.3	70	21.1	85	SE			3		5					Long	W	D clouds.	
Ossipee, Norfolk, Va.	29.88	758.9	69	20.6	64	17.8	94	SE			1		6		S					D. clouds.	
Palos, Shanghai, China.	30.33	770.4	57	13.9	49	9.4	85	NNE			1		1		N&E					Clear	
Plymouth. N. 31° 17′, W. 70° 02′	30.22	767.6	73	22.8	71	21.7	95	SE			6–7		10		SE			Heavy	SE	Squally	
Powhatan, Hampton Roads, Va.					60	15.6	100	ESE	6.0	2.7			9			1.40	35.6			Overcast.	
Ranger, Shanghai, China.	30.44	773.2	67	19.4	55	12.8	87	N			2		1		Calm					Clear	
Rio Bravo, Brownsville, Texas.	29.82	757.4			67	19.4	95	SSE			1		4		NW					D. clouds.	
Santee, Annapolis, Md.	29.98	761.5	69	20.6	56	13.3	94	E			6		10		E	1.5	38.			Raining.	
Sara toga, Hampton Roads, Va.					67	19.4	94	SSE			2		10		S	Light	Light			Stormy.	
St. Louis, League Island, Pa.	30.02	762.5	54	12.2	65	18.3	94	NNE	12	5.4			10		E	0.26	6.6			Rainy.	
Swatara, Hampton Roads, Va.	29.91	759.7			61	16.1	94	Calm			0		9		S&E					Misty.	
Tennessee, Yokohama, Japan.	29.63	752.6	70	21.1	59	15.0	70	WNW	3	1.3			1		N&W	1.95	49.5	Smooth		D. clouds.	
Trenton, Villefranche, France.	29.91	759.7			61	16.1	55	W	4	1.8			9		W	0	0	Ground	S	Squally.	
Vandalia, Villefranche, France.	29.80†	756.9†	61	16.1	61	16.1	50	SW			0–2		7		SE			Long	SW	D. clouds.	
Wabash, Boston, Mass.	30.48	774.2	60	15.6	47	8.3	77	E	10	4.5			10		Calm	0	0	smooth		D. clouds.	
Wyoming, Washington, D. C.	30.34†	770.6†	60	15.6	56	13.3		ENE			2		10							Raining.	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. The position given for the Plymouth is that at noon, local time, instead of that at 7:35 a. m., Washington time.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Character.	Direction from—		
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska, Esquimault, B. C.			29.92†	760.0†	49	9.4		E			5		2		Calm			Raining	Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama, Panama Bay			29.71	754.6	78	25.6	92	NW			2		2		Calm			D. clouds	Capt. Howard.
S. S. City of Peking																			Lt. Z. L. Tanner, U.S.N
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio, Yokohama, Japan			29.69	754.1	58	14.4		NNW			5		2		NW			D. clouds	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

NOTE.—The originals give the wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. † Aneroid; corrected for elevation, instrumental error not known.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.

S. S. Belgic																			Capt. John Metcalf.
S. S. Gaelic, N. 30° 05′, W. 152° 10′			29.96*	761.0*	71	21.7	??	SSW			5		k		SW	Long	NW	D. clouds.	Capt. W. H. Kidley
S. S. Oceanic, N. 48° 37′, E. 178° 28′			29.92	760.0	46	7.8	54	N			2		5		N; NE	Moderate.	Confused	Showery	Capt. H. Parsell.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. *Aneriod.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andresson
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig, N. 46° 59′, W. 43° 31′	877½W	13.0	29.81	757.2	46.0	7.8	100	N			8		8		NE	Heavy	ENE	Rain and fog	Capt. K. Undütsch.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio, Baltimore, Md.			29.95	760.7	65.0	12.8	93	ENE			4		10					Raining	Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, nor distinguish between upper and lower clouds.

UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Lo'wr	Upper.	Lower.	Character.	Direction From—		
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second	0—10.	0—10.	0—10.	From—	From—				
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, Liverpool			29.45*	748.0*	40	4.4	100	NW			3		2		NE			Fine	Captain Sargent.
S. S. Ohio. N. 51° 41′, W. 20° 49′			29.91	759.7	47.5	8.6	81	N			7		2		N	Very Heavy	N	Clear	Captain Morrison.
S. S. Pennsylvania, N. 39° 53′, W. 66° 28′			30.33†	770.4†	59	15.0	82	E			3		6		NNE	Light	ENE	Cloudy	Captain Harris.

NOTE.—The originals give the barometer as read off; the wind-force by the scale 0 to 12. *Aneroid; correction for elevation applied, instrumental error not known.
† Corrected for temperature and elevation, instrumental error not known.

RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

S. S. Nederland																			Capt. Randle.
S. S. Switzerland, N. 45° 55′, W. 49° 05′			30.07*	763.8*	42	5.6		NE	30	13.4			10		NE	Heavy	NE	Overcast	Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

*Aneroid; regulated to standard at Antwerp.

ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

S. S. Hibernian																			Capt. W. Richardson.
S. S. Scandinavian																			

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, Kennebunk, Maine			30.47	773.9	41	5.0	91	NE	5	2.2			10s		NE			Overcast	Capt. James Jorgensen.

NOTE.—The originals for the schooner Addie Fuller give the amount of cloudiness by the scale 0 to 4; the barometer as read off.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.,) Chief Signal Officer. U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON NOVEMBER 25, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.

1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:18 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.

1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:38 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours	.....	.....	30.21	767.3	67.6	19.8	65	NW	.....	.....	2	.....	1	.....	.....	0	0	Very fair.....	Michel.
Algiers	.....	.....	30.07	763.7	64.0	17.8	74	N	.....	.....	1	.....	7	.....	.....	0.197	5.0	Very cloudy	Peter.
La Calle	.....	.....	30.01	762.3	64.8	18.2	66	NW	.....	.....	3	.....	4	.....	.....	0.157	4.0	Cloudy	Fleury.
Tunis	.....	.....	30.12	765.1	66.2	19.0	46	W	.....	.....	3	.....	5	.....	.....	0.039	1.0	Cloudy.....	Jacques.
Sfax	.....	.....	30.07	763.7	64.4	18.0	.....	SW	.....	.....	3	.....	4	.....	.....	0	0	Cloudy.....	Husson.
Saida	.....	.....	30.22	767.6	60.3	15.7	41	SSW	.....	.....	1	.....	2	.....	.....	0	0	Fair.....	Millot.
Tebessa	.....	.....	30.08	764.0	.....	.....	.....	W	.....	.....	1	.....	1	.....	.....	.....	.....	Very fair....	Bourgeois.
Geriville	.....	.....	30.17	766.3	52.2	11.8	67	NW	.....	.....	4	.....	5	.....	.....	0	0	Cloudy.....	Lemaillot.
Laghouat	.....	.....	30.19	766.7	64.4	18.0	44	W	.....	.....	2	.....	4	.....	.....	0	0	Cloudy.....	Guyot.
Biskra	.....	.....	30.12	765.0	66.7	19.3	80	NW	.....	.....	4	.....	5	.....	.....	0	0	Cloudy.....	Kuntz.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m.; or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Agram	28.62	726.9	29.15	740.3	59.4	15.2	54	SW	.....	.....	6	.....	10	.....	.....	0.299	7.6	Thunder-storm..	Prof. Ivan Stozir
Cracow, I. R. Observatory..	28.56	725.4	29.32	744.8	44.2	6.8	82	NE	.....	.....	2	.....	10	.....	.....	0.035	0.9	.....	Dr. Wierzbiski.
Eperies	28.57	725.6	29.46	748.2	39.2	4.0	85	S	.....	.....	3	.....	9k;s	.....	.....	0	0	.....	Julius Mikolik.
Gratz	27.97	710.4	29.22	742.2	38.5	3.6	97	NW	.....	.....	7	.....	10	.....	.....	0	0	.....	Andreas Rospini.
Hermannstadt	28.18	715.7	29.60	751.7	48.0	8.9	86	SE	.....	.....	5	.....	3	.....	.....	0	0	.....	Prof. Reissenberger.
Kremsmünster	27.93	709.3	29.28	743.7	37.4	3.0	90	WSW	.....	.....	3	.....	10	.....	.....	0.421	10.7	.....	Prof. C. Wagner.
Lemberg	28.48	723.3	29.47	748.6	40.6	4.8	71	NE	.....	.....	1	.....	8	.....	.....	0	0	.....	Dr. T. Stanecki.
Pola	29.15	740.4	29.26	743.2	50.9	10.5	96	WNW	.....	.....	4	.....	3s	.....	.....	0.111	2 82	.....	I.R.HydrographicOffice
Szathmar	29.10	739.1	29.57	751.0	46.2	7.9	54	E	.....	.....	4	.....	10	.....	.....	0	0	.....	Johann Tamas, S. J.
Szegedin	29.11	739.5	29.39	746.5	53.2	11.8	68	S	.....	.....	4	.....	8	.....	.....	0.086	2.15	.....	Karl Stancel.
Trieste	29.15	740.5	29.26	743.1	54.3	12.4	72	SW	.....	.....	2	.....	10	.....	.....	1.039	26.4	Raining.....	P. Busin.
Vienna	28.56	725.4	29.26	743.2	39.6	4.2	92	W	.....	.....	4	.....	.....	.....	.....	0.433	11.0	.....	I.R. Central Met. Obs'y
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time, and at Trieste at 7 a. m. of the following day. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Arlon	28.03	712.0	29.57	751.1	35.6	2.0	83	NW	.....	.....	7	.....	10	.....	.....	0.087	2.2	.....	Prof. M. Passau.
Brussels	29.43	747.5	29.63	752.6	43.9	6.6	65	NW	.....	.....	3	.....	4	.....	NNW	0.083	2.10	.....	Royal Observatory.
Furnes	29.66	753.3	29.68	753.9	45.7	7.6	99	NW	.....	.....	8	.....	5	.....	.....	0.051	1.3	.....	M. E. de Cae.
Maeseyck	29.34	745.2	29.51	749.5	40.5	4.7	92	N	.....	.....	8	.....	10	.....	.....	0.177	4.5	Raining.....	M. Pierrot.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	29.59	751.6	29.69	754.1	37.5	3.1	.....	W	18	8.0	.....	.....	3	.....	.....	.....	.....	Blue sky.....	W. Boswell.
Ardrossan	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	William McNeil.
Armagh, Observatory	.....	.....	29.92	760.0	40.0	4.4	.....	W	10	4.5	.....	.....	.....	.....	.....	.....	.....	.....	S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)	.....	.....	29.81	757.2	45.4	7.4	.....	WNW	23	10.3	.....	.....	7	.....	.....	.....	.....	D. clouds.....	John Hartnup.
Birr Castle, (Parsonstown)	.....	.....	30.04	763.0	41.5	5.3	.....	SW	.....	.....	1	.....	10	.....	.....	.....	.....	Overcast.....	J. L. E. Dreyer.
Bradford, Yorkshire	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.01	0.3	J. McLandsborough.
Bridgetown, (Barbados)	29.89	759.2	29.90	759.4	83.0	28.3	.....	NE	.....	.....	1	.....	3	.....	.....	.....	.....	D. clouds....	Pvt. G. W. Roberts, A.
Cambridge, Observatory	.....	.....	29.83	757.7	45.0	7.2	.....	NW	.....	.....	1	.....	7	.....	.....	.....	.....	D. clouds....	H. Todd. [H. C.
Cardington	.....	.....	29.84	757.9	43.0	6.1	.....	NW	.....	.....	1	.....	1	.....	.....	.....	.....	Blue sky.....	John McLaren.
Chatham, School M. E	29.73	755.1	29.86	758.4	44.2	6.8	.....	N	.....	.....	1	.....	2	.....	.....	.....	.....	Blue sky....	Lt. W. G. Morris, R. E.
Dartmoor	28.48	723.4	29.99	761.7	39.0	3.9	.....	W	.....	.....	4	.....	4	.....	.....	.....	.....	Snowy.....	Alexander Watt.
Davos Platz (Switzerland)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Francis Redford, M. A.
Donaghadee	29.84	757.9	29.86	758.4	42	5.6	.....	NNW	.....	.....	2	.....	5	.....	.....	.....	.....	D. clouds....	J. Mac Gowan.
Dover	29.81	757.2	29.84	757.9	42	5.6	.....	NNW	.....	.....	5	.....	2	.....	.....	.....	.....	¾ clouded....	J. Costello.
Eccles, (near Manchester)	.....	.....	29.79	756.7	37.0	2.8	.....	NW	.....	.....	.....	.....	10	.....	.....	.....	.....	Foggy	Thomas Mackereth.
Falmouth, Observatory	29.80	756.9	30.03	762.7	46.7	8.2	.....	WNW	.....	.....	3	.....	3	.....	.....	.....	.....	D. c'ouds....	The Staff.
Fort Napier, (Natal)	27.47	697.7	29.65	753.1	95.3	35.2	.....	N	.....	.....	3	.....	8	.....	.....	.....	.....	D. clouds	Pvt. G. Salmon, A.H. C.
Free Town, (Sierra Leone)	.....	.....	29.87	758.7	88.0	31.1	.....	Calm	.....	.....	0	.....	3	.....	.....	.....	.....	D. clouds....	.....
Galway, Queen's College	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	30.13	765.3	30.18	766.6	65.0	18.3	.....	NW	.....	.....	3	.....	6	.....	.....	.....	.....	D. clouds....	Corpl. C. Aitken, A.H.C.
Glasgow, Observatory	29.59	751.6	29.80	756.9	37.9	3.3	.....	SSW	.....	.....	1	.....	6	.....	.....	.....	.....	D. clouds....	D. G. Maclean.
Great Yarmouth	29.70	754.4	29.70	754.4	44	6.7	.....	NW	.....	.....	5	.....	5	.....	.....	.....	.....	D clouds.....	G. T. Watson.
Greenwich, Royal Obs'y	29.67	753.6	29.84	757.9	42.0	5.6	.....	NW	.....	.....	2	.....	5	.....	.....	.....	.....	Thin cloud...	The Staff, for G. B. Airy.
Guernsey	29.74	755.4	29.97	761.2	47	8.3	.....	NW	.....	.....	3	.....	4	.....	.....	.....	.....	D. clouds....	Dr. S. E. Hoskins, F.R.S.
Helston	.....	.....	30.00	762.0	48	8.9	.....	NW	.....	.....	2	.....	4ck	.....	.....	.....	0.73	18.5	D. clouds....	M. P. Moyle.
Holyhead	29.84	757.9	29.90	759.4	46	7.8	.....	NNW	.....	.....	5	.....	8	.....	.....	.....	.....	D. clouds....	John Tilston.
Jersey	29.70	754.4	30.00	762.0	47.0	8.3	.....	NW	.....	.....	5	.....	1	.....	.....	.....	Blank	Blank	Squally.....	J. Fisher.
Kew, Observatory	.....	.....	29.86	758.4	43.5	6.4	.....	WNW	13	5.8	.....	.....	6	.....	.....	.....	.....	.....	Hazy.....	The Staff.
Kingstown	29.92	760.0	29.95	760.7	42	5.6	.....	WNW	.....	.....	4	.....	5	.....	.....	.....	.....	D. clouds....	George Mitchell.
Leicester, Museum	.....	.....	29.82	757.4	43.0	6.1	.....	NW	.....	.....	1	.....	6	.....	.....	.....	.....	D. clouds....	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.86	758.4	29.94	760.5	66.2	19.0	.....	SW	.....	.....	4	.....	4	.....	.....	.....	.....	D. clouds....	Sgt. C. Arbeiter, A.H.C.
Nairn	29.63	752.6	29.72	754.9	36	2.2	.....	W	.....	.....	1	.....	5	.....	.....	.....	.....	½ clouded...	W. D. Penny.
Nassau, (Bahamas)	.....	.....	29.97	761.2	71.0	21.7	.....	NW	.....	.....	1	.....	8	.....	.....	.....	.....	D. clouds....	C. S. Duncombe.
Nottingham, Observatory	29.62	752.3	29.81	757.2	40.7	4.8	.....	SW	.....	.....	1	.....	8ck;k	.....	.....	NW;WNW	0	0	D. clouds....	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.29	744.0	29.82	757.4	42.7	5.9	.....	W	.....	.....	4	.....	2	.....	.....	.....	.....	D. clouds....	Rev. Stephen Whitty
Oxford, Radcliffe Obs'y	.....	.....	29.86	758.4	42	5.6	.....	W	.....	.....	2	.....	1	.....	.....	.....	.....	Blue sky.....	F. Lucas
Plymouth	29.88	758.9	29.96	761.0	45.3	7.4	.....	W	.....	.....	2	.....	5	.....	.....	.....	.....	D. clouds....	John Merrifield.
Roche's Point	29.94	760.5	29.99	761.7	45	7.2	.....	NW	.....	.....	3	.....	2	.....	.....	.....	.....	Fine	W. Kennedy.
Saint Ann's Head	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	John C. Walker.
Sandwick Manse, (Orkneys)	.....	.....	29.65	753.1	38.9	3.8	.....	NW	20	8.9	.....	.....	4	.....	.....	.....	.....	D. clouds....	Rev. C. Clouston, LL. D
Scutari, Cemetery, (Turkey)	.....	.....	29.90	759.4	53.6	12.0	.....	S	.....	.....	1	.....	7	.....	.....	.....	.....	D. clouds....	Sergt. W. H. Lyne.
Sheffield	29.52	749.8	29.76	755.9	40.9	4.9	.....	NNW	.....	.....	1	.....	5	.....	.....	.....	0	0	D. clouds....	W. F. Cooper.
Silloth Rectory	29.77	756.1	29.80	756.9	44.6	7.0	68	E	.....	.....	1	.....	3	.....	.....	.....	0.070	1.78	D. clouds....	Rev. F. Redford, M. A.
Stonyhurst, Observatory	.....	.....	.....	.....	36.2	2.3	.....	W	.....	.....	0	.....	6	.....	.....	.....	.....	Hazy.....	Rev. S. J. Perry.
Stornoway, Lews C., (Hebr.)	.....	.....	29.73	755.1	37	2.8	.....	NW	.....	.....	1	.....	4?	.....	.....	.....	.....	Overcast?....	John Smith.
Stratfield Turgiss	29.66	753.4	29.88	758.9	43.3	6.3	.....	W	.....	.....	2	.....	0	.....	.....	.....	.....	Blue sky.....	Rev. C. H. Griffith, F.M.S.
Thurso	.....	.....	29.62	752.3	43	6.1	.....	NW	.....	.....	5	.....	5	.....	.....	.....	.....	D. clouds....	John Trotter.
Truro, Royal Institution	.....	.....	30.05	763.3	52	11.1	.....	W	.....	.....	4	.....	4	.....	.....	.....	.....	D. clouds....	W. Newcombe.
Valencia, Observatory	.....	.....	30.06	763.5	46.5	8.1	.....	NW	13	5.8	.....	.....	7	.....	.....	.....	.....	D. clouds....	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Henry Mercer.
Cape Good Hope, Obs'y	29.61	752.1	29.65	753.1	71.8	22.1	68	WNW	9	4.0	.....	10	10	.....	.....	.....	.....	.....	The Staff, for E. J. Stone.
Hobart Town, (Tasmania)	.....	.....	29.96	761.0	56.5	13.6	71	Calm	.....	.....	0	.....	0	.....	.....	.....	0.01	0.3	Francis Abbott, F.R.A.S.
Leith, Restalrig Park	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Andrew Gibb.
Mauritius, Observatory	29.80	756.9	29.99	761.7	80.0	26.7	74	E	12.5	5.6	.....	10	4	WNW	SE	0.01	0.3	Overcast.....	C. Meldrum.
Melbourne, Observatory	29.96	761.0	30.05	763.3	58.2	14.6	70	Calm	0	0	.....	.....	0	.....	.....	.....	0	0	Very fine.....	R. L. J. Ellery.
Monach L't-house, (Hebrides)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Youngclause.
North Unst, (Shetland Is.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Robert Burnet.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m.

Marine Series. Vessels.	Sea or swell. Height scale 0—9	Sea or swell. Direction from—	
S. S. Algeria	.....	.....	.....
S. S. Batavia, N. 42° 25', W. 66° 25'	4	ENE	Overcast.....
Ship Camperdown	.....	.....	.....
Brig Catherine	.....	.....	.....
Barque Celeste	.....	.....	.....
S. S. Hibernia	.....	.....	.....
Barque Maroon	.....	.....	.....
Ship Mikado	.....	.....	.....
S. S. Seine	.....	.....	.....
Barque Sorata	.....	.....	.....
Schooner Traveller	.....	.....	.....
.....	.....	.....	.....
.....	.....	.....	.....
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.....	.....	.....	.....
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.....	.....	.....	.....

S. S. Algeria	Capt. W. Watson.
S. S. Batavia, N. 42° 25', W. 66° 25'	Capt. J. E. Mouland.
Ship Camperdown	Capt. A. T. Miller.
Brig Catherine	Capt. Adam Smith.
Barque Celeste	Capt. D. F. McKechnie
S. S. Hibernia	Capt. W. R. Cato
Barque Maroon	Capt. A. T. Brown.
Ship Mikado	Capt. C. C. Prehn.
S. S. Seine	Capt. H. Manning.
Barque Sorata	Capt. Jas. J. Price.
Schooner Traveller	Capt. Alex. Simpson

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation The barometers and thermometers used by these observers have been generally carefully compared and corrected.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
San José	26.20	665.5	.....	.....	68.0	20.0	88	NE	.....	.....	2	1	1ck	.....	.....	Inap.	Inap.	.....	Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Copenhagen	29.24	742.7	29.29	743.9	38.7	3.7	95	ENE	.....	.....	2	.....	10	.....	.....	.....	.....	.....	.....
Faröe	29.35	745.5	29.37	746.0	36.3	2.4	94	N	.....	.....	2	.....	7	.....	.....	.....	.....	.....	.....
Godthaab, (Greenland)	29.95	760.8	30.00	761 9	25.9	— 3.4	.....	ENE	.....	.....	2	.....	10	.....	.....	.....	.....	.....	.....
Stykkisholm, (Iceland)	29.15	740.4	29.19	741.5	34.0	1.1	96	SE	.....	.....	6	.....	8	.....	.....	.....	.....	Snowing	.....
Thorshavn, (Faröe)	29.66	753.3	29.69	754.2	35.6	2.0	77	Calm	.....	.....	0	.....	10	.....	.....	.....	.....	.....	.....
Vestervig	29.19	741.4	29.36	745.7	40.3	4.6	94	Calm	.....	.....	0	.....	6	.....	.....	.....	.....	.....	.....

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Alençon, Normal School	29.39	746.5	29.94	760.5	48.2	9	74	NE	.....	.....	4	.....	5	.....	NW	1.079	27.4	Cloudy	Collignon, Director.
Amiens, Normal School	29.88	758.9	29.99	761.7	45.7	7.6	79	ESE	.....	.....	2	.....	5	.....	W	1.079	27.4	Cloudy	Bonvarne, Director.
Avignon, Normal School	29.68	753.8	29.76	755.8	51.4	10.8	43	N	.....	.....	2	.....	2	.....	NNW	0	0	Slightly cl'dy	Mr. Giraud, Director.
Bar-sur-Seine	29.15	740.4	29.72	755.0	42.4	5.8	70	N	.....	.....	8	.....	10n	.....	NNW	0.346	8.8	Covered	C. Saillard.
Beaumette Obs'y (Angers)	29.83	757.6	29.98	761.6	46.8	8.2	51	N	13 2	5.9	.....	.....	.....	.....	N	0.067	1.7	.....	Albert Cheux.
Beauvais	29.54	750.3	29.83	757.7	44.1	6.7	62	NNW	.....	.....	6	.....	2	.....	NNW	1.132	28.75	Slightly cl'dy	Normal School.
Besançon	28.69	728.7	29.01	752.0	37.9	3.3	89	SW	.....	.....	8	.....	8	.....	W	0.43	11.	Very cloudy	Normal School.
Bourg-en-Bresse	28.86	733.1	29.77	756.2	44.4	6.9	73	W	.....	.....	8	.....	10n	.....	W	0.20	5.	Covered	Normal School.
Bourges, Normal School	29.28	743.7	29.84	758.0	41.7	5.4	94	WNW	.....	.....	6	.....	10	.....	SE	0.280	7.1	Covered	A. Wagner, Director.
Brest, Naval Observatory	29.76	755.9	29.98	761.5	49.5	9.7	81	NW	.....	.....	3	.....	10	.....	NW	0.522	13.25	Raining	The Staff.
Carcassonne, Normal School	29.52	749.8	29.94	760.5	48.9	9.4	89	W	.....	.....	2	.....	2	.....	W	0.04	1.	Slightly cl'dy	Vateau, Director.
Caen	29.87	758.6	29.94	760.5	46.4	8	67	ESE	.....	.....	3	.....	2	.....	ESE	0.228	5.8	Slightly cl'dy	Normal School.
Chartres, Normal School	29.28	743.7	29.85	758.3	46.6	8.2	77	NW	.....	.....	6	.....	4	.....	S	0.35	9.	.....	Lequin, Director.
Châlons-sur-Marne, N. Sch'l	29.37	746.0	29.69	754.2	43.7	6.5	77	N	.....	.....	6	.....	8k	.....	N	0.472	12.0	Very cloudy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.47	723.2	29.85	758.2	45.3	7.4	51	NW	.....	.....	4	.....	10	.....	NW	0.622	15.8	Covered	Alluard, Director.
Commercy, Normal School	28.74	729.9	29.64	752.8	39.2	4	77	NW	.....	.....	8	.....	8	.....	NW	0.87	22.	Very cloudy	Dr. Goulet, Director.
Commune de Gréasque*	28.60	726.4	29.74	755.4	45.9	7.7	46	NW	.....	.....	8	.....	5	.....	NW	0	0	½ covered	..... Kina.
Grenoble	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Normal School.
La Roche-sur-Yon, N. School	29.79	756.6	30.01	762.2	48.2	9.0	76	NW	.....	.....	8	.....	0	.....	.....	0.483	11.50	Clear	Mouillot, Director.
Le Mans, Normal School	29.66	753.3	29.97	761.2	45.7	7.6	77	N	.....	.....	4	.....	2	.....	N	0.482	12.25	Slightly cl'dy	Poirrier, Director.
Lons-l.-Saulnier, N.School	28.81	731.8	29.74	755.4	40.6	4.8	77	WSW	.....	.....	4	.....	10	.....	S	0.16	4.	Covered	Pin, Director.
Lorient, Naval Observatory	29.97	761.1	30.07	763.6	48.6	9.2	81	NW	.....	.....	3.	.....	0	.....	.....	0	0	Clear	T. Carré, Director.
Mâcon, Normal School	29.21	741.9	29.87	758.8	42.3	5.7	88	N	.....	.....	4	.....	10	.....	.....	0	0	Covered	M. Marchal, Director.
Metz	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. A. Schuster, Dir.
Mirecourt	28.46	722.9	29.52	749.9	37.9	3.3	90	SSE	.....	.....	.....	.....	10	.....	SSE	0.12	3.	Covered	Normal School.
Nismes, Normal School	29.75	755.6	29.95	760 8	55.8	13.2	42	W	.....	.....	8	.....	2	.....	E	0	0	Slightly cl'dy	Boyer, Director.
Orleans, Normal School	29.39	746.5	29.73	755.1	45.7	7.6	66	NW	.....	.....	4	.....	5	.....	NW	0.417	10.6	Cloudy	Bernard, Director.
Paris, Observatory	29.58	751.4	29.83	757.6	45.9	7.7	55	NW	.....	.....	3	.....	8	.....	NNW	0.343	8.71	Very cloudy	National Observatory.
Privas	28.75	730.2	29.82	757 5	48.2	9	60	N	.....	.....	6	.....	10	.....	N	0	0	Covered	Normal School
Rochefort, Naval Obs'y	30.01	762.2	30.04	763.0	50 7	10.4	70	NW	.....	.....	3	.....	2	.....	NW	0	0	Mcovered	Lt. Decante, Director.
Rouen, Normal School	29.80	757.0	29.89	759.2	47.1	8.4	60	NW	.....	.....	6	.....	2	.....	NW	1.461	37.1	Slightly cl'dy	F. Lucard, Director.
Tarbes, Normal School	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	T. Hugues, Director.
Villefranche	29.05	737.9	29.78	756.5	40.5	4.7	97	NNW	.....	.....	4	.....	10	.....	.....	0.150	3.8	Covered	Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.76	756.0	29.79	756.7	82.4	28	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0	.....	L'Abbé Marchési.
Marseilles, Observatory	.....	.....	29.68	753.8	51.8	11.0	80	NW	.....	.....	6	.....	3	.....	.....	0	0	Partly cl'dy	The Staff.
Mont-Louis	24.72	627.9	30.04	762 9	31.8	— 0.1	64	WSW	18.6	8.33	.....	.....	10	.....	W	0.075	1.9	.....	Mr. Falguère.
Nice	.....	.....	29.35	745.4	55.9	13.3	39	NW	.....	.....	5	.....	5	.....	NW	0.551†	14.0†	Cloudy	Dr. A. Niepce.
Paris, Montsouris Obs'y	29.53	750.0	29.80	757.0	45.7	7.6	55	NW	.....	.....	4–6	.....	6	.....	NNW	0.240	6.1	.....	Marié Davy, Director.
Perpignan	.....	.....	29.93	760.1	54.0	12.2	47	NW	31.7	14.17	.....	.....	5	.....	NW	0	0	.....	Dr. Fines.
Pic du Midi, (Summit,) H. P.	21.10	536.0	.....	.....	14.0	—10.0	.....	NW	.....	.....	4	.....	10	.....	.....	.....	.....	Snowy	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.35	567.7	.....	.....	19.9	— 6.7	.....	NW	.....	.....	3	.....	10	.....	.....	1.870	47.5	Snowy	Gen'l de Nansouty.
Saint Maur, (near Paris)	29.66	753.3	29.82	757.5	46.4	8.0	58	NW	.....	.....	4	.....	5	NNW	.....	0.051	1.3	.....	E. Renou.
Toulouse, Observatory	29.32	744.7	30.04	763.1	48 2	9.0	64	NW	.....	.....	4	.....	7	.....	.....	0.071	1.80	.....	The Staff.
Tours	29.72	755.0	29.92	760.0	46.8	8.2	55	NW	.....	.....	2	.....	5	.....	NNW	0.421	10.7	.....	C. Marquet.
Versailles, (near Paris)	.....	.....	29.83	757.6	45.7	7.6	55	NW	.....	.....	4	.....	7	.....	.....	0.298	7.58	Squally	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.36	771.2	30.39	771.8	43.9	6.6	83	NW	4. 5	2.0	.....	.....	10k	.....	.....	0	0	Covered	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; for Montsouris, the barometer reduced to freezing but not to sea-level. At Mirecourt the cloud direction is apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.3 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône. †Rain-fall in 48 hours.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg																			Prof. Dr. Hoh.
Berlin	28.99	736.3	29.16	740.7	44.6	7.0	82	S			2		10			0.078	1.98		Prof. Arndt.
Breslau	28.73	729.7	29.25	742.9	45.5	7.5	81	SSE			1		10			0.101	2.57		Royal University Obs'y.
Carlsruhe	28.95	735.3	29.37	746.1	40.6	4.8	81	NW			2		10			1.008	25.6		Albert Senz.
Cassel	28.77	730.7	29.36	745.8	35.2	1.8	91	NW			8		10	WNW		0.356	9.04		Dr. H. Möhl.
Crefeld	29.28	743.8	29.44	747.8	41.5	5.3	84	N			5		8			1.18	30.		Director Lose.
Emden	29.81	757.1	29.84	758.0	43.7	6.5	80	NW			2		9			0	0		Prof. Prestel.
Frankfort on the Main	28.98	736.1	29.35	745.5	40.6	4.8		NNW			4		8			0.839	21.3		Physical Society.
Friedrichshafen	27.97	710.5	29.42	747.2	39.2	4.0	88	W			10		10	WNW		0.213	5.4		M. Wilhelm.
Hamburg	29.20	741.6	29.27	743.4	38.6	3.8	97	N			5		10			0.224	5.7	Raining	Captain F. Hegemann.
Kiel	29.28	743.8	29.30	744.2	41.0	5.0	80	N			3		10			0	0		Prof. G. Karsten.
Königsberg, (Prussia)	29.27	743.4	29.35	745.5	35.8	2.1	87	SE										Cloudy	Prof. E. Luther.
Köslin			29.18	741.2	35.6	2.0		E			2		5			0.441	11.2		H. Müller.
Leipsic, Observatory	28.79	731.3	29.21	741.9	45.3	7.4	69	SW			3		9	WSW		0.252	6.4		Prof. Bruhns.
Memel, Naval School	29.35	745.6	29.40	746.8	37.0	2.8	82	SE			2		9cs;ks						Reinbrecht von Skalweit.
Neufahrwasser	29.27	743.4	29.28	743.8	36.3	2.4	93	SE			3		10			0.047	1.2	Heavy clouds	A. Lothes.
Posen	28.98	736.1	29.28	743.7	47.3	8.5	77	SSW			3–4		10					Cloudy	Dr. Magener.
Strassburg Obs., (in Alsace	28.84	732.4	29.39	746.6	40.8	4.9	87	NW			4		10	NW		0.316	8.03	Raining	Dr. Schur.
Stuttgart	28.32	719.4	29.26	743.2	43.7	6.5	68	W			3		10			0.091	2.3		Prof. Schoder.
Treves, (Trier)	28.88	733.5	29.39	746.5	41.5	5.3	66	NW			6		9			0.577	14.65		Prof. Flesch.
Weissenburg, (Bavaria)	27.77	705.4	29.29	743.9	41.7	5.4	77	SSW	3	1.5			10		W	0	0	Covered	Dr. Von Bebber.
Wustrow, Naval School	29.21	741.9	29.26	743.2	40.3	4.6	80	ENE			4		4					Fair	E. F. Schütz.
German Naval Series.																			

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet: Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4, Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.54	750.4	29.93	760.3	62.2	16.8		S										½ Clear	Dr. J. F. J. Schmidt.

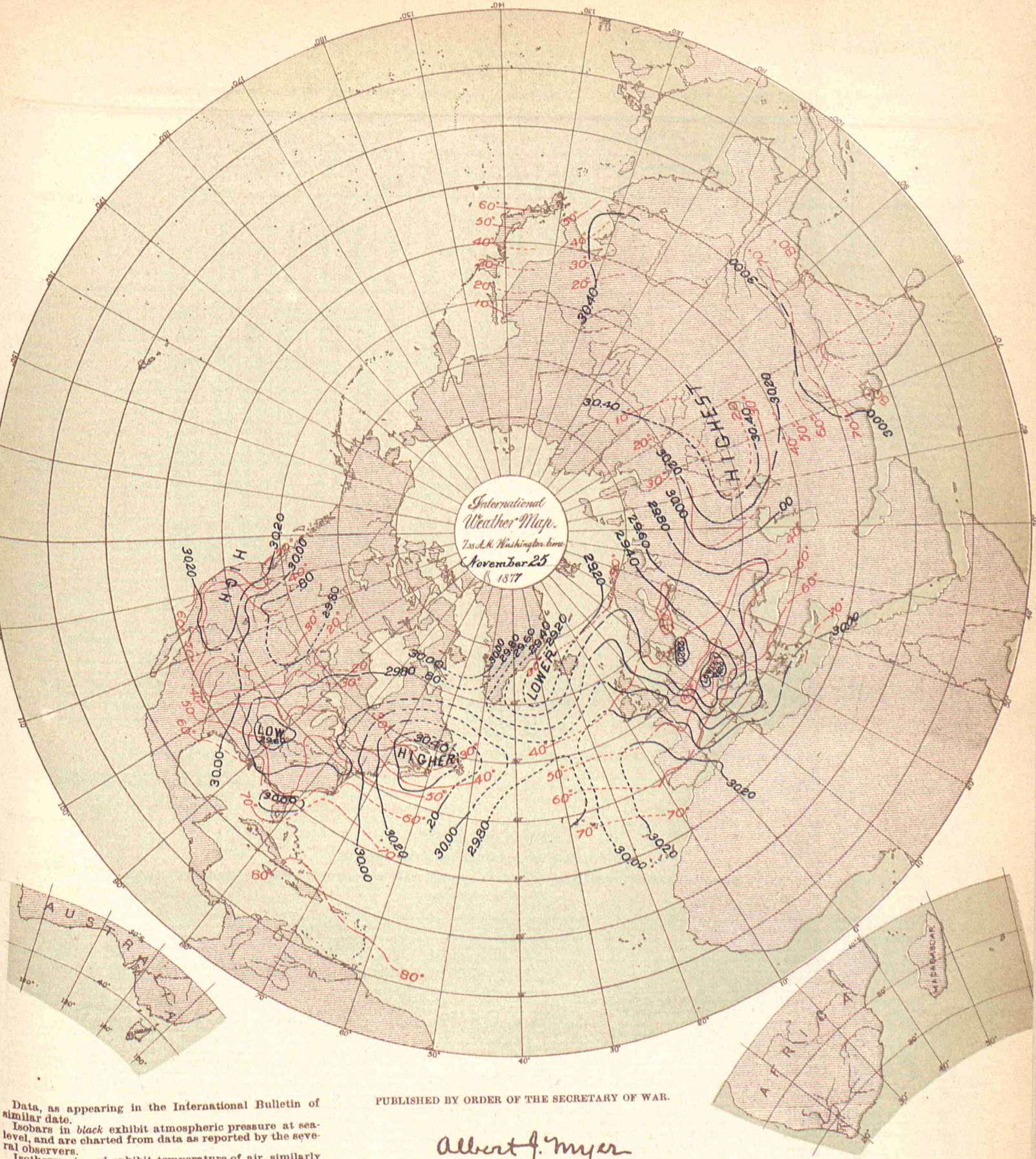
Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and wind-force; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.95	760.7	30.00	762.0	69.9	21.1	46	NW	14.0?	6.3?			0			0	0	Blue sky	
Deesa	29.55	750.5	30.04	762.9	73.0	22.8	55	Calm								0	0	Blue sky	
Bombay	29.89	759.2	29.93	760.2	80.6	27.0	78	NNW	23.0	10.3			0			0	0	Blue sky	
Poona	27.58	708.1	29.87	758.7	82.0	27.8	58	NNW					8		NW	0	0	D. clouds	
Lahore	29.21	742.0	29.98	761.5	65.4	18.6	92	E	6.3	2.8			8			0.32	8.1	Overcast	
Belgaum	27.38	695.5	29.90	759.6	80.3	26.8	54	N	4.0	1.8			1			0	0	D. clouds	
Bangalore																			
Roorkee	29.08	738.6	30.00	762.0	70.8	21.6	66	SE	3.7	1.6			8			0.15	3.8		
Agra	29.35	745.4	29.91	759.8	82.2	27.9	51	N					5			0	0		
Trichinopoly																			
Nagpur	28.91	734.3	29.96	761.0	78.8	26.0	53	Calm	2.4	1.1			0			0	0	Blue sky	
Madras																			
Lucknow	29.58	751.4	29.96	761.0	75.3	24.1	60	SSW	1.7	0.8			1			0	0	D. clouds	
Allahabad	29.64	752.7	29.95	760.7	75.7	24.3	64	Calm	0.6	0.3			0			0	0	Blue sky	
Patna	29.77	756.1	29.95	760.8	79.5	26.4	57	E	0.9	0.4			0			0	0	Blue sky	
Hazaribagh	27.94	709.7	29.98	761.4	73.5	23.2	53	NW	3.0	1.3			0			0	0	Blue sky	
Cuttack	29.88	758.9	29.96	761.0	78.8	26.0	75	N	0.2	0.1			0			0	0	Blue sky	
Calcutta (Alipore)	29.96	761.1	29.99	761.6	72.2	22.3	81	NW	3.0	1.3			0			0	0	Blue sky	
Goalpara	29.56	750.8	29.95	760.8	75.8	24.3	64	Calm	0.3	0.1			0			0	0	Blue sky	
Chittagong	29.91	759.7	30.00	762.1	75.8	24.3	82	Calm	0.5	0.2			0			0	0	Blue sky	
Sibsagar	29.64	752.9	29.98	761.6	69.0	20.6	89	ENE	0.6	0.3			2			0	0	Blue sky	
Rangoon																			
Jubbulpore	28.60	726.6	29.99	761.8	73.0	22.8	66	S	3.1	1.4			0			0	0	Blue sky	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	21.46	545.2	29.42	747.2	16.2	— 8.8	88	SE			8		10			8.150*	80.0*		Ab. Dom. Mongini.
Stelvio	22.48	544.4	29.41	746.9	21.2	— 6.0		W			1		7			0.283	7.2		Signora Ernesta Manfredi.
Udine	28.80	731.4	29.21	742.0	48.2	9.0	84	S	0.7	0 3			10			0.445	11.3		Prof. Giovanni Clodig.
Padua	29.08	738.7	29.19	741.5	47.3	8.5	78	NW	12.5	5.6			3	W		0.252	6.4		Prof. Dott. Lorenzoni.
Vicenza	29.00	736.5	29.19	741.5	47.8	8.8	81	SW	17.4	7.8			1	W		0.709	18.0		Conte Alm. Da Schio.
Verona	29.09	738.8	29.31	744.5	48.2	9.0	78	NNW	3.1	1.4			10	WNW		0.449	11.4		Dott. B. Bertoncelli.
Bergamo	27.97	710.5	29.32	744.6	43.5	6.4	82	W			2		9			0.094	2.4		Prof. Trionfini Carlo.
Domodossola	28.32	719.4	29.37	746.0	44.4	6.9	66	N			6		10			0	0		Prof. Giuseppe Calsa.
Milan	28.83	732.2	29.35	745.4	46.4	8.0		W			2		7	SSW		0.209	5.3		Ab. Gio. Capelli.
Pavia	28.05	735.4	29.31	744.4	44.1	6.7	77	NW			4		3	W		0.138	3.5		Prof. Gio. Cantoni.
Moncalieri	28.40	721.3	29.32	744 7	50.7	10.4	27	NNW	1.8	0.8			1			0.039	1.0		Prof. P. F. Denza.
Mondovi	27.43	696.8	29.37	745.9	50.2	10.1	32	NW			6		1	NW		0	0		Prof. D. C. Bruno.
Porto Maurizio	29.08	738.7	29.30	744.3	54.9	12.7	54	WSW			8		4	NW		0.862	21.9		Prof. L. Vassallo.
Genoa	29.14	740.2	29.31	744.5	55.4	13.0	37	SE	2.5	1.1			1	W		0.882	22.4		Prof. G. M. Garibaldi.
Piacenza	29.04	737.6	29.30	744.1	43.2	6.2	73	NW	15.4	6.9			2	W		0.236	6.0		Dott. G Manzi.
Parma	29.00	736.7	29.32	744.6	44.4	6.9	77	SW			4		9			0.246	6.3		Prof. P. Pigorini.
Florence	29.11	739.3	29.37	745.8	55.4	13.0	57	SW			8		10	WSW		0.224	5.7		Cav. F Meucci.
Leghorn	29.27	743.5	29.36	745.7	57.4	14.1	54	WSW	31.8	14.2			5	WSW		0.059	1.5		Prof. P. Monte.
Siena	28.20	716.2	29.42	747.2	53.6	12.0	52	WSW	9.4	4.2			8	W		0.331	8.4		Prof. L. Toscani.
Urbino	27.81	706.3	29.38	746.2	52.3	11.3	59	SSW			4		9			0.236	6.0		Prof. P. Serpieri.
Pesaro					57.6	14.2	60	NW	26.2	11.7			2	NW		0	0		Prof. Luigi Guidi.
Ancona	29.32	744.8	29.43	747.5	56.5	13.6	50	SSW			8		3	SW		0.012	0.3		Prof. F. DeBosis.
Grosseto	29.37	745.9	29.48	748.8	59.0	15.0	51	SSE			6		6	S		0.098	2.5		Avv. P. Ponticelli.
Rome	29.36	745.8	29.54	750.3	60.3	15.7	61	W	26.2	11.7			10			0.079	2.0		Prof. P. A Secchi.
Naples, O. U	29.46	748.3	29.66	753.4	63.3	17.4	62	SW			6		9	SW		0.118	3.0		Prof. L. Palmieri.
Lecce					61.6	16.4	77	SSW	18.6	8.3			9			0	0		Prof. C. De Giorgi.
Cosenza					62.2	16.8	73	SE	3.1	1.4			2			0	0		Prof. F. D. Conti.
Cagliari																			Prof. A. Pacinotti.
Riposto, (Sicily)					64.8	18.2	62	Calm			0		5			0	0		Prof. F. Cafiero.
Palermo	29.45	748.0	29.71	754.5	64.9	18.3	53	WSW	11.2	5.0			6	WNW		0.047	1.2		Prof. G. Cacciatore.
Caltanissetta	27.85	707.3	29.80	756.9	55.8	13.2	71	WSW			6		4	E		0	0		Prof. A. Pagani.
Syracuse	29.58	751.4	29.78	756.5	66.6	19.2	56	SW			0		8	SW		0	0		Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.51	749.6	29.67	753.7	60.1	15.6	75	NW	15.0	6.7			9			0.417	10.6		Prof. F. Brioschi.

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,548.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Siena, 348.5 m., or 1,143.3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft *Unmelted snow.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Tokei (Yeddo)																			The Observatory.
Tokei (Yeddo) University	30.05	763.3	30.15	765.9	53	11.7	75						10s			0	0	Cloudy	Prof P. V. Veeder.

MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Barcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Aguascalientes																			I. N. Marin, M. D.
Córdoba																			C. Peña, M. D.
Cuernavaca																			L. Castillo, A. E.
Guadalajara																			Prof. L. Perez.
Guanajuato																			Prof. V. Fernandez.
Leon																			Prof. M. Leal.
Mexico	23.13	587.5	30.24	768.0	59.2	11.8	82	NE	0.1	0.03			10n			0.01	0.2	Raining	Central Observatory.
Orizaba																			N. N.
Orizaba																			I. Orozco, M. D.
Pabellon, (Aguascalts)																			M. V. de Leon, M. E.
Puebla																			Prof. B. Gonzalez.
Toluca																			Prof. C. Velazquez.
Tlacotalpam																			Prof. F. R. Bayly.
San Luis Potosi																			G. Barroeta, M. D.
Vera-Cruz																			Prof. J. Rossell.
Zacatecas																			J. A. Bonilla, M. E.
Puebla, (Catholic Institute)																			P. Spina. [M. M. D. D.
Morelia																			M. Tena, F. L. Páramo.

Note.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,610 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,230 m., or 7,512.9 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabell m, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,626 m., or 8,611.8 ft.; San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	29.67	753.5	29.67	753.5	45.5	7.5		NNW			5					1.591	40.4		
Groningen	29.37	746.0	29.43	747.4	41.5	5.3		N			2					0.067	1.7		
Helder	29.51	749.5	29.51	749.5	45.7	7.6		NW			6					0.130	3.3		
Hellevoetsluis			29.57	751.0	44.6	7.0	69	NNW			6								
Utrecht	29.49	749.0	29.54	750.2	41.9	5.5	80	NNW			5		8			0.980	24.9	Very cloudy	H. v d Brink.

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	29.43	747.6	29.49	749.0	37.0	2.8	72	N	8.3	3.7			0			0	0		
Brönö	29.40	746.8	29.44	747.8	32.7	0.4	83	E	4	2			10			0	0		
Christiania	29.24	742.8	29.39	746.6	36.9	2.7	67	N	7	3			2			0.028	0.7		
Tromsö	29.19	741.4	29.23	742.5	28.0	— 2.2	83	SW	4	2			0			0.252	6.4		

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	29.65	753.2	29.84	758.0	66.0	18.9	94	W	7.4	3.3			7			0.079	2.0		Dr. J. A. Sampaio.
Campo Major	29.18	741.1	30.21	767.3	59.9	15.5	64	W	1.8	0.8			8	WSW		0	0		Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.09	764.3	30.18	766.5	73.6	23.1	71	SW	2.6	1.1			0			0	0		Capt. D. A. de Cunha.
Lisbon, Observatory	29.88	758.9	30.24	768.1	57.2	14.0	76	ENE	8.7	3.9			3			0.016	0.4		The Staff.
Ponta Delgada, (Azores)	29.85	758.2	29.92	760.0	67.8	19.6	96	S	5.6	2.5			10			0.035	0.9		

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

Naval Series. Vessels.	Sea or swell. Height scale 0–9	Sea or swell. Direction from—	
S. S. India.			A. D. Pedroso, Com'd't.
			Lt. S. A. P. de Mirando

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	28.91	734.4	29.34	745.2	40.6	4.8	87	SE	13	6			10						Astronomical Obs.
Wilna	29.12	739.6	29.55	750.5	37.9	3.3	90	SSE	7	3			10					Heavy clouds	Astronomical Obs.
Dorpat	29.33	744.9	29.58	751.2	36.3	2.4	85	S	7	3			1						Prof. Dr. Weihrauch.
St. Petersburg	29.53	750.1	29.55	750.5	40.5	4.7	86	S	9	4			10						Central Physical Obs.
Kuopio	29.04	737.6	29.36	745.8	37.4	3.0	100	SSW	13	6			10			Blank	Blank		Ch. Forsten.
Kieff	29.11	739.4	29.76	756.0	35.8	2.1	96	S	4	2			10					Dust-haze	Physical Cabinet.
Nikolaiev	29.82	757.3	29.89	759.1	47.5	8.6	68	NNW	0	0			0						Kurdakof.
Kertch	29.80	757.0	29.82	757.5	45.5	7.5	94	NNW	9	4			10						Lagorio.
Moscow	29.29	741.7	29.77	756.1	34.2	1.2	100	S	6	4			10					Raining	Meteorological Obs.
Lugan	29.57	751.1	29.78	756.4	39.7	4.3	92	E	2	1			10			Blank	Blank		Meteorological Obs.
Archangel	29.60	751.7	29.61	752.2	38.1	3.4	97	SSE	9	4			10						Ogorodnikof.
Tiflis	28.43	722.2	29.87	758.7	46.8	8.2	79	Calm	0	0			8						Physical Observatory.
Astrakhan	30.03	762.8	29.95	760.7	36.9	2.7	63	ESE	18	8			0						Sebastianof.
Kasan	29.83	757.7	30.11	764.9	27.5	— 2.5	79	SSE	7	3			5						Physical Cabinet.
Orenburg																			Tschernischef.
Ekaterinburg	29.35	745.4	30.34	770.7	29.7	— 1.3	51	W	4	2			3					Light clouds	Meteorological Obs.
Nukuss	29.89	759.2	30.13	765.4	29.8	— 1.2	52	ENE	7	3			2						
Kasaly																			Bobrof.
Tashkend	28.53	724.7	30.34	770.7	30.7	— 0.7	90	Calm	0	0			10						Michelson.
Barnaul	29.97	761.1	30.54	775.7	16.5	— 8.6	76	Calm	0	0			10						Meteorological Obs.
Yeniseisk	30.11	764.7	30.46	773.7	8.1	—13.3	84	NW	4	2			10						Marks.
Irkutsk																			Usolzef.
Oorga																			Mossin.
Peking, (China)	30.35	771.0	30.50	774.6	29.3	— 1.5	51	Calm	0	0			0						Physical Observatory.
Nertchinsk																			Meteorological Obs.
Vladivostock																			
Nikolaievsk, on the Amoor					1.9	—16.7	85	W	2	1			2ks						

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 494.27 m., or 1,621.37 ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.07 m., or 1,942.27 ft.; Oorga, 1,281.07 m., or 4,202.67 ft.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y																			Antonio Rave, Director.
Bilbao, Met. Obs'y																			Prof. Manuel de Naveran
Burgos, Met. Obs'y																			Domingo Martin y Perez.
Madrid, Royal Observatory	27.92	709.1	30.18	766.6	52.2	11.2	47	S	3.0	1.33		0	0			0	0	Clear	The Staff.
Murcia, Met. Obs'y																			Olayo Diaz, Director.
Santiago, Met. Obs'y																			R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.93	760.1	29.99	761.8	68.0	20.0	84	Calm	0	0		4ck	0						
San Fernando, Naval Obs'y.	30.15	765.7	30.25	768.2	64.4	18.0	74	W	9.4	4.2		0	9		W	0.031	0.8	Fair	Benito Vines, S. J.
San Juan de Porto Rico, W. I.			29.86	758.4	77.0	25.0	92	SW	0	0		3k	1s	E	SE	0	0	Clear	Capt. C. Pujazon, R. N., Dir.
																			Leonardo de Tejeda, Chief of Engineers.

NOTE.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

1877—November 25.

Furnished by the cöoperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.30	744.2	29.34	745.2	36.3	2.4	.....	SE	.....	.....	2	.....	10	.....	.....	0	0	.....	
Umea	29.28	743.7	29.33	745.0	32.7	0.4	100	NNW	.....	.....	2	.....	10	.....	.....	Inap.	Inap.	Snowing	
Hernosand	29.31	744.5	29.36	745.8	34.9	1.6	89	Calm	.....	.....	0	.....	10	.....	.....	0.071	1.8	.....	
Stockholm	29.17	740.8	29.34	745.3	37.0	2.8	86	SW	.....	.....	2	.....	8	.....	.....	0.031	0.8	.....	
Wisby	29.27	743.4	29.33	744.9	41.0	5.0	90	WSW	.....	.....	4	.....	7	.....	.....	0.028	0.7	.....	
Sub-Series.																			
Upsala	29.29	743.9	29.36	745.8	34.2	1.2	99	Calm	0	0	.....	.....	10	.....	.....	0.091	2.30	Raining	Dr. Hildebrandsson.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	26.26	717.8	29.73	755.2	39.2	4.0	69	NNE	.....	.....	1	.....	10	.....	.....	0.276	7.0	Raining	The Observatory.
Zurich	27.78	705.7	29.48	748.8	36.7	2.6	88	W	.....	.....	4	.....	10	.....	W	0.134	3.4	Rain & snow	The Observatory.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—For Geneva the corresponding departures from the normal values are: Barometer, —8.9 mm; Thermometer, —1.1 cent.; Relative Humidity, —9 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	29.94	760.4	52.5	11.4	64	SSE	7	3.0	.....	.....	6	.....	NW	0	0	.....	The Observatory.
Fao, (Persian Gulf)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salonica	.....	.....	29.89	759.2	57.7	14.3	.....	NE	.....	.....	1	.....	0	.....	.....	.....	.....	.....	B. Stefanidès.
Valona	.....	.....	29.80	756.9	63.7	17.6	.....	S	.....	.....	3	.....	2	.....	.....	0	0	Slightly cl'dy	A. Bertrand.
Varna	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Imperial Observatory.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.78	756.4	29.90	759.4	64.9	18.3	64	NW	.....	.....	1	.....	2ks	.....	NW	0.88	22.4	D. clouds	Prof. C. V. A. Van Dyck

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Hon. J. Ferguson.
Brockville, Ontario	29.72	754.9	30.03	762.7	39	3.9	.....	NE	4	1.8	.....	.....	10s	.....	NE	0.09	2.3	Light rain	W. R. Bigg.
*Chatham, N. B	.....	.....	30.51	774.9	33	0.6	89	Calm	0	0	.....	2c	8ks	NE	NE	0	0	Cloudy	G. A. Blair.
Charlottetown, P. E. Island	.....	.....	30.50	774.7	34	1.1	90	N	4	1.8	.....	.....	8ks	.....	Calm	0	0	Cloudy	H. J. Cundall, C. E.
Cornwall, Ontario	29.84	757.9	30.04	763.0	39.3	4.1	81	E	.....	.....	5	.....	10n	.....	.....	0.018	0.46	Raining	James Smith, M. A.
Dalhousie, N. B	30.31	769.9	.....	.....	31.8	— 0.1	82	E	.....	.....	1	.....	.....	.....	.....	0	0	Gloomy	H. A. Johnson.
Esquimault, B. C	30.13	765.3	30.18	766.6	43.3	6.3	83	W	.....	.....	.....	2cs	0	.....	.....	0	0	Clear	W. H. Bevis.
*Father Point, Quebec	.....	.....	30.40	772.7	25	— 3.9	79	Calm	0	0	.....	5k	0	Calm	.....	0	0	Fair	J. McWilliams.
Fredericton, N. B	30.40	773.7	30.52	775.2	33.0	0.6	88	NE	8.0	3.6	.....	.....	10s	.....	.....	0	0	Cloudy	Prof. Harrison.
*Fort Garry, Manitoba	29.04	737.6	29.92	760.0	20	— 6.7	94	S	6	2.7	.....	Haze	Fog	S	S	0	0	Foggy	James Stewart.
Goderich, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	H. J. Strang, M. A.
Granton, Ontario	28.66	728.0	29.77	756.1	43	6.1	100	E	.....	.....	1	.....	10n	.....	.....	0.15	3.8	Cloudy	James Grant.
*Halifax, N. S	30.32	770.1	30.46	773.7	32	0.0	97	NE	5	2.2	.....	.....	8ks	.....	SE	0	0	Fair	F. Allison, M. A.
Hamilton, Ontario	29.58	751.3	29.96	760.7	43.5	6.4	84	E	.....	.....	1	10cs	.....	E	.....	0.45	11.4	Cloudy	Geo. Dickson, M. A
Heart's Content, N. F	30.37	771.4	30.39	771.9	34	1.1	84	NE	.....	.....	3	.....	10	.....	.....	0	0	Overcast	E. Weedon.
*Kingston, Ontario	29.68	753.9	30.02	762.5	41	5.0	90	NE	5	2.2	.....	.....	10n	.....	Calm	0.98	24.9	Heavy rain	S. Woods, M. A.
Little Glace Bay, N. S	30.44	773.2	30.48	774.2	36.5	2.6	92	N	4	1.8	.....	2k	.....	N	.....	0	0	Fair	C. H. McLeod, C. E.
*Montreal, Quebec	29.96	761.0	30.17	766.3	36	2.5	80	NE	9	4.0	.....	.....	10n	.....	.....	0	0	Cloudy	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.14	740.1	29.84	757.9	43	6.1	96	SE	24	10.7	.....	.....	10n	.....	SE	0.53	13.5	Light rain	Rev. R. Mosley.
Peterboro, Ontario	29.16	740.7	29.92	760.0	42.7	5.9	90	E	.....	.....	2	.....	10n	.....	.....	1.15	29.2	Raining	J. F. Jeffers, B. A.
Port Dover, Ontario	29.11	739.4	29.81	757.2	46	7.8	100	NE	6	2.7	.....	.....	10n	.....	E	0.05	1.3	Light rain	H. Morgan.
Port Hastings, N. S	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Peter Grant.
Port Stanley, Ontario	29.14	740.1	29.79	756.7	48	8.9	91	E	14	6.3	.....	.....	10n	.....	SE	0.11	2.8	Cloudy	M. Payne.
*Quebec, Quebec	30.04	763.0	30.37	771.4	34	1.1	74	NE	20	8.9	.....	2c	10n	NE	NE	0	0	Fair	Capt. Ashe, R. N
*Rockliffe, Ontario	29.50	749.3	29.96	761.0	40	4.4	97	SE	15	6.7	.....	.....	10s	.....	SE	0.14	3.6	Cloudy	W. H. McIntyre.
St. John, N. B	30.29	769.4	30.47	773.9	34	1.1	79	N	1	0.4	.....	.....	10ks	.....	.....	0	0	Cloudy	G. Murdock, C. E.
*Saugeen, Ontario	29.65	737.9	29.75	755.6	45	7.2	96	SE	14	6.3	.....	.....	10n	.....	S	0.16	4.1	Cloudy	K. Stewart.
Stayner, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.75	19.1	.....	R. J. Cole.
Stratford, Ontario	28.50	723.9	29.79	756.7	42.7	5.9	99	SE	7.5	3.4	.....	.....	Fog	.....	.....	0.331	8.41	Foggy	C. J. MacGregor, M. A.
*Sydney, C. B	30.45	773.4	30.49	774.4	28	— 2.2	94	E	1	0.4	.....	0	0	.....	.....	0	0	Clear	T. C. Hill.
*Toronto, Ontario	29.48	748.8	29.86	758.4	44	6.7	97	E	10	4.5	.....	.....	10n	.....	Calm	1.03	26.2	Light rain	Magnetic Observatory.
Windsor, N. S	30.39	771.9	30.48	774.2	27.0	— 2.8	100	NE	0	0	.....	0	0	.....	.....	0	0	Foggy	Prof. John E. Oram.
Woodstock, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Montgomery.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	34.0	1.1	100	NE	.....	.....	.....	Sm'e	Sm'e	.....	.....	0	0	Cloudy	John Delany
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.79	756.7	30.02	762.5	45	7.2	85	Calm	0	0	.....	.....	10s	.....	Calm	0.01	0.3	Cloudy	
*Alpena, Michigan	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.05	1.3	.....	
Atlantic City, New Jersey	29.78	756.4	29.80	756.9	53	11.7	100	S	4	1.8	.....	.....	Fog	.....	Calm	†3.35	†85.1	Foggy	†Approximated.
Augusta, Georgia	29.74	755.4	29.93	760.2	44	6.7	96	Calm	0	0	.....	.....	Fog	.....	N	0	0	Foggy	
Baltimore, Maryland	29.76	755.9	29.81	757.2	55	12.8	87	NE	3	1.3	.....	.....	10s	.....	Calm	1.72	43.7	Threatening	
Barnegat, New Jersey	29.78	756.4	29.80	756.9	54	12.2	100	S	12	5.4	.....	.....	10s; fg	.....	S	5.53	140.5	Cloudy	
Bismarck, Dakota	27 94	709.7	29.64	752.8	30	— 1.1	89	E	5	2.2	.....	.....	10s	.....	Calm	0	0	Cloudy	
Boise City, Idaho	27.31	693.7	29.98	761.5	40	4.4	82	S	4	1.8	.....	.....	10s	.....	Calm	Inap.	Inap.	Cloudy	
Boston, Massachusetts	30.01	762.2	30.17	766.3	44	6.7	92	NE	28	12.5	.....	.....	10s	.....	E	0	0	Cloudy	
Brackettville, Texas	28.98	736.1	30.02	762.5	40	4.4	72	W	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Breckenridge, Minnesota	28.86	733.0	29.88	758.9	31	— 0.6	89	W	2	0.9	.....	.....	10s	.....	Calm	Inap	Inap.	Cloudy	
Brownsville, Texas	30.11	764.8	30.18	766.6	58	14.4	57	N	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Buffalo, New York	29.08	738.6	29.77	756.1	49	9.4	93	NE	6	2.7	.....	.....	10s	.....	S	0.18	4.6	Cloudy	
Burlington, Vermont	29.89	759.2	30.16	766.1	44	6.7	83	S	5	2.2	.....	.....	10s	.....	S	0	0	Cloudy	
Cairo, Illinois	29.15	740.4	29.54	750.3	45	7.2	92	E	10	4.5	.....	.....	10n	.....	S	0.69	17.5	Light rain	
Camp Grant, Arizona	25.32	643.1	30.12	765.0	42	5.6	14	NE	.....	.....	1	0	0	.....	.....	0	0	Clear	
Camp Verde, Arizona	27.00	685.8	30.49	774.4	29	— 1.7	56	NW	.....	.....	.....	5c	0	W	.....	0	0	Fair	
Campo, California	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Cape Hatteras, N. Carolina	29.82	757.4	29.83	757.7	54	12.2	93	N	4	1.8	.....	0	0	.....	.....	0.07	1.8	Clear	
Cape Henry, Virginia	29.84	757.9	29.87	758.7	52	11.1	87	SW	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Cape Lookout, N. Carolina	29.90	759.4	29.92	760.0	60	15.6	70	W	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Cape May, New Jersey	29.78	756.4	29.80	756.9	56	13.3	87	SW	10	4.5	.....	.....	10s	.....	SW	2.03	51.6	Cloudy	
Charleston, South Carolina	29.90	759.4	29.96	761.0	62	11.1	86	SW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Cheyenne, Wyoming	23.89	606.8	29.83	757.7	33	0.6	79	W	32	14.3	.....	.....	8s	.....	W	0.02	0.5	Fair	
Chicago, Illinois	29.02	737.1	29.71	754.6	42	5.6	100	NE	8	3.6	.....	.....	10n	.....	Calm	0.03	0.8	Light rain	
Cincinnati, Ohio	29.08	738.6	29.71	754.6	50	10.0	86	SE	4	1.8	.....	.....	10ks	.....	SE	0.06	1.5	Threatening	
Cleveland, Ohio	29.06	738.1	29.78	756.4	50	10.0	86	SE	6	2.7	.....	0	8s	.....	Calm	0	0	Fair	
Concho, Texas	28.22	716.8	29.97	761.2	35	1.7	52	W	18	8.0	.....	0	0	.....	.....	0	0	Clear	
Corsicana, Texas	29.45	748.0	29.92	760.0	46	7.8	54	NW	14	6.3	.....	0	0	.....	.....	0	0	Clear	
Davenport, Iowa	29.12	739.6	29.75	755.6	41	5.0	82	NE	7	3.1	.....	.....	10s	.....	Calm	0	0	Cloudy	
Denison, Texas	29.06	738.1	29.86	758.4	44	6.7	60	NW	24	10.7	.....	0	1s	.....	Calm	0.13	3.3	Clear	
Denver, Colorado	24.72	627.9	29.94	760.5	43	6.1	15	NW	12	5.4	.....	0	5s	.....	Calm	0	0	Fair	
Detroit, Michigan	29.03	737.3	29.69	754.1	45	7.2	100	S	1	0.4	.....	.....	Fog	.....	Calm	0.21	5.3	Foggy	
Dodge City, Kansas	27.36	694.9	29.76	755.9	26	— 3.3	75	NW	14	6.3	.....	2c	0	NW	.....	0.25	6.3	Clear	
Dubuque, Iowa	29.05	737.9	29.75	755.6	40	4.4	91	N	5	2.2	.....	.....	10s	.....	Calm	0	0	Cloudy	
Duluth, Minnesota	29.12	739.6	29.80	756.9	38	3.3	81	N	2	0.9	.....	.....	10s	.....	N	0	0	Cloudy	
Eagle Pass, Texas	29.38	746.2	30.14	765.5	47	8.3	55	NW	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Eastport, Maine	30.36	771.1	30.43	772.9	39	3.9	81	E	10	4.5	.....	.....	10s	.....	E	0	0	Cloudy	
Erie, Pennsylvania	29.04	737.6	29.73	755.1	54	12.2	79	S	14	6.3	.....	.....	10s	.....	S	0.02	0.5	Cloudy	
Escanaba, Michigan	29.07	738.4	29.72	754.9	39	3.9	100	N	4	1.8	.....	.....	10n	.....	Calm	0.38	9.7	Light rain	
Florence, Arizona	28.55	725.2	30.15	765.8	41	5.0	11	N	.....	.....	.....	5c	0	N	.....	0	0	Fair	
Fort Bayard, New Mexico	24 14	613.1	30.14	765.5	31	— 0.6	49	NE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Fort Craig, New Mexico	25.66	651.8	.....	.....	30	— 1.1	70	W	1	0.4	.....	2c	0	Calm	.....	0	0	Fair	
Fort Gibson, Indian Ter	29.12	739.6	29.65	753.1	43	6.1	91	N	24	10.7	.....	.....	10n	.....	N	0.89	22.6	Light rain	
Fort Griffin, Texas	28.78	731.0	30.09	764.3	39	3.9	55	NW	15	6.7	.....	0	0	.....	.....	0	0	Clear	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	28.72	729.5	29.86	758.4	40	4.4	47	NW	20	8.9	.....	0	0	.....	.....	0.20	5.1	Clear	
Galveston, Texas	29.94	760.5	29.98	761.5	52	11.1	59	W	12	5.4	.....	0	0	.....	.....	0.14	3.6	Clear	
Grand Haven, Michigan	29.06	738.1	29.70	754.4	47	8.3	85	N	8	3.6	.....	.....	10s	.....	N	0.09	2.3	Cloudy	
Indianapolis, Indiana	28.31	734.3	29.68	753.9	49	9.4	93	Calm	0	0	.....	.....	10n	.....	Calm	0.05	1.3	Light rain	
Indianola, Texas	30.05	763.3	30.08	764.0	53	11.7	42	NW	14	6.3	.....	0	0	.....	.....	0	0	Clear	
Jacksboro, Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Jacksonville, Florida	29.93	760.2	29.96	761.0	46	7 8	85	Calm	0	0	.....	0	Sm'e	.....	Calm	0	0	Clear	
Keokuk, Iowa	29.07	738.4	29.69	754.1	40	4.4	82	N	10	4.5	.....	.....	10s	.....	Calm	0	0	Cloudy	
Key West, Florida	29.99	761.0	29.99	761.7	68.0	20.0	69	NE	1	0.4	.....	5ck	0	W	.....	0	0	Fair	
Kittyhawk, North Carolina	29.87	758.7	29.89	759.2	52	11.1	100	SW	7	3.1	.....	0	0	.....	.....	0	0	Clear	
Knoxvile, Tennessee	28.80	731.5	29.80	756.9	46	7.8	92	E	2	0.9	.....	6cs	3ks	SW	SW	0.03	0.8	Cloudy	
La Crosse, Wisconsin	29.04	737.6	29.79	756.7	38	3.3	100	N	4	1.8	.....	.....	10n	.....	N	0.35	8.9	Light rain	
La Mesilla, New Mexico	26.22	666.0	30.37	771.4	28	— 2.2	54	SW	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Laredo, Texas	.....	.....	.....	.....	49	9.4	44	NW	9	4.0	.....	0	0	.....	.....	0	0	Clear	
Leavenworth, Kansas	28.90	734.0	29.74	755.4	40	4.4	82	N	20	8.9	.....	.....	10s	.....	N	0.34	8.6	Cloudy	
Los Angeles, California	29.78	756.4	30.12	765.0	61	16.1	83	N	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Louisville, Kentucky	29.15	740.4	29.71	754.6	48	8.9	100	E	4	1.8	.....	.....	10s	.....	Calm	Inap.	Inap.	Cloudy	
Lynchburg, Virginia	29.14	740.1	29.81	757.2	53	11.7	73	Calm	0	0	.....	5c	0	SW	.....	0.33	8.4	Fair	
Maricopa Wells, Arizona	.....	.....	.....	.....	43	6.1	36	N	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Marquette, Michigan	29.07	738.4	29.77	756.1	39	3.9	71	NW	4	1.8	.....	.....	10s	.....	Calm	0	0	Cloudy	
Mason, Texas	28.46	722.9	30.28	769.1	43	6.1	50	W	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Memphis, Tennessee	29.22	742.2	29.53	750.0	49	9.4	77	S	5	2.2	.....	.....	10s	.....	SW	0.12	3.0	Cloudy	
Milwaukee, Wisconsin	29.05	737.9	29.72	754.9	40	4.4	91	NW	7	3.1	.....	.....	10s	.....	.....	0.01	0.3	Cloudy	
Mobile, Alabama	29.69	754.1	29.73	755.1	63	17.2	83	S	14	6.3	.....	.....	10ks	.....	SW	0	0	Threatening	
Montgomery, Alabama	29.54	750.3	29.78	756.4	48	8.9	89	SE	9	4.0	.....	5cs	Haze	SW	Calm	0	0	Fair	
Morgantown, West Virginia	28.76	730.5	29.79	756.7	53	11.7	73	S	7	3.1	.....	.....	10s	.....	SW	0.12	3.0	Cloudy	
Mt. Washington, N. H.	23.80	604.5	30.16	766.1	21	— 6.1	100	SE	66	29.5	.....	.....	Fog	.....	SE	0	0	Foggy	
Nashville, Tennessee	29.32	744.7	29.86	758.4	45	7.2	84	E	12	5.4	.....	.....	10s	.....	S	0	0	Cloudy	
New Haven, Connecticut	29.88	758.9	29.99	761.7	47	8.3	92	NE	14	6.3	.....	.....	10n	.....	NE	0.74	18.8	Light rain	
New London, Connecticut	29.96	761.0	30.01	762.2	47	8.3	92	E	23	10.3	.....	.....	10n	.....	E	0.32	8.1	Light rain	
New Orleans, Louisiana	29.77	756.1	29.83	757.7	55	12.8	62	SW	9	4.0	.....	0	0	.....	.....	0	0	Clear	
Newport, Rhode Island	30.01	762.2	30.06	763.5	48	8.9	93	E	16	7.2	.....	.....	10ks	.....	E	0.06	1.5	Threatening	
New York, New York	29.68	753.9	29.86	758.4	50	10.0	93	NE	26	11.6	.....	.....	10n	.....	NE	0.82	20.8	Light rain	
Norfolk, Virginia	29.81	757.2	29.87	759.7	51	10.6	93	S	6	2.7	.....	0	Haze	.....	Calm	0.01	0.3	Clear	
North Platte, Nebraska	27.00	685.8	29.67	753.6	24	— 4.4	74	NW	8	3.6	.....	0	2s	.....	Calm	0	0	Clear	
Olympia, Washington Ter.	30.29	769.4	30.33	770.4	44	6.7	84	SW	7	3.1	.....	0	Fog	.....	Calm	2.92	74.2	Clear	
Omaha, Nebraska	28.75	730.2	29.84	757.9	37	2.8	80	N	12	5.4	.....	.....	10s	.....	Calm	0.31	7.9	Cloudy	
Oswego, New York	29.60	751.8	29.92	760.0	46	7.8	80	SE	16	7.2	.....	.....	10n	.....	Calm	0.25	6.3	Light rain	
Pembina, Dakota	29.00	736.6	29.86	758.4	26	— 3.3	88	SE	7	3.1	.....	.....	10s	.....	Calm	0.09	2.3	Cloudy	
Philadelphia, Pennsylvania	29.74	755.4	29.78	756.4	55	12.8	100	E	4	1.8	.....	.....	10n	.....	E	1.21	30.7	Light rain	
Phœnix, Arizona	.....	.....	.....	.....	38	3.3	47	Calm	.....	.....	.....	8c	0	W	.....	0	0	Cloudy	
Pike's Peak, Colorado	17.62	447.5	29.83	757.7	4	—15.6	74	W	10	4.5	.....	.....	10s	.....	W	0.03	0.8	Cloudy	
Pioche, Nevada	24.22	615.2	29.99	761.7	32	0.0	50	SW	2	0.9	.....	8c	2s	Calm	Calm	0	0	Lunar halo	
Pittsburg, Pennsylvania	28.96	735.6	29.76	755.9	51	10.6	93	SW	3	1.3	.....	5k	2s	SW	SW	0.05	1.3	Fair	
Port Huron, Michigan	29.06	738.1	29 71	754.6	50	10.0	93	SE	5	2.2	.....	0	5ks	.....	Calm	0.09	2.3	Clearing	
Portland, Maine	30.26	768.6	30.31	769.9	44	6.7	84	E	16	7.2	.....	.....	10s	.....	E	0	0	Threatening	
Portland, Oregon	30.21	767.3	30.31	769.9	51	10.6	86	SW	6	2.7	.....	.....	10n	.....	Calm	1.07	27.2	Light rain	
Prescott, Arizona	24 94	633.5	30.30	769.6	27	— 2.8	64	NW	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Punta Rassa, Florida	29.98	761.5	30.00	762.0	61	16.1	82	E	4	1.8	.....	2cs	2ks	.....	E	0	0	Clear	
Red Bluff, California	29.97	761.2	30.34	770.6	45	7.2	76	N	8	3.6	.....	2c	0	Calm	.....	0	0	Clear	
Rochester, New York	29.25	742.9	29.86	758.4	43	6.1	91	E	6	2.7	.....	.....	10s	.....	Calm	0.54	13.7	Threatening	
Roseburg, Oregon	29.78	756.4	30.36	771.1	53	11.7	96	Calm	0	0	.....	10n	Fog	Calm	Calm	0.16	4.1	Light rain	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	BAROMETER. Corrected for instrum'tal error and temperature. Inches.	BAROMETER. Corrected for instrum'tal error and temperature. Millimeters	BAROMETER. Reduced to sea-level. Inches.	BAROMETER. Reduced to sea-level. Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Upper. From—	CLOUDS. Direction. Lower. From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	WEATHER.	OBSERVER.
Sacramento, California	30.23	767.8	30.32	770.1	41	5.0	91	N	1	0.4	.....	0	0	.....	.....	0	0	Clear	
St. Louis, Missouri	29.06	738.1	29.63	752.6	40	4.4	100	NE	12	5.4	.....	.....	10s	.....	Calm	0.22	5.6	Cloudy	
St. Marks, Florida	29.91	759.7	29.93	760.2	43	6.1	100	Calm	0	0	.....	0	2s	.....	W	0	0	Fair	
St. Paul, Minnesota	28.92	734.6	29.76	755.9	36	2.2	80	NW	3	1.3	.....	5c	2s	Calm	Calm	0	0	Fair	
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salt Lake City, Utah	25.83	656.1	30.16	766.1	33	0.6	61	NW	8	3.6	.....	0	0	.....	.....	0	0	Clear	
San Antonio, Texas	29.38	746.2	29.98	761.5	46	7 8	54	N	4	1.8	.....	0	0	.....	.....	0	0	Clear	
San Diego, California	30.04	763.0	30.11	764.8	57	13.9	30	NE	2	0.9	.....	0	0	.....	.....	0	0	Clear.	
Sandusky, Ohio	29.06	738.1	29.72	754 9	52	11.1	93	S	4	1.8	.....	.....	.....	.....	.....	0	0	Clear	
Sandy Hook, New Jersey	29.81	757.2	29.83	757.7	51	10.6	100	E	34	15.2	.....	.....	10n	.....	E	0.05	1.3	Foggy	
San Francisco, California	30.24	768.1	30.31	769.9	51	10.6	79	N	6	2.7	.....	0	0	.....	.....	2.21	56.1	Light rain	
Santa Fé, New Mexico	23.29	596.6	29.83	757.7	28	—2.2	95	N	20	8.9	.....	Haze	0	.....	.....	0	0	Clear	
Savannah, Georgia	29.86	758.4	29.95	760.7	49	9.4	85	W	2	0.9	.....	Sm'e	Fog	.....	.....	0	0	Clear	
Shreveport, Louisiana	29.50	749.3	29.72	754.9	49	9.4	71	W	12	5.4	.....	.....	10s	.....	W	0	0	Clear	
Smithville, North Carolina	29.90	759.4	29.93	760.2	54	12.2	93	W	3	1.3	.....	0	2s	.....	SW	0.30	7.6	Cloudy	
Springfield, Massachusetts	29.86	758.4	29.99	761.7	44	6.7	90	NE	8	3.6	.....	.....	10n	.....	NE	0	0	Fair	
Stanwix, Arizona	.....	.....	.....	.....	44	6.7	30	N	.....	.....	.....	0	0	.....	.....	0.35	8.9	Light rain	
Stockton, Texas	27.11	688.6	30.11	764.8	27	—2.8	76	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Thatcher's Island, Mass	30.15	765.8	30.20	767.1	46	7.8	85	E	32	14.3	.....	.....	10s	.....	.....	0	0	Clear	
Toledo, Ohio	29.03	737.3	29.69	754.1	50	10.0	93	Calm	0	0	.....	.....	Fog	.....	E	0	0	Cloudy	
Tucson, Arizona	27.70	703.6	30.25	768.3	37	2.8	37	Calm	.....	.....	.....	.....	Fog	.....	Calm	0.12	3.0	Foggy	
Tybee Island, Georgia	29.91	759.7	29.95	760.7	46	7.8	92	S	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Umatilla, Oregon	29.81	757.2	.....	.....	50	10.0	64	W	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Vicksburg, Mississippi	29.45	748.0	29.71	754.6	51	10.6	59	W	16	7.2	.....	5c	0	W	.....	0.16	4.1	Fair	
Virginia City, Montana	24.12	612.6	29.60	751.8	38	3.3	72	SW	18	8.0	.....	8k	0	SW	.....	0.08	2.0	Clearing	
Visalia, California	29.96	761.0	30.36	771.1	39	3.9	91	SW	25	11.2	.....	.....	10s	.....	W	0	0	Cloudy	
Washington, D. C	29.70	754.4	29.81	757.2	54	12.2	100	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Wickenburg, Arizona	.....	.....	.....	.....	47	8.3	34	SE	4	1.8	.....	.....	Fog	.....	SE	1.20	30.5	Foggy	
Wilmington, N. Carolina	29.84	757.9	29.91	759.7	53	11.7	93	N	.....	.....	.....	2c	0	Calm	.....	0	0	Fair	
Winnemucca, Nevada	25.88	657.3	30.24	768.1	31	—0.6	89	Calm	0	0	.....	0	Fog	.....	Calm	0	0	Clear	
Wood's Holl, Mass	30.04	763.0	30.10	764.5	48	8.9	85	SW	6	2.7	.....	2k	0	W	.....	0	0	Fair	
Yankton, Dakota	28.63	727.2	29.97	761.2	28	—2.2	82	E	22	9.8	.....	.....	10s	.....	E	0	0	Cloudy	
Yuma, Arizona	30.00	762.0	30.17	766.3	59	15.0	23	NW	4	1.8	.....	.....	10s	.....	Calm	0	0	Cloudy	
SUB-SERIES.								Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
York Factory, B. A	29.89	759.2	29.95	760.7	13.5	—10.3	91	W	6	2.7	.....	.....	9s	.....	.....	0	0	Threatening	J. Fortescue, W. Wood.
Havana, Cuba, W. I	29.94	760.5	29.96	761.0	71	21.7	75	SE	1.2	0.5	.....	0	2ks	.....	Calm	0	0	Fair	Chas. Hasselbrink.
Kingston, Jamaica, W. I	30.07	763.8	30.08	764.0	77	25.0	78	Calm	0	0	.....	8c	2s	Calm	.....	0	0	.....	James Gall.
Navassa, W. I	29.85	758.2	29.93	760.2	83	28.3	.....	NE	10	4.5	.....	.....	.....	.....	.....	0	0	Fair	F. M Everett.
St. Thomas, W. I	.....	.....	.....	.....	81	27.2	91	NE	2	0.9	.....	2c	2k	NE	.....	0	0	.....	G. O. Gellich.
Paramaribo, D. Guiana, S. A	.....	.....	29.96	761.0	84	28.9	75	E	.....	.....	2	5k	6ks	E	.....	0	0	Fair	C. J. Hering.
Batavia, Dutch Guiana, S. A	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Dr. H. Groot.
Medellin, Colombia, S. A	25.22	640.6	.....	.....	64.0	17.8	89	Calm	.....	.....	0	.....	10ks;s	.....	.....	0.55	14.0	Cloudy	Thomas Herran.
Honolulu, Oahu, H. I	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Daniel Smith.
Makawao, Maui, H. I	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fe, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.67 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

*Observation not simultaneous.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	BAROMETER. As reported.* Inches.	BAROMETER. As reported.* Millimeters.	BAROMETER. Attached Thermometer. Fahrenheit.	BAROMETER. Attached Thermometer. Centigrade.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Up'er From—	CLOUDS. Direction. Low'r From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	SEA-SWELL. CHARACTER.	SEA-SWELL. DIRECTION FROM—	WEATHER.	OBSERVER.
Navy Yard Mare Island, Cal.	30.28	769.1	45	7.2	43	6.1	100	N	5	2.2	.....	.....	2s	.....	Calm	0	0	.....	.....	Clear.	
Navy Yard, Pensacola, Fla.	29.92	760.0	.....	.....	67	19.4	84	S	29	13.0	.....	.....	6	.....	SSW	0	0	.....	.....	D. clouds.....	
Navy Yard, Portsmouth, N.H	30.25	768.3	54	12.2	32	0.0	90	E	10	4.5	.....	.....	10	.....	.....	0	0	.....	.....	Cloudy.....	
Naval Hospital, Yokohama, Japan.....	30.00	762.0	60	15.6	55	12.8	74	NE	.....	.....	2	.....	7k	.....	S	0	0	.....	.....	Cloudy.....	
Adams. Punta Arenas, Patagonia.	30.00	762.0	51	10.6	51	10.6	72	SW	.....	.....	1	.....	9	.....	S	0	0	None	.....	D. clouds.....	
Alert. Yokohama, Japan.....	30.14†	765.5†	59	15.0	59	15.0	70	N	.....	.....	2	.....	6	.....	N	.....	.....	.....	.....	D. clouds.....	
Alliance, Constantinople, Turkey.	30.04	763.0	65	18.3	55	12.8	62	SE	.....	.....	1–2	.....	7	.....	SE	.....	.....	.....	.....	Cloudy.....	
Ashuelot. N. 33° 46,′ E. 122° 52′.....	30.42	772.7	60	15.6	48	8.9	78	NW	.....	.....	3	.....	9	.....	NW	.....	.....	Smooth	.....	Drizzling.....	
Canonicus, New Orleans, La.....	29.81	757.2	45	7.2	56	13.3	57	SW	.....	.....	3	.....	4	.....	S&W	.....	.....	.....	.....	Pleasant.....	
Colorado, New York, N. Y.....	29.89	759.2	51	10.6	51	10.6	93	E	9	4.0	.....	.....	10	.....	E	0.95	24.1	.....	.....	Raining.....	
Despatch, Constantinople, Turkey.	30.04	763.0	60	15.6	56	13.3	63	SE	.....	.....	2	.....	5	.....	SW	.....	.....	.....	.....	Pleasant.....	
Essex, Clarence, Fernando Po Id.	29.84	757.9	83	28.3	83	28.3	96	NE	.....	.....	1	.....	3	.....	.....	.....	.....	Smooth	.....	D. clouds.....	
Franklin, Norfolk, Va.....	29.97	761.2	53	11.7	53	11.7	86	SSW	4.2	1.9	.....	.....	9?	.....	SSW	0	0	.....	.....	Clear	
Guard, N. 39° 34′, W. 26° 30′.....	29.85	758.2	67	19.4	65	18.3	94	SSE	.....	.....	4	.....	8	.....	S	.....	.....	Long	S	D. clouds.....	
Lackawana, San Francisco, Cal.....	30.32	770.1	.....	.....	55	12.8	68	N	.....	.....	3	.....	0	.....	.....	.....	.....	.....	.....	Blue sky.....	
Marion, Smyrna, Turkey.....	29.97	761.2	62	16.7	65	18.3	58	Calm	.....	.....	0	.....	8	.....	Calm	Light	Light	Smooth	.....	D. clouds....	
Michigan, Erie, Pa.....	29.30	744.2	76	24.4	54	12.2	74	SSE	.....	.....	3	.....	10	.....	SSE	.....	.....	.....	.....	Cloudy.....	
Monongahela, Alexandria, Egypt.....	30.10	764.5	70	21.1	70	21.1	90	N&W	.....	.....	2	.....	k	.....	.....	Light	Light	Smooth	.....	D. clouds.....	
New Hampshire, Port Royal, S.C.....	30.07	763.8	.....	.....	58	14.4	58	WSW	2	0.9	.....	.....	1	.....	SW	0	0	.....	.....	D. clouds.....	
Omaha, Callao, Peru.....	30.08	764.0	73.5	23.1	71.5	21.9	90	Calm	0	0	.....	.....	10	.....	Calm	0	0	Smooth	.....	Cloudy.....	
Onward, Callao, Peru.....	30.06†	763 5†	73	22.8	70	21.1	85	SE	.....	.....	2	.....	10	.....	.....	.....	.....	Long	W	Misty.....	
Ossipee, Norfolk, Va.....	29.91	759.7	68	20.0	55	12.8	87	SW	.....	.....	1	.....	1	.....	Calm	.....	.....	.....	.....	D. clouds.....	
Palos, Shanghai, China.....	30.36	771.1	56	13.3	47	8.3	85	NNW	.....	.....	2	.....	6	.....	N;W	.....	.....	.....	.....	Cloudy..	
Plymouth. N. 31° 25′, W. 68° 34′.....	30.05	763.3	74	23.3	72	22.2	100	SSE	.....	.....	6	.....	10	.....	S	.....	.....	Heavy	SE	Squally.....	
Powhatan, N. 35° 59 , W. 75° 34′.....	.....	.....	.....	.....	55	12.8	100	WSW	8.4	3.8	.....	.....	0	.....	.....	0	0	Heavy	SE	Clear.....	
Ranger, Shanghai, China.....	30.51	774.9	68	20.0	56	13.3	81	NNW	.....	.....	2	.....	10	.....	Calm	.....	.....	.....	.....	Cloudy.....	
Rio Bravo, Brownsville, Texas.....	30.03	762.7	.....	.....	55	12.8	74	WNW	.....	.....	3	.....	8	.....	WNW	.....	.....	.....	.....	D. clouds.. ...	
Santee, Annapolis, Md.....	29.88	758.9	68	20.0	54	12.2	93	W	.....	.....	0–1	.....	10	.....	.....	1.79	45.5	.....	.....	Dense fog....	
Saratoga, Hampton Roads, Va.....	.....	.....	.....	.....	63	17.2	94	SW	.....	.....	1	.....	3	.....	Calm	Heavy	Heavy	.....	.....	Clear	
St. Louis, League Island, Pa	29.73	755.1	54	12.2	56	13.3	94	NNE	4	1.8	.....	.....	10	.....	ENE	1.75	44.5	.....	.....	Overcast.....	
Swatara, Off Kittyhawk Bay, N. C.	29.95	760.7	.. ..	.....	55	12.8	87	SW	.....	.....	3	.....	0	.....	.....	.....	.....	Long	SE	Blue sky.....	
Tennessee, Yokohama, Japan.....	30.14	765.5	67	19.4	55	12.8	57	N	12	5.4	.....	.....	6	.....	W	0	0	Smooth	.....	D. clouds.....	
Trenton, Villefranche, France.....	29.43	747.5	.....	.....	60	15.6	34	W	4	1.8	.....	.....	2	.....	W	0.5	13.	Ground	S	Squally.....	
Vandalia, Villefranche, France,....	29.38†	746.2†	60	15.6	59	15.0	43	NW	.....	.....	1–4	.....	0	.....	.....	.....	.....	Long smooth	SW	Squally.....	
Wabash, Boston, Mass.....	30.20	767.1	58	14.4	46	7.8	84	ENE	18	8.0	.....	.....	10	.....	ENE	0	0	.....	.....	D. clouds.....	
Wyoming, Washington, D. C.....	30.18†	766.6†	64	17.8	53	11.7	.....	ENE	.....	.....	2	.....	10	.....	.....	.....	.....	.....	.....	Raining.....	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. The position given for the Plymouth is that at noon, local time, instead of that at 7:35 a. m., Washington time.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Character.	Direction from—		
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska, Seattle, W. T.			30.28†	769.1†	50	10.0		SE			3							Clear	Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama, N. 7° 25′ 12″, W. 81° 00′			29.69	754.1	80	26.7	91	NW			2		4		E	Light	S	D. clouds	Capt. Howard.
S. S. City of Peking																			Lt. Z. L. Tanner, U.S.N
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio, N. 33° 50′, E. 136° 53′			29.97	761.2	64	17.8		NW			6					Long	N	Blue sky	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

NOTE.—The originals give the wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. † Aneroid; corrected for elevation, instrumental error not known.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.

S. S. Belgic																			Capt. John Metcalf.
S. S. Gaelic																			
N. 30° 00′, W. 156° 35′			29.75*	755.6*	74	23.3	95	WSW			6		kn		W	Heavy	W	Raining	Capt. W. H. Kidley
S. S. Oceanic, N. 44° 57′, W. 173° 7′			29.90	759.4	40	4.4	100	Var.			2-4		4		E	Smooth		D. clouds	Capt. H. Parsell.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. *Aneriod.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig, N. 44° 56′, W. 50° 53′	S68½W	14.0	30.13	765.3	41.0	5.0	74	N			6		kd		NE	Rough		Clearing	Capt. K. Undütsch.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio, Baltimore, Md.			29.85	758.2	54.0	12.0	100	Calm			0		10					Overcast	Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, nor distinguish between upper and lower clouds.

UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Lo'wr	Upper.	Lower.	Character	Direction From—		
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second	0—10.	0—10.	0—10.	From—	From—				
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, Liverpool			29.75*	755.6*	46	7.8	77	SW			4		3		SE			Fine	Captain Sargent.
S. S. Ohio. N. 51° 29′, W. 28° 58′			29.96	761.0	47	8.3	85	N			3		10?		Calm	Smooth	NNE	Clear?	Captain Morrison.
S. S. Pennsylvania, N. 41° 00′, W. 60° 29′			30.31†	769.9†	51	10.6	86	NE			5		7		NE	Large	NE	Cloudy	Captain Harris.

NOTE.—The originals give the barometer as read off; the wind-force by the scale 0 to 12. *Aneroid; correction for elevation applied, instrumental error not known.
† Corrected for temperature and elevation, instrumental error not known.

RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

S. S. Nederland																			Capt. Randle.
S. S. Switzerland, N. 44° 18′, W. 55° 39′			30.47*	773.9*	46	7.8		NE	15	6.7			10		NE	Heavy	NE	Overcast	Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

*Aneroid; regulated to standard at Antwerp.

ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

S. S. Hibernian																			Capt. W. Richardson.
S. S. Scandinavian																			

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, Kennebunk, Maine			30.33	770.4	47	8.3	100	ESE	15	6.7			10n		ESE			Raining	Capt. James Jorgensen.

NOTE.—The originals for the schooner Addie Fuller give the amount of cloudiness by the scale 0 to 4; the barometer as read off.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg'l,) Chief Signal Officer. U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON NOVEMBER 26, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.

1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.

1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:28 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours	.....	.....	30.21	767.3	66.9	19.4	68	N	.....	.....	2	.....	0	.....	.....	0	0	Clear.	Michel.
Algiers	.....	.....	30.14	765.6	61.5	16.4	67	Calm	.....	.....	0	.....	2	.....	.....	0	0	Fair	Peter.
La Calle	.....	.....	30.15	765.9	62.2	16.8	73	NW	.....	.....	3	.....	5	.....	.....	0	0	Cloudy	Fleury.
Tunis	.....	.....	30.14	765.5	60.1	15.6	45	NW	.....	.....	5	.....	4	.....	.....	0.028	0.7	Cloudy	Jacques.
Sfax	.....	.....	30.18	766.5	64.4	18.0	.....	W	.....	.....	3	.....	0	.....	.....	0	0	Clear.	Husson.
Saida	.....	.....	30.24	768.1	63.0	17.2	33	WSW	.....	.....	1	.....	2	.....	.....	0	0	Fair	Millot.
Tebessa	.....	.....	30.04	763.1	.....	.....	.....	NW	.....	.....	2	.....	2	.....	.....	.....	.....	Fair	Bourgeois.
Geriville	.....	.....	30.10	764.4	52.7	11.5	78	WNW	.....	.....	2	.....	3	.....	.....	0	0	Pretty fair.	Lemalilot.
Laghouat	.....	.....	30.24	768.2	62.6	17.0	44	N	.....	.....	2	.....	0	.....	.....	0	0	Clear	Guyot.
Biskra	.....	.....	30.19	766.9	69.3	20.7	17	NW	.....	.....	1	.....	0	.....	.....	0	0	Clear	Kuntz.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m.; or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

Agram	29.34	745.2	29.80	759.3	48.4	9.1	29	NE	.....	.....	3	.....	2	.....	.....	0	0	.....	Prof. Ivan Stozir
Cracow, I. R. Observatory	28.97	735.9	29.76	755.9	36.7	2.6	89	W	.....	.....	2	.....	10	.....	.....	0.094	2.4	.....	Dr. Wierzbiski.
Eperies	28.70	730.5	29.65	753.1	41.0	5.0	69	NW	.....	.....	3	.....	10k	.....	.....	0.150	3.82	.....	Julius Mikolik.
Gratz	28.67	728.1	29.65	760.7	41.2	5.1	49	NW	.....	.....	4	.....	3	.....	.....	0.303	7.7	.....	Andreas Rospini
Hermannstadt	28.10	713.3	29.62	752.3	35.2	1.8	93	NW	.....	.....	3	.....	10	.....	.....	0.439	11.15	Rain & snow	Prof. Reissenberger.
Kremsmünster	28.64	727.5	30.03	762.8	37.0	2.8	79	W	.....	.....	4	.....	10	.....	.....	0	0	.....	Prof. C. Wagner.
Lemberg	28.58	725.8	29.58	751.2	38.5	3.6	80	NW	.....	.....	1	.....	10	.....	.....	0.039	1.0	.....	Dr. T. Stanecki.
Pola	29.78	756.4	29.89	759.3	53.1	11.7	31	NNW	.....	.....	1	.....	8cs	.....	.....	0.039	0.99	.....	I.R.HydrographicOffice
Szathmar	29.18	741.2	29.65	753.2	41.4	5.2	86	SW	.....	.....	3	.....	10	.....	.....	0.124	3.15	.....	Johann Tamas, S. J.
Szegedin	29.44	747.7	29.72	754.9	41.4	5.2	81	N	.....	.....	3	.....	10	.....	.....	0	0	.....	Karl Stancel.
Trieste	29.84	757.8	29.94	760.4	50.2	10.1	54	W	.....	.....	1	.....	0	.....	.....	0	0	Clear	P. Busin.
Vienna	29.17	740.8	29.67	753.8	42.1	5.6	61	WNW	.....	.....	5	.....	.....	.....	.....	0.087	2.2	.....	I. R. Central Met. Obs'y
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time, and at Trieste at 7 a. m. of the following day. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

Arlon	28.62	724.5	30.09	764.2	35.1	1.7	92	SW	.....	.....	1	.....	9	.....	.....	0.228	5.8	.....	Prof. M. Passau.
Brussels	29.80	757.0	30.01	762.3	40.3	4.6	89	WSW	.....	.....	3	.....	3	.....	NW	0.157	4.00	.....	Royal Observatory.
Furnes	29.93	760.3	29.96	760.9	45.0	7.2	96	SSW	.....	.....	2	.....	9	.....	.....	0.307	7.8	.....	M. E. de Cae.
Maeseyck	29.87	758.7	30.00	762.0	41.5	5.3	86	SW	.....	.....	2	.....	2	.....	.....	0.169	4.3	.....	M. Pierrot.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

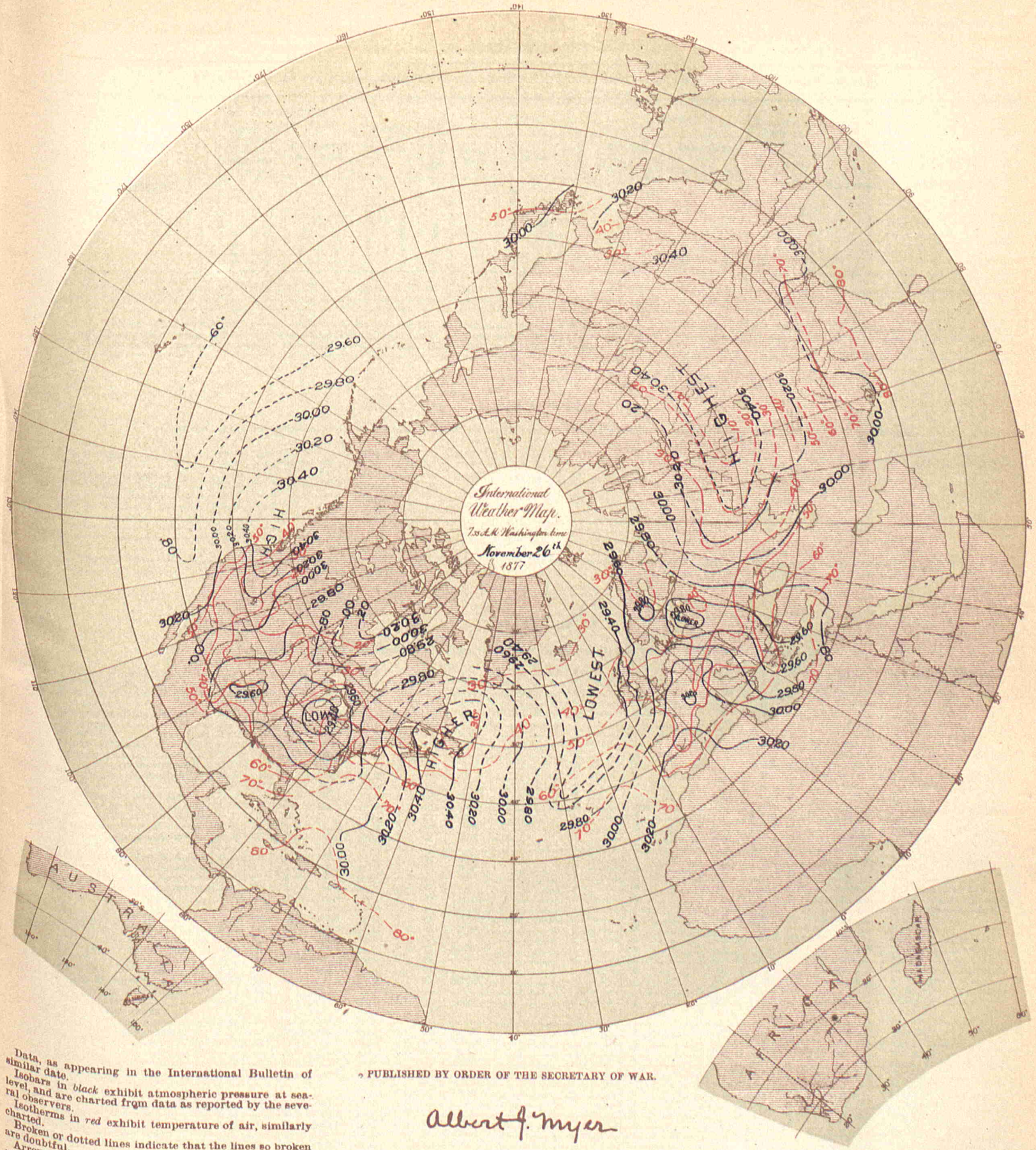
Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	29.54	750.3	29.64	752.8	38.1	3.4		S	10	4.5			9			0.550	13.97	Misty	W. Boswell.
Ardrossan	29.58	751.3	29.60	751.8	46	7.8		SSW			3		8					Overcast	William McNeil.
Armagh, Observatory			29.56	750.8	43.2	6.2		SSE	17	7.6			10					Overcast	S. Call, for Dr. Robinson
Bidston, (Liverpool Obs.)			29.73	755.1	43.0	6.1		SSE	15	6.7			10					Overcast	John Hartnup.
Birr Castle, (Parsonstown)			29.48	748.8	46.7	8.2		SE			1		10					Misty	J. L. E. Dreyer.
Bradford, Yorkshire	29.35	745.5	29.74	755.4	44.1	6.7		S			1		5			0	0	D. clouds	J. McLandsborough.
Bridgetown, (Barbados)	29.88	758.9	29.91	759.7	82.0	27.8		NE			1		3					D. clouds	Pvt. G. W. Roberts, A.
Cambridge, Observatory			29.85	758.2	41.0	5.0		S			1		10					Overcast	H. Todd. [H. C.
Cardington			29.85	758.2	44.0	6.7		S			1		6					D. clouds	John McLaren.
Chatham, School M. E	29.75	755.6	29.89	759.2	44.7	7.1		S			2		9					Drizzling	Lt. W. G. Morris, R. E.
Dartmoor	28.27	718.0	29.75	755.6	43.6	6.4		SE			5		8					Raining	Alexander Watt.
Davos Platz (Switzerland)																			Francis Redford, M. A.
Donaghadee	29.56	750.8	29.59	751.6	43	6.1		SSW			2		10					Overcast	J. Mac Gowan.
Dover	29.89	759.2	29.92	760.0	47	8.3		WSW			4		4					¾ clouded	J. Costello.
Eccles, (near Manchester)			29.79	756.7	43.0	6.1		S	2.2	1.0			10					Gloomy	Thomas Mackereth.
Falmouth, Observatory	29.50	749.3	29.73	755.1	49.8	9.9		SSE			6		10					Drizzling	The Staff.
Fort Napier, (Natal)	27.25	692.1	29.42	747.3	94.4	34.7		NW			6		10					Overcast	Pvt. G. Salmon, A. H. C.
Free Town, (Sierra Leone)			29.89	759.2	84.6	28.9		E			1		3					D. clouds	
Galway, Queen's College																			Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	30.12	765.0	30.18	766.6	65.2	18.4		E			2		1					D. clouds	Corpl. C. Aitken, A. H. C.
Glasgow, Observatory	29.41	747.0	29.61	752.1	41.8	5.4		SSE			1		10					Gloomy	D. G. Maclean.
Great Yarmouth	29.88	758.9	29.88	758.9	41	5.0		SW			2		3					Misty	G. T. Watson.
Greenwich, Royal Obs'y	29.70	754.4	29.88	758.9	45.4	7.4		SSW			1		5					D. clouds	The Staff, for G. B. Airy.
Guernsey	29.65	753.1	29.87	758.7	50	10.0		SSW			3		6					D. clouds	Dr. S. E. Hoskins, F. R. S.
Helston			29.73	755.1	53	11.7		S			2		10n			0.03	0.8	Showery	M. P. Moyle.
Holyhead	29.55	750.6	29.60	751.8	47	8.3		S			6		10					Misty	John Tilston.
Jersey	29.63	752.6	29.92	760.0	49.0	9.4		SSW			6		9					Gloomy	J. Fisher.
Kew, Observatory			29.87	758.7	44.6	6.9		S	12	5.4			6					Hazy	The Staff.
Kingstown	29.56	750.8	29.59	751.6	46	7.8		SSE			4		10					Overcast	George Mitchell.
Leicester, Museum			29.81	757.2	42.7	5.9		SW			1		10					Overcast	Wm. J. Harrison, F. G. S.
Malta, (Mediterranean)	29.84	757.9	29.92	760.0	61.8	16.6		NW			4		4					D. clouds	Sgt. C. Arbeiter, A. H. C.
Nairn	29.42	747.3	29.52	749.8	41	5.0		Calm			0		8					¾ clouded	W. D. Penny.
Nassau, (Bahamas)			29.93	760.2	61.0	16.1		NW			0		10					Overcast	C. S. Duncombe.
Nottingham, Observatory	29.62	752.3	29.81	757.2	42.7	5.9		S			2		5c;cs		WNW	0.002	0.05	D. clouds	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.25	742.9	29.78	756.4	42.0	5.6		S			2		10					Overcast	Rev. Stephen Whitty
Oxford, Radcliffe Obs'y			29.84	757.9	45	7.2		S			1		10					Overcast	F. Lucas
Plymouth	29.70	754.4	29.77	756.1	51.0	10.6		SSW			3		10					Overcast	John Merrifield.
Roche's Point	29.50	749.3	29.54	750.3	51	10.6		S			6		10					Misty	W. Kennedy.
Saint Ann's Head	29.49	749.0	29.65	753.1	49	9.4		SSE			6		10					Misty	John C. Walker.
Sandwick Manse, (Orkneys)			29.51	749.5	40.0	4.4		S	22	9.8			10					Drizzling	Rev. C. Clouston, LL. D
Scutari, Cemetery, (Turkey)			29.57	751.1	62.6	17.0		SSE			2		6					D. clouds	Sergt. W. H. Lyne.
Sheffield	29.54	750.3	29.78	756.4	41.3	5.2		SSW			1		7			0.10	2.5	D. clouds	W. F. Cooper.
Silloth Rectory	29.63	752.6	29.66	753.4	43.1	6.2	93	NW			1		10			0.230	5.84	Raining	Rev. F. Redford, M. A.
Stonyhurst, Observatory					41.0	5.0		S			2		10					Misty	Rev. S. J. Perry.
Stornoway, Lews C. (Hebr.)			29.36	745.7	43	6.1		SSW			4		5					Raining	John Smith.
Stratfield Turgiss	29.71	754.6	29.93	760.2	45.3	7.4		SW			2		8					D. clouds	Rev. C. H. Griffith, F. M. S.
Thurso			29.50	749.3	40	4.4		S			3		8					Gloomy	John Trotter.
Truro, Royal Institution			29.64	752.8	52	11.1		S			8		10					Raining	W. Newcombe.
Valencia, Observatory			29.37	746.0	50.1	10.1		SE	34	15.2			10					Raining	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)																			Henry Mercer.
Cape Good Hope, Obs'y	29.79	756.7	29.83	757.7	67.0	19.4	79	WNW				10	10						The Staff, for E. J. Stone.
Hobart Town, (Tasmania)			29.56	750.8	68.0	20.0	78	NW			2		10n			0	0	Covered	Francis Abbott, F. R. A. S.
Leith, Restalrig Park																			Andrew Gibb.
Mauritius, Observatory	29.82	757.4	30.00	762.1	78.0	25.6	75	E	11.5	5.1		0	8		SE	0.23	5.8	Fine; cloudy	C. Meldrum.
Melbourne, Observatory	29.79	756.7	29.90	759.4	60.1	15.6	71	S	10	4.5			3			0	0	Fine	R. L. J. Ellery.
Monach L't-house, (Hebrides)																			J. Youngclause.
North Unst, (Shetland Is.)																			Robert Burnet.

Note.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m.

Marine Series. Vessels.	Sea or swell. Height scale 0—9	Sea or swell. Direction from—		
S. S. Algeria				
S. S. Batavia, N. 42° 40', W. 60° 20'				Capt. W. Watson.
Ship Camperdown	4	ENE	D. clouds	Capt. J. E. Moulaud.
Brig Catherine				Capt. A. T. Miller.
Barque Celeste				Capt. Adam Smith.
S. S. Hibernia				Capt. D. F. McKechnie.
Barque Maroon				Capt. W. R. Cato
Ship Mikado				Capt. A. T. Brown.
S. S. Seine				Capt. C. C. Prehn.
Barque Sonata				Capt. H. Manning.
Schooner Traveller				Capt. Jas. J. Price.
				Capt. Alex. Simpson

Note.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	BAROMETER. Corrected for instrum'tal error and temperature.		BAROMETER. Reduced to sea-level.		TEMPERATURE OF THE AIR.		RELATIVE HUMIDITY.	WIND. Direction.	WIND. Velocity.		WIND. Force.	CLOUDS. Amount.		CLOUDS. Direction.		RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS.		WEATHER.	OBSERVER
	Inches.	Millimeters.	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	Up'er 0—10.	Low'r 0—10.	Upper. From—	Lower. From—	Inches.	Millimeters.		
San José	26.17	664.7			66.6	19.2	92	E			1	7csd	2k	E	NE	0.60	15.2		Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.66	753.4	29.71	754.6	40.1	4.5	78	NNW			2		10						
Fanöe	29.77	756.1	29.79	756.6	40.5	4.7	87	W			2		1						
Godthaab, (Greenland)	29.69	754.0	29.73	755.1	29.1	— 1.6	94	SSE			2		10						
Stykkisholm, (Iceland)	29.20	741.7	29.24	742.8	28.9	— 1.7	96	SE			2		5						
Thorshavn, (Faröe)	29.27	743.4	29.30	744.3	38.7	3.7	85	SW			2		10					Raining	
Vestervig	29.59	751.6	29.76	755.9	38.5	3.6	93	Calm			0		4						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

Alençon, Normal School	29.56	750.7	30.11	764.7	48.2	9	85	SW			1		5		NW	0	0	Cloudy	Collignon, Director.
Amiens, Normal School	30.01	762.2	30.12	765.0	46.4	8.0	81	W			2		5		W	0.189	4.8	Cloudy	Bonvarne, Director.
Avignon, Normal School	30.04	763.0	30.12	765.0	48.2	9	40	NNW			3		2		NW	0	0	Slightly cl'dy	Mr. Giraud, Director.
Bar-sur-Seine	29.52	749.8	30.10	764.6	43.9	6.6	70	WSW			2		8cn		NW	0	0	Very cloudy	C. Saillard.
Beaumette Obs'y (Angers)	29.84	757.8	30.00	761.9	49.8	9.9	66	S	8.1	3.6					W	0.193	4.9		Albert Cheux.
Beauvais	29.76	756.0	30.06	763.4	45.1	7.3	81	S			1		8		NW	0	0	Very cloudy	Normal School.
Besançon	29.27	743.5	30.19	766.9	41.7	5.4	81	SW			3		8		W	0.126	3.2	Very cloudy	Normal School.
Bourg-en-Bresse	29.21	742.0	30.13	765.3	40.5	4.7	71	S			2	5c		SE		0	0	Cloudy	Normal School.
Bourges, Normal School	29.56	751 3	30.15	765.7	43.0	6.1	88	S			2		1		SE	0	0	Slightly cl'dy	A. Wagner, Director.
Brest, Naval Observatory	29.54	750.4	29.76	756.0	49.8	9.9	81	S			4		10		S	0.030	0.75	Raining	The Staff.
Carcassonne, Normal School	29.61	752.1	30.03	762.7	48.2	9	45	E			2		2		E	0	0	Slightly cl'dy	Vateau, Director.
Caen	29.90	759.5	29.98	761.4	47.1	8.4	78	N			2		5		E	0	0	Cloudy	Normal School.
Chartres, Normal School	29.47	748.5	30.04	763.1	50.0	10	62	SW			2		8		ESE	0	0		Lequin, Director.
Châlons-sur-Marne, N. Sch'l	29.76	756.0	30.10	764.4	41.2	5.1	94	S			1		5ck			0.004	0.1	Cloudy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.73	729.7	30.09	764.2	42.8	6.0	67	S			3		2			0.012	0.3	Slightly cl'dy	Alluard, Director.
Commercy, Normal School	29.21	741.9	30.11	764.9	41.0	5	87	SW			2		5		SW	0.016	0.4	Cloudy	Dr. Goulet, Director.
Commune de Gréasque*	28.96	735.5	30.10	764.5	45.5	7.5	51	NW			4		5		NW	0	0	½ covered	M. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	29.80	756.8	30.02	762.4	48.6	9.2	81	SE			6		8		SW	0	0	Very cloudy	Mouillot, Director.
Le Mans, Normal School	29.74	755.5	30.06	763.4	44.6	7	83	SW			2		5		SW	0	0	Cloudy	Poirrier, Director.
Lons-l.-e-Saulnier, N. School	29.22	742.3	30.17	766.2	40.5	4.7	84	W			1		5		E	0.071	1.8	Cloudy	Pin, Director.
Lorient, Naval Observatory	29.83	757.6	29.93	760.1	53.2	11.8	71	S			5		10			0.520	13.2	Covered	T. Carré, Director.
Mâcon, Normal School	29.47	748.5	30.18	766.6	39.7	4.3	93	Calm			0		0			0	0	Clear	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	29.01	736.8	30.09	764.3	39.2	4	83	NW					5		SE	0.08	2.	Cloudy	Normal School.
Nismes, Normal School	29.89	759.2	30.10	764.5	51.4	10.8	56	NW			2		5		SE	0	0	Cloudy	Boyer, Director.
Orleans, Normal School	29.63	752.7	30.02	762.6	43.7	6.4	79	S			2		5			0	0	Cloudy	Bernard, Director.
Paris, Observatory	29.82	757.3	30.00	763.5	46.2	7.9	74	SSW			1		8			0	0	Very cloudy	National Observatory.
Privas	28.98	736.2	30.07	763.8	46.4	8	53	N			2		10			0	0	Covered	Normal School
Rochefort, Naval Obs'y	30.04	762.9	30.07	763.7	48.6	9.2	84	S			3		10		S	0.28	7.	Covered	Lt. Decante, Director.
Rouen, Normal School	29.93	760.1	30.01	762.3	47.7	8.7	67	NNW			3		10		W	0.020	0.5	Covered	F. Lucard, Director.
Tarbes, Normal School																			T. Hugues, Director.
Villefranche	29.47	748.5	30.20	767.0	46.9	8.3	83	SW			2		5		NW	0.04	1.	Cloudy	Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.77	756.1	29.80	756.8	81.3	27.4										0	0		L'Abbé Marchési.
Marseilles, Observatory			30.08	764.1	48.0	8.9	46	NW			2-3		5			0	0	Partly cl'dy	The Staff.
Mont-Louis	24.88	631.9	30.19	766.9	35.8	2.1	46	WSW	22.4	10.00			2		W	0.020	0.5		Mr. Falguère.
Nice			30.00	761.0	55.6	13.1	37	NE			1		1		NE	0	0	Clear	Dr. A. Niepce.
Paris, Montsouris Obs'y	29.77	756.2	30.05	763.2	45.7	7.6	72	SSW			2-3		9		NW	0	0		Marié Davy, Director.
Perpignan			30.14	765.6	52.0	11.1	60	SE	7.4	3.33			0			0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.																			M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.53	572.3			41.0	5.0		NW			3		5			0.213	5.4	Cloudy	Gen'l de Nansouty.
Saint Maur, (near Paris)	29.89	759.3	30.06	763.5	45.5	7.5	77	S			1		9	NW		0	0		E. Renou.
Toulouse, Observatory	29.43	747.6	30.16	766.0	45.3	7.4	71	SE			1		8			0.079	0.20		The Staff.
Tours	29.86	758.4	30.06	763.4	46.4	8.0	70	SSW			1		3		W	0	0		C. Marquet.
Versailles, (near Paris)			30.04	763.0	46.4	8.0	75	SW			2		9			0	0	Lightly cov'd	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.34	770.5	30.36	771.2	44.4	6.9	86	N	0.4	0.2			10km			0	0	Covered	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; for Montsouris, the barometer reduced to freezing but not to sea-level. At Mirecourt the cloud direction is apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 195 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg																			Prof. Dr. Hoh.
Berlin	29.66	753.4	29.84	757.9	42.1	5.6	77	W			4		7			0.098	2.49		Prof. Arndt.
Breslau	29.23	742.5	29.76	755.8	37.2	2.9	86	W			6		10			0.413	10.49		Royal University Obs'y.
Carlsruhe	29.66	753.3	30.10	764.5	41.4	5.2	76	SW			2		10			0	0		Albert Senz.
Cassel	29.40	746.8	30.01	762.2	41.7	5.4	70	W			2		7	W		0.120	3.05		Dr. H. Möhl.
Crefeld	29.82	757.3	29.98	761.4	41.5	5.3	81	SW			2		9			0.04	1.		Director Lose.
Emden	29.90	759.5	29.94	760.4	43.5	6.4	85	SW			2		5			0.165	4.2		Prof. Prestel.
Frankfort on the Main	29.70	754.3	30.07	763.8	41.9	5.5		WSW			2		8			0	0		Physical Society.
Friedrichshafen	28.71	729.2	30.20	767.0	38.7	3.6	77	WSW			9		10	NW		0	0		M. Wilhelm.
Hamburg	29.79	756.7	29.86	758.5	40.8	4.9	90	W			3		3k			0.039	1.0	Fine	Captain F. Hegemann.
Kiel	29.80	756.9	29.82	757.3	40.3	4.6	78	WNW			3		0			0	0		Prof. G. Karsten.
Königsberg, (Prussia)	29.20	741.7	29.28	743.7	37.8	3.2	87	SE										Cloudy	Prof. E. Luther.
Köslin			29.52	749.9	36.5	2.5		NW			6		5			0	0		H. Müller.
Leipsic, Observatory	29.51	749.6	29.95	760.7	36.7	2.6	100	NW			2		9	WNW		0.068	1.6	Rain & graupel.	Prof. Bruhns.
Memel, Naval School	29.29	744.0	29.34	745.1	38.1	3.4	92	SE			4		10n					Raining	Reinbrecht von Skalweit.
Neufahrwasser	29.29	743.9	29.30	744.3	36.5	2.5	91	NW			4		10			1.102	28.0	Raining	A. Lothes.
Posen	29.35	745.5	29.65	753.1	39.2	4.0	73	W			9		10					Cloudy	Dr. Magener.
Strassburg Obs., (in Alsace	29.57	751.0	30.13	765.3	44.2	6.8	67	SW			3		9	NW		0.056	1.43		Dr. Schur.
Stuttgart	29.12	739.6	30.09	764.2	41.0	5.0	66	W			3		9	W		0	0		Prof. Schoder.
Treves, (Trier)	29.45	747.9	29.97	761.2	41.0	5.0	79	SW			5		10			0.104	2.63	Foggy	Prof. Flesch.
Weissenburg, (Bavaria)	28.52	724.4	30.09	764.2	35.1	1.7	90	WNW	7	3			10		WNW	0.067	1.7	Covered	Dr. Von Bebber.
Wustrow, Naval School	29.80	756.9	29.83	757.7	41.0	5.0	90	NW			3		10					Covered	E. F. Schütz.
German Naval Series.																			

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet: Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4, Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.20	741.7	29.59	751.6	60.6	15.9		SW										Clear	Dr. J. F. J. Schmidt.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and wind-force; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	30.02	762.5	30.07	763.9	74.1	23.4	34	ENE	13.0?	5.8?			4			0	0	D. clouds	
Deesa	29.56	750.9	30.05	763.3	75.2	24.0	23	NW					0			0	0	Blue sky	
Bombay	29.89	759.1	29.92	760.1	80.6	27.0	78	NNW	24.0	10.7			2		N	0	0	D. clouds	
Poona	27.91	708.9	29.90	759.4	83.7	28.7	51	N					7		NE	0	0	D. clouds	
Lahore	29.29	744.0	30.07	763.7	64.1	17.8	81	N	3.9	1.7			0			0	0	Blue sky	
Belgaum	27.40	696.0	29.95	760.8	75.2	24.0	69	S	3.0	1.3			7		SE	0	0	Thunder,lightn'g	
Bangalore																			
Roorkee	29.06	738.0	29.97	761.3	70.8	21.6	66	NW	1.8	0.8			2			0	0		
Agra	29.39	746.5	29.96	761.0	75.7	24.3	64	W								0	0		
Trichinopoly																			
Nagpur	28.91	734.3	29.95	760.8	81.6	27.6	41	Calm	2.4	1.1			0			0	0	Blue sky	
Madras																			
Lucknow	29.58	751.2	29.95	760.8	78.3	25.7	56	NNW	2.4	1.1			7		ESE	0	0	D. clouds	
Allahabad	29.62	752.4	29.93	760.3	79.7	26.5	61	Calm	0.5	0.2			9		E	0	0	D. clouds	
Patna	29.76	755.8	29.94	760.5	78.9	26.1	64	E	1.1	0.5			6	SE	SE	0	0	D. clouds	
Hazaribagh	27.94	709.6	29.98	761.4	73.0	22.8	54	NW	4.1	1.8			0			0	0	Blue sky	
Cuttack	29.90	759.4	29.98	761.6	78.2	25.7	74	Calm	2.8	1.2			0			0	0	Blue sky	
Calcutta (Alipore)	29.95	760 8	29.97	761.3	74.6	23.7	78	W	1.0	0.4			0			0	0	Blue sky	
Goalpara	29.53	750.0	29.93	760.1	72.8	22.7	78	Calm	1.4	0.6			1		W	0	0	D. clouds	
Chittagong	29.91	759.6	30.00	762.0	75.8	24.3	77	Calm					0			0	0	Blue sky	
Sibsagar	29.63	752.6	29.97	761.3	69.7	20.9	91	ESE	1.4	0.6			10	WSW	WSW	0.07	1.8	Overcast	
Rangoon																			
Jubbulpore	28.60	726.4	29.98	761.4	77.0	25.0	63	SE	2.2	1.0			0			0	0	Blue sky	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	22.02	559.2	29.97	761.2	17.6	— 8.0	85	NNE	.....	.....	2	.....	6	NW	.....	0	0	.....	Ab. Dem. Mongini.
Stelvio	21.99	558.5	29.96	761.0	12.2	—11.0	.....	NNE	.....	.....	1	.....	3	SSE	.....	0.150	3.8	.....	Signora Ernesta Manfredi.
Udine	29.49	749.0	29.91	759.6	50.7	10.4	20	W	1.8	0.6	.....	.....	1	.....	.....	0.276	7.0	.....	Prof. Giovanni Clodig.
Padua	29.82	757.3	29.93	760.1	50.9	10.5	27	NW	11.2	5.0	.....	.....	6	NNW	.....	0	0	.....	Prof. Dott. Lorenzoni.
Vicenza	29.78	756.6	29.95	760.6	50.9	10.5	21	NW	6.9	3.1	.....	.....	3	E	.....	0	0	.....	Conte Alm. Da Schio.
Verona	29.68	753.6	29.91	759.6	51.8	11.0	83	NNW	0	0	.....	.....	3	.....	.....	0.098	2.5	.....	Dott. B. Bertoncelli.
Bergamo	28.64	727.5	29.98	761.6	48.2	9.0	36	SW	.....	.....	2	.....	4	.....	.....	0	0	.....	Prof. Trionfini Carlo.
Domodossola	28.95	735.4	30.00	762.0	50.9	10.5	50	N	.....	.....	4	.....	2	.....	.....	0	0	.....	Prof. Giuseppe Calza.
Milan	29.48	748.7	30.01	762.2	52.5	11.4	.....	NNE	.....	.....	4	.....	5	WNW	.....	0	0	.....	Ab. Gio. Capelli.
Pavia	29.64	752.8	29.99	761.8	51.4	10.8	17	N	.....	.....	6	.....	3	.....	.....	0	0	.....	Prof. Gio. Cantoni.
Moncalieri	29.10	739.2	30.02	762.6	48.2	9.0	35	SSE	6.3	2.8	.....	.....	4	NW	.....	0	0	.....	Prof. P. F. Denza.
Mondovi	28.06	712.8	30.00	761.9	44.2	6.8	25	E	.....	.....	4	.....	9	NNW	.....	0	0	.....	Prof. D. C. Bruno.
Porto Maurizio	29.82	757.3	30.04	763.0	53.4	11.9	25	ENE	.....	.....	2	.....	10	NNW	.....	0	0	.....	Prof. L. Vassallo.
Genoa	29.83	757.6	30.00	761.9	54.5	12.5	16	N	4.9	2.2	.....	.....	6	NW	.....	0	0	.....	Prof. G. M. Garibaldi.
Piacenza	29.74	755.4	30.00	761.9	51.6	10.9	18	NW	16.6	8.3	.....	.....	3	NW	.....	0	0	.....	Dott. G Manzi.
Parma	29.68	753.8	30.00	762.1	51.1	10.6	39	WNW	.....	.....	6	.....	4	.....	.....	0	0	.....	Prof. P. Pigorini.
Florence	29.71	754.5	29.97	761.1	54.5	12.5	23	N	.....	.....	4	.....	5	.....	.....	0.059	1.5	.....	Cav. F Menceci.
Leghorn	29.89	759.3	29.98	761.5	56.3	13.5	22	NE	3.8	1.7	.....	.....	7	.....	.....	0	0	.....	Prof. P. Monte.
Siena	28.74	730.0	29.96	761.0	50.0	10.0	20	NNW	11.2	5.0	.....	.....	7	N	.....	0	0	.....	Prof. L. Toscani.
Urbino	28.20	716.5	29.86	758.4	46.9	8.3	49	W	.....	.....	2	.....	6	.....	.....	0.157	4.0	.....	Prof. P. Serpieri.
Pesaro	29.91	759.6	29.96	760.9	51.6	10.9	42	N	20.3	13.1	.....	.....	8	N	.....	0	0	.....	Prof. Luigi Guidi.
Ancona	29.81	757.1	29.91	759.8	51.8	11.0	57	NW	.....	.....	6	.....	2	NW	.....	0.063	1.6	.....	Prof. F. DeBosis.
Grosseto	29.83	758.4	29.97	761.3	56.8	13.5	25	NNE	.....	.....	2	.....	9	NW	.....	0	0	.....	Avv. P. Ponticelli.
Rome	29.76	755.8	29.93	760.3	55.4	13.0	16	S	18.1	8.1	.....	.....	0	.....	.....	0	0	.....	Prof. P. A Secchi.
Naples, O. U	29.68	753.8	29.88	758.9	58.6	14.8	37	N	.....	.....	4	.....	3	NNE	.....	0.449	11.4	.....	Prof. L. Palmieri.
Lecce	.....	.....	.....	.....	56.3	13.5	66	WNW	11.9	5.3	.....	.....	9	.....	.....	0.236	6.0	.....	Prof. C. De Giorgi.
Cosenza	.....	.....	.....	.....	55.4	13.0	70	SE	8.7	3.9	.....	.....	8	.....	.....	0.787	20.0	.....	Prof. F. D. Conti.
Cagliari	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. A. Pacinotti.
Riposto, (Sicily)	.....	.....	.....	.....	59.0	15.0	61	SSE	.....	.....	2	.....	5	.....	.....	0	0	.....	Prof. F. Caflero.
Palermo	29.64	752.8	29.89	759.3	57.4	14.1	41	WNW	19.2	8.6	.....	.....	8	W	.....	0.067	1.7	.....	Prof. G. Cacciatore.
Caltanissetta	27.89	708.5	29.85	758.1	56.2	10.1	50	WNW	.....	.....	8	.....	10	E	.....	0.059	1.5	.....	Prof. A. Pagani.
Syracuse	29.71	754.6	29.78	756.5	59.7	15.4	40	WNW	.....	.....	6	.....	5	NW	.....	0.039	1.0	.....	Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.35	745.5	29.91	759.6	55.2	12.9	41	ESE	6.9	3.1	.....	.....	5	.....	.....	0	0	.....	Prof. F. Brioschi.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,548.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Siena, 348.5 m., or 1,143.3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Tokei (Yeddo)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	The Observatory.
Tokei (Yeddo) University	29.86	758.4	29.96	761.1	49.2	9.6	89	WNW	2	0.9	.....	.....	6ks	.....	.....	0.32	8.1	Fair	Prof P. V. Veeder.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Señor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Aguascalientes	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	I. N. Marin, M. D.
Córdoba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	C. Peña, M. D.
Cuernavaca	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	L. Castillo, A. E.
Guadalajara	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. L. Perez.
Guanajuato	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. V. Fernandez.
Leon	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. M. Leal.
Mexico	29.02	584.8	30.10	764.4	58.6	12.0	83	Calm	0	0	.....	0	Haze	.....	NW	0.07	1.7	Hazy	Central Observatory.
Orizaba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	N. N.
Orizaba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	I. Orozco, M. D.
Pabellon, (Aguascalts)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. V. de Leon, M. E.
Puebla	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. B. Gonzalez.
Toluca	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. C. Velazquez.
Tlacotalpam	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. F. R. Bayly.
San Luis Potosi	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	G. Barroeta, M. D.
Vera-Cruz	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. J. Rossell.
Zacatecas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. A. Bonilla, M. E.
Puebla, (Catholic Institute)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	P. Spina. [M. M. D. D.
Morelia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Tena, F. L. Páramo.

NOTE.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,293 m., or 7,522.9 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosí, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

Furnished by the cooperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	30.00	761.9	30.00	761.9	43.5	6.4	.....	SW	.....	.....	4	.....	.....	.....	.....	0.020	0.5	.....	
Groningen	29.86	758.5	29.92	759.9	42.4	5.8	.....	WNW	.....	.....	2	.....	.....	.....	.....	0.134	3.4	.....	
Helder	29.90	759.4	29.90	759.4	45.5	7.5	.....	WSW	.....	.....	2	.....	.....	.....	.....	0.008	0.2	.....	
Hellevoetsluis	.....	.....	29.97	761.3	44.6	7.0	85	SW	.....	.....	4	.....	.....	.....	.....	.....	.....	.....	
Utrecht	29.93	760.1	29.97	761.3	41.9	5.5	82	SW	.....	.....	2	.....	5	.....	.....	0.091	2.3	Cloudy	H. v d Brink.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	29.69	754.1	29.74	755.5	31.6	— 0.2	81	Calm	0	0	.....	.....	0	.....	.....	0	0	.....	
Brönö	29.72	755.0	29.76	756.0	33.4	0.8	73	E	4	2	.....	.....	10	.....	.....	0	0	.....	
Christiania	29.64	752.8	29.79	756.7	30.4	— 0.9	94	SSW	0	0	.....	.....	7	.....	.....	0	0	.....	
Tromsö	29.51	749.6	29.56	750.7	34.2	1.2	72	SW	11	5	.....	.....	10	.....	.....	0	0	.....	

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	29.52	749.9	29.71	754.7	66.6	19.2	88	SSW	9.4	4.2	.....	.....	7	.....	.....	0	0	.....	Dr. J. A. Sampaio.
Campo Major	29.21	742.0	30.25	768.4	54.5	12.5	61	E	2.5	1.1	.....	.....	8	.....	.....	0	0	.....	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.08	764.0	30.17	766.2	73.0	22.8	68	SW	10.5	4.7	.....	.....	0	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.84	757.9	30.20	767.1	55.8	13.2	83	NNE	3.8	1.7	.....	.....	10	WSW	.....	0	0	.....	The Staff.
Ponta Delgada, (Azores)	29.73	755.2	29.80	757.0	68.4	20.2	83	SSW	12.5	5.6	.....	.....	4	.....	.....	0.173	4.4	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 9 h. 6 m., p. m.

Naval Series. Vessels.	Sea or swell. Height scale 0–9	Sea or swell. Direction from—	
S. S. India.	.....	.....	A. D. Pedroso, Com'd't. Lt. S. A. P. de Mirando
.....	.....	.....	.....
.....	.....	.....	.....

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.11	739.5	29.54	750.4	38.8	3.8	80	WSW	22	10	.....	.....	10	.....	.....	.....	.....	.....	Astronomical Obs.
Wilna	29.10	739.2	29.53	750.0	41.4	5.2	89	SSE	2	1	.....	.....	10	.....	.....	.....	.....	Heavy clouds	Astronomical Obs.
Dorpat	29.43	747.4	29.67	753.7	36.7	2.6	91	SE	7	3	.....	.....	10	.....	.....	.....	.....	.....	Prof. Dr. Weihrauch.
St. Petersburg	29.77	756.1	29.78	756.5	35.6	2.0	89	SSE	11	5	.....	.....	10	.....	.....	.....	.....	.....	Central Physical Obs.
Kuopio	29.41	746.9	29.74	755.3	33.3	0.7	96	SW	7	3	.....	.....	10	.....	.....	Blank	Blank	.....	Ch. Forsten.
Zieff	29.04	737.7	29.69	754.1	37.6	3.1	91	SE	13	6	.....	.....	7	.....	.....	.....	.....	.....	Physical Cabinet.
Nikolaiev	29.68	753.9	29.75	755.7	46.0	7.8	86	ESE	9	4	.....	.....	10	.....	.....	.....	.....	.....	Kurdakof.
Kertch	29.85	758.3	29.87	758.8	51.4	10.8	100	E	7	3	.....	.....	9	.....	.....	.....	.....	.....	Lagorio.
Moscow	29.50	749.3	30.08	763.9	34.2	1.2	98	S	7	3	.....	.....	10	.....	.....	.....	.....	Light rain	Meteorological Obs.
Lugan	29.69	754.0	29.89	759.3	42.4	5.8	90	ESE	13	6	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Archangel	29.80	757.0	29.82	757.5	37.9	3.3	95	SSW	13	6	.....	.....	10	.....	.....	.....	.....	.....	Ogorodnikof.
Tiflis	28.55	725.2	29.97	761.3	53.2	11.8	68	E	13	6	.....	.....	3	.....	.....	.....	.....	.....	Physical Observatory.
Astrakhan	30.23	767.8	30.15	765.7	34.5	1.4	74	E	11	5	.....	.....	1	.....	.....	.....	.....	.....	Sebastianof.
Kasan	29.95	760.8	30.24	768.1	25.3	— 3.7	78	S	7	3	.....	.....	10	.....	.....	.....	.....	Light clouds	Physical Cabinet.
Orenburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Tschernischef.
Ekaterinburg	29.32	744.8	30.32	770.1	30.2	— 1.0	45	W	9	4	.....	.....	2	.....	.....	.....	.....	.....	Meteorological Obs.
Nukuss	29.84	757.8	30.08	764.0	33.4	0.8	66	NNE	9	4	.....	.....	8	.....	.....	.....	.....	.....	
Kasaly	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Bobrof.
Tashkend	28.49	723.7	30.28	769.1	35.4	1.9	80	Calm	0	0	.....	.....	3	.....	.....	.....	.....	.....	Michelson.
Barnaul	29.99	761.8	30.58	776.7	5.9	—14.5	91	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Meteorological Obs.
Yeniseisk	29.89	759.3	30.24	768.0	24.8	— 4.0	99	SE	7	3	.....	.....	10	.....	.....	.....	.....	Snowing	Marks.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Usolzef.
Oorga	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Mossin.
Peking, (China)	30.18	766.6	30.32	770.2	28.4	— 2.0	72	Calm	0	0	.....	.....	3	.....	.....	.....	.....	.....	Physical Observatory.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nikolaievsk, on the Amoor	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Ar.tonio Rave, Director.
Bilbao, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Manuel de Naveran.
Burgos, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Domingo Martin y Perez.
Madrid, Royal Observatory	27.97	710.4	30.26	768.7	46.4	8.0	65	S	1.5	0.67	.....	0	8	.....	.....	0	0	Cloudy	The Staff.
Murcia, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Olayo Diaz, Director.
Santiago, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. Gil Villanueva, Dir.
Sub-Series.																			
Havána, Cuba, W. I.	29.88	759.0	29.95	760.7	70.1	21.2	88	Calm	0	0	.....	.....	10n	.....	.....	0.035	0.9	Very cloudy	Benito Vines, S. J.
San Fernando, Naval Obs'y.	30.14	765.5	30.24	768.0	68.9	20.5	57	E	9.4	4.2	.....	1	3	NW	ESE	0	0	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W.I.	.....	.....	29.85	758.1	75.9	24.4	94	SW	0	0	.....	2cs	0	.....	.....	0	0	Clear	Leonardo de Tejeda, Chief of Engineers.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

1877—November 26.

Furnished by the cöoperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.67	753.7	29.71	754.7	21.6	— 5.8		N			2		5			0.157	4.0		
Umea	29.72	754.8	29.77	756.1	30.2	— 1.0	92	NW			2		0			0	0		
Hernosand	29.75	755.6	29.80	756.9	24.1	— 4.4	91	Calm			0		7			0	0		
Stockholm	29.43	747.5	29.61	752.0	37.0	2.8	93	NNE			4		10			0.020	0.5		
Wisby	29.44	747.8	29.50	749.3	38.5	3.6	90	ESE			6		10			0.008	0.2	Raining	
Sub-Series.																			
Upsala	29.60	751.9	29.68	753.8	34.2	1.2	89	N	11.0	4.9			10			0.113	2.86		Dr. Hildebrandsson.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the cooperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.72	729.4	30.19	766.8	39.2	4.0	59	SW			1		1			0.122	3.1	Clear	The Observatory.
Zurich	28.52	724.3	30.21	767.3	38.5	3.6	76	W			2		3			0.079	2.0	Bright	The Observatory.

Note.—For Geneva the corresponding departures from the normal values are: Barometer, +2.7 mm; Thermometer, —1.0 cent.; Relative Humidity, —19 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople			29.62	752.3	60.3	15.7	58	SE	11	5.0			9		WSW	0	0		The Observatory.
Fao, (Persian Gulf)																			
Salonica					54.5	12.5		N			6		0			Blank	Blank		B. Stéfanidès.
Valona			29.64	752.8	46.9	8.3		NE			3		2			1.02	26.	Slightly cl'dy	A. Bertrand.
Varna																			Imperial Observatory.
Sub-Series.																			
Beirut,(Syria,) Lee Obs'y	29.91	759.7	30.03	762.7	69.6	20.9	62	SW			2		2c;ks		SW	0	0	D. clouds	Prof. C. V. A. Van Dyck

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the cooperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	30.30	769.6	30.37	771.4	32.9	0.5	96	Calm	0	0		10							Hon. J. Ferguson.
Brockville, Ontario	29.55	750.6	29.86	758.4	42	5.6		NE	3	1.3		5c	5s	Calm	SW	0.16	4.1	Cloudy	W. R. Rigg.
*Chatham, N. B			30.37	771.4	32	0.0	96	SE	4	1.8			10s		Calm	0	0	Cloudy	G. A. Blair.
Charlottetown, P. E. Island			30.42	772.7	34	1.1	87	SE	8	3.6			10s		Calm	0	0	Cloudy	H. J. Cundall, C. E.
Cornwall, Ontario	29.68	753.9	29.87	758.7	41.8	5.4	89	E			2		10s			0.036	0.91	Cloudy	James Smith, M. A.
Dalhousie, N. B	30.37	771.4	30.40	772.1	31.5	— 0.3	89	E			1					0	0	Gloomy	H. A. Johnson.
Esquimault, B. C	30.41	772.4	30.46	773.7	38.1	3.4	100	Calm				2cs	0			0	0	Clear	W. H. Bevis.
*Father Point, Quebec			30.28	769.1	33	0.6	85	E	8	3.6			10n		SW	Inap.	Inap.	Threatening	J. McWilliams.
Fredericton, N. B	30.30	769.6	30.36	771.1	33.7	0.9	93	NE	1.0	0.4			10n			0.03	0.8	Light rain	Prof. Harrison.
*Fort Garry, Manitoba	29.13	739.9	29.99	761.7	26	— 3.3	98	E	6	2.7			10n		Calm	0	0	Cloudy	James Stewart.
Goderich, Ontario																			H. J. Strang, M. A.
Granton, Ontario	28.43	722.1	29.52	749.8	44	6.7	100	E			1		10n			0	0	Cloudy	James Grant.
*Halifax, N. S	30.25	768.3	30.30	771.9	39	3.9	91	SE	12	5.4			10n		SE	0	0	Cloudy	F. Allison, M. A.
Hamilton, Ontario	29.25	742.9	29.62	752.3	45.7	7.6	90	E			1	10cs		E		0	0	Cloudy	Geo. Dickson, M. A
Heart's Content, N. F	30.35	770.9	30.38	771.6	25	— 3.9	87	SE			1	0	0			0	0	Fine	E. Weedon.
*Kingston, Ontario	29.47	748.5	29.81	757.2	47	8.3	83	SE	2	0.9			10ks		Calm	0.36	9.1	Cloudy	S. Woods, M. A.
Little Glace Bay, N. S	30.45	773.4	30.49	774.4	30.0	— 1.1	96	N	2	0.9		7k		N		0	0	Fair	C. H. Rigby.
*Montreal, Quebec	29.75	755.6	29.95	760.7	41	5.0	91	NE	8	3.6			10s			0.13	3.3	Cloudy	C. H. McLeod, C. E.
*Parry Sound, Ontario	28.98	736.1	29.07	753.6	44	6.7	92	E	16	7.2		5k	5ks	E	E	0.02	0.5	Cloudy	Rev. R. Mosley.
Peterboro, Ontario	28.97	735.8	29.72	754.9	45.7	7.6	91	E			1		10n			0.05	1.3	Raining	J. F. Jeffers, B. A.
Port Dover, Ontario	28.87	733.3	29.55	750.6	50	10.0	86	E	10	4.5		10ck	0	SE		Inap.	Inap.	Fair	H. Morgan.
Port Hastings, N. S	30.44	773.2	30.49	774.4	41.4	5.2		S	5	2.2						0	0	Fine	Peter Grant.
Port Stanley, Ontario	28.88	733.5	29.52	749.8	50	10.0	84	E	18	8.0			8n		SE	0.19	4.8	Cloudy	M. Payne.
*Quebec, Quebec	29.82	757.4	30.15	765.8	35	1.7	90	E	20	8.9			10n		NE	0.19	4.8	Cloudy	Capt. Ashe, R. N
*Rockliffe, Ontario	29.36	745.7	29.82	757.4	40	4.4	98	SE	8	3.6			10s		SE	0.07	1.8	Light rain	W. H. McIntyre.
St. John, N. B	30.17	766.3	30.34	770.6	37	2.8	90	NE	5	2.2			10ks			0	0	Cloudy	G. Murdock, C. E.
*Saugeen, Ontario	28.87	733.3	29.56	750.8	46	7.8	92	E	7	3.1			10ks		E	0	0	Cloudy	K. Stewart.
Stayner, Ontario	28.87	733.3	29.65	753.1	45	7.2	92	E	3	1.3			10n		E	0.30	7.6	Threatening	R. J. Cole.
Stratford, Ontario	28.29	718.6	29.56	750.8	44.2	6.8	98	SE	12.0	5.4			10s			0	0	Cloudy	C. J. MacGregor, M. A.
*Sydney, C. B	30.48	774.2	30.51	774.9	30	— 1.1	94	SW	6	2.7			10n			0	0	Cloudy	T. C. Hill.
*Toronto, Ontario	29.24	742.7	29.62	752.3	45	7.2	96	NE	8	3.6			10ks		E	0.05	1.3	Cloudy	Magnetic Observatory.
Windsor, N. S	30.30	769.6	30.40	772.1	37.5	3.1	77	SE	12	5.4		0	0			0	0	Fair	Prof. John E. Oram.
Woodstock, Ontario																			J. Montgomery.
Sub-Series.																			
St. Johns, Newfoundland					34.0	1.1	71	S				0	0			0	0	Fair	John Delany.

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

UNITED STATES SERIES.

By authority of the SECRETARY OF WAR.

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	BAROMETER. Corrected for instrum'tal error and temperature. Inches.	BAROMETER. Corrected for instrum'tal error and temperature. Millimeters.	BAROMETER. Reduced to sea-level. Inches.	BAROMETER. Reduced to sea-level. Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Upper. From—	CLOUDS. Direction. Lower. From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	WEATHER.	OBSERVER.
Albany, New York	29.66	753.4	29.88	758.9	45	7.2	84	Calm	0.	0	.....	.....	10ks	.....	Calm	0.78	19.8	Cloudy	
*Alpena, Michigan	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.06	1.5	.....	
Atlantic City, New Jersey	29.76	755.9	29.78	756.4	52	11.1	100	E	16	7.2	.....	.....	Fog	.....	.....	0	0	Foggy	
Augusta, Georgia	29.57	751.1	29.75	755.6	48	8.9	78	SW	5	2.2	.....	0	2s	.....	SW	0.30	7.6	Clear	
Baltimore, Maryland	29.64	752.8	29.69	754.1	52	11.1	100	E	8	3.6	.....	.....	Fog	.....	Calm	0.01	0.3	Threatening	
Barnegat, New Jersey	29.76	755.9	29.78	756.4	52	11.1	100	E	16	7.2	.....	.....	Fog	.....	E	0.02	0.5	Foggy	
Bismarck, Dakota	27.95	709.9	29.64	752.8	32	0.0	100	NE	6	2.7	.....	.....	10s	.....	NE	Inap.	Inap.	Threatening	
Boise City, Idaho	27.46	697.5	30.22	767.6	31	— 0.6	79	N	1	0.4	.....	0	0	.....	.....	0.05	1.3	Clear	
Boston, Massachusetts	29.79	756.7	29.95	760.7	49	9.4	100	E	5	2.2	.....	.....	10n;fg	.....	.....	2.93	74.4	Light rain	
Brackettville, Texas	28.62	726.9	29.68	753.9	37	2.8	37	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Breckenridge, Minnesota	28.77	730.7	29.79	756.7	29	— 1.7	89	S	8	3.6	.....	.....	10s	.....	Calm	0	0	Cloudy	
Brownsville, Texas	29.80	756.9	29.86	758.4	56	13.3	87	S	6	2.7	.....	2c	0	Calm	.....	0	0	Clear	
Buffalo, New York	28.87	733.3	29.55	750.6	49	9.4	85	NE	6	2.7	.....	.....	10s	.....	S	0.02	0.5	Cloudy	
Burlington, Vermont	29.68	753.9	29.94	760.5	48	8.9	92	S	2	0.9	.....	.....	10s	.....	Calm	0.32	8.1	Cloudy	
Cairo, Illinois	29.20	741.7	29.59	751.6	43	6.1	92	W	15	6.7	.....	.....	10n	.....	W	0.32	8.1	Light rain	
Camp Grant, Arizona	25.13	638.3	29.93	760.2	44	6.7	9	NE	.....	.....	1	1c	0	Calm	.....	0	0	Clear	
Camp Verde, Arizona	26.76	679.7	30.25	768.3	31	— 0.6	58	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Campo, California	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Cape Hatteras, N. Carolina	29.70	754.4	29.70	754.4	62	16.7	83	SW	12	5.4	.....	.....	10n	.....	SW	0.02	0.5	Heavy rain	
Cape Henry, Virginia	29.65	753.1	29.68	753.9	60	15.6	94	S	10	4.5	.....	.....	10n	.....	Calm	Inap.	Inap.	Light rain	
Cape Lookout, N. Carolina	29.72	754.9	29.74	755.4	63	17.2	83	SW	23	10.3	.....	.....	10s	.....	W	1.07	27.2	Clearing	
Cape May, New Jersey	29.71	754.6	29.74	755.4	56	13.3	87	E	14	6.3	.....	.....	10s	.....	SE	0	0	Cloudy	
Charleston, South Carolina	29.43	747.5	29.79	756.7	55	12.8	80	SW	8	3.6	.....	0	0	.....	.....	0.35	8.9	Clear	
Cheyenne, Wyoming	23.87	606.3	29.81	757.2	20	— 6.7	85	NW	16	7.2	.....	5ck	2s	NW	NW	0.03	0.8	Fair	
Chicago, Illinois	28.66	728.0	29.32	744.7	48	8.9	100	E	4	1.8	.....	.....	Fog	.....	Calm	0.43	10.9	Foggy	
Cincinnati, Ohio	28.77	730.7	29.39	746.5	48	8.9	85	S	8	3.6	.....	.....	10ks;fg	.....	S	0.53	13.5	Threatening	
Cleveland, Ohio	28.75	730.2	29.44	747.8	51	10.6	65	SE	9	4.0	.....	.....	10s	.....	SE	0	0	Cloudy	
Concho, Texas	27.88	708.1	29.57	751.1	42	5.6	11	W	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Corsicana, Texas	29.22	742.2	29.70	754.4	38	3.3	71	S	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Davenport, Iowa	28.87	733.3	29.50	749.3	37	2.8	90	N	12	5.4	.....	.....	10n	.....	Calm	0.16	4.1	Light rain	
Denison, Texas	28.86	733.0	29.66	753.4	45	7.2	61	SW	10	4.5	.....	5k	0	SW	.....	0	0	Fair	
Denver, Colorado	24.66	626.4	29.88	758.9	27	— 2.8	77	W	2	0.9	.....	.....	8s	.....	Calm	0.50	12.7	Cloudy	
Detroit, Michigan	28.75	730.2	29.40	746.7	47	8.3	92	E	6	2.7	.....	.....	10s; fg	.....	Calm	0.03	0.8	Threatening	
Dodge City, Kansas	27.21	691.1	29.53	750.0	35	1.7	70	NW	16	7.2	.....	0	5s	.....	NW	0	0	Fair	
Dubuque, Iowa	28.82	732.0	29.52	749.8	36	2.2	90	N	6	2.7	.....	.....	10n	.....	Calm	0.23	5.8	Light rain	
Duluth, Minnesota	29.04	737.6	29.72	754.9	37	2.8	80	N	8	3.6	.....	.....	10s	.....	N	0	0	Cloudy	
Eagle Pass, Texas	28.98	736.1	29.74	755.4	38	3.3	54	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Eastport, Maine	30.20	767.1	30.26	768.6	42	5.6	83	E	12	5.4	.....	.....	10s	.....	E	0	0	Cloudy	
Erie, Pennsylvania	28.77	730.7	29.46	748.3	54	12.2	73	S	12	5.4	.....	10cs;c	0	SE	.....	0	0	Cloudy	
Escanaba, Michigan	28.89	733.8	29.54	750.3	39	3.9	91	N	20	8.9	.....	.....	10n	.....	N	0.16	4.1	Light rain	
Florence, Arizona	28.40	721.3	30.00	762.0	40	4.4	32	N	.....	.....	.....	5c	0	N	.....	0	0	Fair	
Fort Bayard, New Mexico	23.96	608.6	29.96	761.0	34	1.1	51	NW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Fort Craig, New Mexico	25.43	645.9	.....	.....	30	— 1.1	59	NW	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Fort Gibson, Indian Ter	29.11	739.4	29.65	753.1	38	3.3	90	S	5	2.2	.....	.....	10s	.....	NW	Inap.	Inap.	Cloudy	
Fort Griffin, Texas	28.48	723.4	29.73	755.1	39	3.9	72	NW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	28.49	723.6	29.60	751.8	43	6.1	75	N	15	6.7	.....	0	0	.....	.....	0	0	Clear	
Galveston, Texas	29.76	755.9	29.80	756.9	55	12.8	73	SW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Grand Haven, Michigan	28.75	730.2	29.38	746.2	49	9.4	85	E	7	3.1	.....	.....	10n	.....	.....	0.68	17.3	Light rain	
Indianapolis, Indiana	28.58	725.9	29.33	745.0	45	7.2	84	S	3	1.3	.....	.....	10s	.....	S	0.14	3.6	Threatening	
Indianola, Texas	29.77	756.1	29.80	756.9	53	11.7	86	S	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Jacksboro, Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Jacksonville, Florida	29.84	757.9	29.86	758.4	53	11.7	66	W	8	3.6	.....	0	0	.....	.....	Inap.	Inap.	Clear	
Keokuk, Iowa	28.90	734.0	29.51	749.5	38	3.3	90	N	10	4.5	.....	.....	10n	.....	Calm	0.61	15.5	Light rain	
Key West, Florida	29.89	759.2	29.92	760.0	74.5	23.6	76	SW	8	3.6	.....	.....	10s	.....	W	0	0	Cloudy	
Kityhawk, North Carolina	29.73	755.1	29.75	755.6	60	15.6	100	S	14	6.3	.....	.....	10n	.....	S	0.29	7.4	Heavy rain	
Knoxville, Tennessee	28.60	726.4	29.60	751.8	43	6.1	75	SW	12	5.4	.....	.....	10ks	.....	SW	0.55	14.0	Cloudy	
La Crosse, Wisconsin	28.83	732.3	29.56	750.8	36	2.2	100	N	8	3.6	.....	.....	10n	.....	N	0.43	10.9	Heavy rain	
La Mesilla, New Mexico	26.10	662.9	30.25	768.3	25	— 3.9	62	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Laredo, Texas	.....	.....	.....	.....	40	4.4	65	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Leavenworth, Kansas	28.84	732.5	29.69	754.1	34	1.1	90	NW	6	2.7	.....	.....	10s	.....	Calm	0	0	Cloudy	
Los Angeles, California	29.56	750.8	29.89	759.2	55	12.8	30	NE	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Louisville, Kentucky	28.85	732.8	29.40	746.7	47	8.3	85	S	11	4.9	.....	.....	10s	.....	SW	0.36	9.1	Cloudy	
Lynchburg, Virginia	28.88	733.5	29.54	750.3	55	12.8	81	Calm	0	0	.....	.....	10s	.....	NW	Inap.	Inap.	Cloudy	
Maricopa Wells, Arizona	.....	.....	.....	.....	30	— 1.1	47	N	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Marquette, Michigan	28.93	734.6	29.62	752.3	40	4.4	73	N	4	1.8	.....	.....	10n	.....	Calm	0.15	3.8	Light rain	
Mason, Texas	28.09	713.5	29.84	757.9	48	8.9	62	W	16	7.2	.....	0	0	.....	.....	0	0	Clear	
Memphis, Tennessee	29.37	746.0	29.69	754.1	44	6.7	83	SW	6	2.7	.....	.....	10s	.....	SW	0.07	1.8	Cloudy	
Milwaukee, Wisconsin	28.73	729.7	29.49	746.7	43	6.1	100	N	17	7.6	.....	.....	10n	.....	.....	0.61	15.5	Light rain	
Mobile, Alabama	29.80	756.9	29.85	758.2	44	6.7	84	W	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Montgomery, Alabama	29.58	751.3	29.82	757.4	46.5	8.1	69	SW	7	3.1	.....	0	Haze	.....	Calm	0.30	7.6	Clear	
Morgantown, West Virginia	28.44	722.4	29.45	748.0	54	12.2	61	SE	15	6.7	.....	8cs	2s	SW	SE	0.02	0.5	Threatening	
Mt. Washington, N. H.	23.69	601.7	30.05	763.3	33	0.6	100	S	78	34.9	.....	.....	10n	.....	S	2.15	54.6	Sleeting	
Nashville, Tennessee	29.06	738.1	29.59	751.6	44	6.7	84	SW	8	3.6	.....	.....	10s	.....	S	0.41	10.4	Cloudy	
New Haven, Connecticut	29.77	756.1	29.89	759.2	47	8.3	100	NE	12	5.4	.....	.....	Fog	.....	.....	0.99	25.1	Foggy	
New London, Connecticut	29.86	758.4	29.91	759.7	52	11.1	93	N	4	1.8	.....	.....	Fog	.....	Calm	0.93	23.6	Dense fog	
New Orleans, Louisiana	29.80	756.9	29.86	758.4	49	9.4	71	SW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Newport, Rhode Island	29.85	758.2	29.90	759.4	52	11.1	100	N	4	1.8	.....	.....	10n	.....	.....	1.67	42.4	Light rain	
New York, New York	29.64	752.8	29.81	757.2	48	8.9	100	NE	20	8.9	.....	.....	Fog	.....	Calm	0.29	7.4	Foggy	
Norfolk, Virginia	29.57	751.1	29.63	752.6	57	13.9	100	SE	16	7.2	.....	.....	10n	.....	SE	0.93	23.6	Heavy rain	
North Platte, Nebraska	26.88	682.7	29.54	750.3	25	— 3.9	88	W	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Olympia, Washington Ter.	30.39	771.9	29.43	747.5	37	2.8	90	SW	2	0.9	.....	.....	Fog	.....	Calm	0	0	Foggy	
Omaha, Nebraska	28.59	726.2	29.69	754.1	32	0.0	89	N	4	1.8	.....	.....	10s	.....	Calm	0	0	Cloudy	
Oswego, New York	29.44	747.8	29.76	755.9	51	10.6	72	SE	11	4.9	.....	.....	10s	.....	S	0.06	1.5	Cloudy	
Pembina, Dakota	29.10	739.1	29.96	761.0	27	— 2.8	88	N	6	2.7	.....	.....	10s	.....	Calm	Inap.	Inap.	Cloudy	
Philadelphia, Pennsylvania	29.72	754.9	29.77	756.1	49	9.4	100	NE	16	7.2	.....	.....	10s	.....	E	0.01	0.3	Cloudy	
Phœnix, Arizona	.....	.....	.....	.....	36	2.2	45	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Pike's Peak, Colorado	17.42	442.5	29.63	752.6	—10	—23.3	54	N	24	10.7	.....	5k	0	N	.....	0.05	1.3	Fair	
Pioche, Nevada	24.10	612.1	29.88	758.9	36	2.2	38	N	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Pittsburg, Pennsylvania	28.67	728.2	29.44	747.8	54	12.2	73	SE	7	3.1	.....	.....	10s	.....	S	0	0	Cloudy	
Port Huron, Michigan	28.80	731.5	29.44	747.8	48	8.8	93	E	4	1.8	.....	.....	10ks	.....	E	0.02	0.5	Cloudy	
Portland, Maine	29.99	761.7	30.04	763.0	50	10.0	93	SE	5	3.6	.....	.....	10n	.....	Calm	2.66	67.6	Light rain	
Portland, Oregon	30.37	771.4	30.47	773.9	42	5.6	91	N	1	0.4	.....	.....	10s	.....	NW	0.03	0.8	Cloudy	
Prescott, Arizona	24.79	629.6	30.15	765.8	28	— 3.3	63	SW	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Punta Rassa, Florida	29.92	760.0	29.93	760.2	67	19.4	74	Calm	0	0	.....	.....	8n	.....	Calm	0.40	10.2	Cloudy	
Red Bluff, California	29.78	756.4	30.16	765.8	52	11.1	66	N	9	4.0	.....	0	0	.....	.....	0	0	Clear	
Rochester, New York	29.05	737.9	29.65	753.1	50	10.0	86	SE	10	4.5	.....	.....	10s	.....	Calm	0.01	0.3	Cloudy	
Roseburg, Oregon	29.82	757.4	30.42	772.7	44	6.7	100	Calm	0	0	.....	10n	Fog	Calm	Calm	0.15	3.8	Light rain	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Sacramento, California	30.03	762.7	30.12	765.0	45.5	7.5	89	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
St. Louis, Missouri	28.94	735.1	29.50	749.3	40	4.4	91	W	16	7.2	.....	.....	10s	.....	Calm	0.66	16.8	Cloudy	
St. Marks, Florida	29.86	758.4	29.88	758.9	44	6.7	92	NW	1	0.4	.....	0	0	.....	.....	0.08	2.0	Clear	
St. Paul, Minnesota	28.80	731.5	29.68	752.6	34	1.1	79	N	6	2.7	.....	.....	10s	.....	N	0	0	Cloudy	
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salt Lake City, Utah	25.74	653.8	30.07	763.8	38	3.3	54	NW	12	5.4	.....	10k	0	NW	.....	0	0	Cloudy	
San Antonio, Texas	29.06	738.1	29.65	753.1	47	8.3	77	SW	2	0.9	.....	0	0	.....	.....	0	0	Clear	
San Diego, California	29.85	758.2	29.92	760.0	55	12.8	22	NE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Sandusky, Ohio	28.75	730.2	29.40	746.7	50	10.0	93	SE	5	2.2	.....	.....	10s	.....	SE	0.01	0.3	Cloudy	
Sandy Hook, New Jersey	29.79	756.7	29.81	757.2	49	9.4	93	NE	23	10.3	.....	.....	Fog	.....	NE	0.19	4.8	Foggy	
San Francisco, California	30.04	763.0	30.11	764.8	54	12.2	87	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Santa Fé, New Mexico	29.10	686.7	29.64	752.8	30	—1.1	59	N	7	3.1	.....	0	0	.....	.....	0	0	Clear	
Savannah, Georgia	29.72	754.9	29.82	757.4	58	11.7	73	SW	8	3.6	.....	2c	Sm'e	W	.....	0.15	3.8	Clear	
Shreveport, Louisiana	29.57	751.1	29.79	756.7	40	4.4	73	Calm	0	0	.....	5c	0	S	.....	0	0	Fair	
Smithville, North Carolina	29.70	754.4	29.73	755.1	61	16.1	71	SW	30	13.4	.....	0	2ks	.....	SW	0.12	3.0	Fair	
Springfield, Massachusetts	29.71	754.6	29.84	757.9	47	8.3	85	N	4	1.8	.....	.....	10s	.....	N	1.37	34.8	Cloudy	
Stanwix, Arizona	.....	.....	.....	.....	41	5.0	33	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Stockton, Texas	29.79	680.4	29.79	756.7	47	8.3	85	W	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Thatcher's Island, Mass	29.92	760.0	29.97	761.2	50	10.0	100	S	12	5.4	.....	.....	10n	.....	S	2.26	57.4	Light rain	
Toledo, Ohio	28.69	728.7	29.34	745.2	50	10.0	93	E	3	1.3	.....	.....	10s	.....	E	0.25	6.3	Cloudy	
Tucson, Arizona	27.51	698.7	30.06	763.5	37	2.8	37	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Tybee Island, Georgia	29.79	756.7	29.82	757.4	49	9.4	85	SW	6	2.7	.....	1c	0	W	.....	0.15	3.8	Clear	
Umatilla, Oregon	30.16	765.8	.....	.....	29	—1.7	78	SE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Vicksburg, Mississippi	29.56	750.8	29.82	757.4	42	5.6	66	SW	4	1.8	.....	0	0	.....	.....	0.04	1.0	Clear	
Virginia City, Montana	24.30	617.2	29.78	756.4	16	—8.9	83	SE	3	1.3	.....	6	0	.....	.....	0.03	0.8	Clear	
Visalia, California	29.77	756.1	30.16	766.1	42	5.6	91	E	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Washington, D. C.	29.57	751.1	29.68	753.9	52	11.1	100	NE	9	4.0	.....	.....	10n	.....	E	0.11	2.8	Heavy rain	
Wickenburg, Arizona	.....	.....	.....	.....	31	—0.6	38	N	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Wilmington, N. Carolina	29.63	752.6	29.70	754.4	56	13.3	87	SW	11	4.9	.....	0	0	.....	.....	0.07	1.8	Clear	
Winnemucca, Nevada	25.83	656.1	30.19	766.8	28	—2.2	77	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Wood's Holl, Mass	29.85	758.2	29.90	759.4	56	13.3	100	E	20	8.9	.....	.....	10n	.....	.....	2.95	74.9	Light rain	
Yankton, Dakota	28.44	722.4	29.76	755.9	31	—0.6	89	Calm	0	0	.....	.....	Fog	.....	Calm	0	0	Foggy	
Yuma, Arizona	.....	.....	.....	.....	67	13.9	23	W	2	0.9	.....	0	0	.....	.....	0	0	Clear	
SUB-SERIES.																			
York Factory, B. A.	30.16	766.1	30.21	767.3	13.5	—10.3	100	NW	5	2.2	.....	.....	10n	.....	.....	.....	.....	Snowing	J. Fortescue, W. Wood.
Havana, Cuba, W. I.	29.87	758.7	29.89	759.2	73	22.8	76	Calm	0	0	.....	10c	4n	Calm	.....	0.03	0.8	Cloudy	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.04	763.0	30.05	763.3	78	25.6	82	Calm	0	0	.....	8c	2s	SE	.....	0	0	.....	James Gall.
Navassa, W. I.	29.82	757.4	29.90	759.4	80	26.7	.....	NE	5	2.2	.....	.....	.....	.....	.....	0.25	6.3	Cloudy	F. M Everett.
St. Thomas, W. I.	.....	.....	.....	.....	83	28.3	75	NE	3	1.3	.....	2c	2k	E	.....	0	0	.....	G. O. Gellich.
Paramaribo, D. Guiana, S. A.	.....	.....	29.96	761.0	84	28.9	75	NE	.....	.....	3	0	5k	.....	.....	0	0	Fair	C. J. Hering.
Batavia, Dutch Guiana, S. A	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Dr. H. Groot.
Medellin, Colombia, S. A.	25.21	640.3	.....	.....	66.0	18.9	89	Calm	.....	.....	0	.....	10sn	.....	.....	0.09	2.3	Light rain	Thomas Herran.
Honolulu, Oahu, H. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Daniel Smith.
Makawao, Maui, H. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters: Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.8 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,576 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Ploche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.6 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Ploche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

*Observation not simultaneous.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
NavyYard Mare Island, Cal.	30.20	767.1	51	10.6	47	8.3	100	Calm	0	0	.....	.....	0	.....	.....	0	0	.....	.....	Heavy mist..	
Navy Yard, Pensacola, Fla.	29.92	760.0	.....	.....	53	11 7	73	Calm	0	0	.....	.....	0	.....	.....	0	0	.....	.....	Blue sky.....	
NavyYard, Portsmouth, N.H	30.01	762.2	58	14.4	49	9.4	93	ESE	2	0.9	.....	.....	10	.....	.....	2.00+	50.8+	.....	.....	Rain and fog	
Naval Hospital, Yokohama, Japan.....	29.84	757.9	57	13.9	49	9.4	93	Calm	.....	.....	0	.....	0	.....	.....	0.36	9.1	.....	.....	Clear	
Adams. Punta Arenas, Patagonia.	30.20	767.1	52	11.1	52	11.1	86	N	.....	.....	1	.....	9	.....	N	Light	Light	None	.....	D. clouds.....	
Alert, Yokohama, Japan.....	30.00	762.0	56	13.3	56	13.3	81	NNW	.....	.....	1	.....	1	.....	Calm	.....	.....	.....	.....	D. clouds.....	
Alliance, Constantinople, Turkey.	29.74	755.4	73	22.8	64	17.8	58	SSE	.....	.....	2-3	.....	7	.....	S	.....	.....	.....	.....	Pleasant.....	
Ashuelot. Off Woosung River.....	30.40	772.1	60	15.6	49	9.4	85	N	.....	.....	3	.....	10	.....	.....	.....	.....	Smooth	.....	Misty.....	
Canonicus, New Orleans, La.....	29.83	757.7	41	5.0	50	10.0	76	SE	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	Clear	
Colorado, New York, N. Y.....	29.83	757.7	50	10.0	49	9.4	100	E	5	2.2	.....	.....	10	.....	E	1.27	32.3	.....	.....	Dense fog....	
Despatch, Constantinople, Turkey.	29.72	754.9	65	18.3	64	17.8	62	SE	.....	.....	2	.....	4	.....	SW	.....	.....	.....	.....	Cloudy.....	
Essex, Clarence, Fernando Po Id.	29.83	757.7	82	27.8	83	28.3	91	ESE	.....	.....	1	.....	9	.....	.....	.....	.....	Smooth	.....	D. clouds.....	
Franklin, Norfolk, Va.....	29.96	761.0	60	15.6	60	15.6	82	SE	11	4.9	.....	.....	10	.....	SE	0.2	5.	.....	.....	Raining.....	
Guard, N. 39° 16′, W. 23° 30′.....	29.77	756.1	68	20.0	69	20.6	80	S	.....	.....	3	.....	7	.....	S	.....	.....	Long	S;E	D. clouds.....	
Lackawana, San Francisco, Cal.....	30.16	766.1	.....	.....	58	14.4	82	Calm	.....	.....	0	.....	2	.....	.....	.....	.....	.....	.....	D. clouds....	
Marion, Smyrna, Turkey.....	29.72	754.9	66	18.9	63	17.2	83	S	.....	.....	1	.....	7	.....	Calm	Light	Light	Smooth	WNW	D. clouds.....	
Michigan, Erie, Pa.....	29.02	737.1	60	15.6	55	12.8	87	SE	.....	.....	2	.....	5	.....	SE	.....	.....	.....	.....	Fair.....	
Monongahela, Alexandria, Egypt.....	30.11	764.8	71	21.7	71	21.7	90	S&W	.....	.....	2	.....	k	.....	.....	Light	Light	Smooth	.....	D. clouds.....	
New Hampshire, Port Royal, S.C.....	29.95	760.7	.....	.....	55	12.8	68	SW	18	8.0	.....	.....	2	.....	NW	0.02	0.5	.....	.....	D. clouds.....	
Omaha, Callao, Peru.....	30.04	763.0	74	23.3	73.5	23.1	92	Calm	0	0	.....	.....	10	.....	Calm	0	0	Smooth	.....	Cloudy.....	
Onward, Callao, Peru.....	30.02†	762.5†	74	23.3	72	22.2	85	Calm	.....	.....	0	.....	10	.....	.....	.....	.....	Long	W	D. clouds.....	
Ossipee, Norfolk, Va.....	29.69	754.1	68	20.0	61	16.1	88	ESE	.....	.....	4-5	.....	10	.....	S	.....	.....	.....	.....	Raining.....	
Palos, Shanghai, China.....	30.39	771.9	57	13.9	48	8.9	85	NNE	.....	.....	1	.....	10	.....	.....	.....	.....	.....	.....	Overcast.....	
Plymouth, N. 31° 58′, W. 67° 31′.....	30.08	764.0	73	22 8	71	21.7	90	SE	.....	.....	4	.....	10	.....	.....	.....	.....	Smooth	SE	Overcast.....	
Powhatan, N. 35° 59, W. 75° 34′.....	.....	.....	.....	.....	.....	59	15.0	??	ESE	14.4	6.4	.....	.....	9	.....	.....	0.30	7.6	Moderate.	ESE	Overcast.....
Ranger, Shanghai, China.....	30.46	773.7	65	18.3	52	11.1	79	N	.....	.....	1	.....	10	.....	Calm	.....	.....	.....	.....	Cloudy.....	
Rio Bravo, Brownsville, Texas.....	29.86	758.4	.....	.....	51	10.6	93	SSW	.....	.....	1	.....	6	.....	NNW	.....	.....	.....	.....	D. clouds.....	
Santee, Annapolis, Md.....	29.75	755.6	69	20.6	52	11.1	93	ESE	.....	.....	4	.....	10	.....	SE	0.01	0.3	.....	.....	Cloudy.....	
Saratoga, Hampton Roads, Va.....	.....	.....	.....	.....	65	18.3	100	SSE	.....	.....	6	.....	10	.....	S	.....	.....	.....	.....	Stormy.....	
St. Louis, League Island, Pa	29.90	759.4	50	10.0	62	16.7	83	ESE	9	4.0	.....	.....	10	.....	ESE	0	0	.....	.....	Foggy	
Swatara, N. 36° 09,′ W. 75° 26′.....	29.80	756.9	.....	.....	62	16.7	83	SE	.....	.....	6	.....	10	.....	S	.....	.....	Long	SE	Thunder-storm..	
Tennessee, Yokohama, Japan.....	29.98	761.5	67	19.4	52	11.1	86	NNW	9	4.0	.....	.....	.....	.....	.....	0.44	11.2	Smooth	.....	Blue sky.....	
Trenton, Villefranche, France.....	30.08	764.0	.....	.....	60	15.6	24	Calm	0	0	.....	.....	8	.....	W	0	0	Ground	S	D. clouds.....	
Vandalia, Villefranche, France.,...	30.04†	763.0†	59	15.0	59	15.0	33	Calm	.....	.....	0	.....	10	.....	Calm	.....	.....	Long smooth	SW	D. clouds.....	
Wabash, Boston, Mass.....	29.98	761.5	64	17.8	60	15.6	76	SE	6	2.7	.....	.....	10	.....	Calm	2.98	75.7	.....	.....	Raining.....	
Wyoming, Washington, D. C.....	30.19†	766.8†	.....	.....	52	11.1	.....	E	.....	.....	3	.....	10	.....	.....	.....	.....	.....	.....	Raining.....	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. The position given for the Plymouth is that at noon, local time, instead of that at 7:35 a. m., Washington time.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.	Character.	Direction from—		
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—				
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska, Tacoma, W. T.			30.57†	776.5†	40	4.4		ESE			2							Foggy	Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama, N. 8° 22′, W. 83° 34′			29.66	753.4	82	27.8	83	WNW			2		3		W	Light	SW	D. clouds	Capt. Howard.
S. S. City of Peking																			Lt. Z. L. Tanner, U.S.N.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio, N. 32° 30′, E. 132° 10′			30.16	766.1	68	14.4		N			7		3		NW	Long	NNW	D. clouds	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

NOTE.—The originals give the wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. † Aneroid; corrected for elevation, instrumental error not known.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.

S. S. Belgic																			Capt. John Metcalf.
S. S. Gaelic, N. 30° 00′, W. 158° 33′			29.45*	748.0*	68	20.0	??	W			7		lc		W	Very Heavy	W	Overcast	Capt. W. H. Kidley
S. S. Oceanic, N. 45° 12′, W. 169° 0′			29.34	745.2	40	4.4	66	ESE			4		10		NE	High	NE	Raining	Capt. H. Parsell.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. *Aneriod.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig, N. 43° 11′, W. 57° 41′	S70½W	13.0	30.43	772.9	54.0	12.2	36	N			3		clc		NNE	Smooth		D clouds	Capt. K. Undütsch.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio, Baltimore, Md.			29.71	754.6	52.0	11.1	96	NE			2		10					Thunder-storm	Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, nor distinguish between upper and lower clouds.

UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Lo'wr	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second	0—10.	0—10.	0—10.	From—	From—	Character.	Direction From—		
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			
S. S. Indiana, Liverpool			29.83*	757.7*	47	8.3	100	SW			4		2		SE				Captain Shackelford.
S. S. Ohio. N. 50° 23′, W. 36° 58′			29.93	760.2	44	6.7	92	NW			4		10?		NW	Moderate.	NNW	Clear?	Captain Sargent.
S. S. Pennsylvania, N. 42° 05′, W. 55° 25′			30.41†	772.4†	50	10.0	86	NE			4		4		NE	Large	NE	Cloudy	Captain Morrison.
																			Captain Harris.

NOTE.—The originals give the barometer as read off; the wind-force by the scale 0 to 12. *Aneroid; correction for elevation applied, instrumental error not known.
† Corrected for temperature and elevation, instrumental error not known.

RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

S. S. Nederland																			Capt. Randle.
S. S. Switzerland, N. 41° 58′, W. 63°			30.42*	772.7*	54	12.2		ESE	20	8.9			6		SW	Mod'ate	E	D. clouds	Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

*Aneroid; regulated to standard at Antwerp.

ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

S. S. Hibernian																			
S. S. Scandinavian																			Capt. W. Richardson.

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, Kennebunk, Maine			30.05	763.3	49	9.4	100	Calm	0	0			10n		Calm			Drizzling	Capt. James Jorgensen.

NOTE.—The originals for the schooner Addie Fuller give the amount of cloudiness by the scale 0 to 4; the barometer as read off.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing, and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^{d}.) Chief Signal Officer. U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON NOVEMBER 27, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:58 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer, corrected for instrum'tal error and temperature. Inches.	Barometer, corrected for instrum'tal error and temperature. Millimeters.	Barometer, reduced to sea-level. Inches.	Barometer, reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours	.....	.....	30.09	764.3	70.3	21.3	55	Calm	.....	.....	0	.....	1	.....	.....	0	0	Very fair.....	Michel.
Algiers	.....	.....	29.93	760.1	65.5	18.6	82	Calm	.....	.....	0	.....	0	.....	.....	0	0	Clear.	Peter.
La Calle	.....	.....	30.04	762.9	66.2	19.0	70	NW	.....	.....	1	.....	3	.....	.....	0	0	Pretty fair..	Fleury.
Tunis	.....	.....	30.09	764.3	63.0	17.2	52	W	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	Jacques.
Sfax	.....	.....	30.10	764.5	62.6	17.0	.....	W	.....	.....	3	.....	1	.....	.....	0	0	Very fair....	Husson.
Saida	.....	.....	30.15	765.9	67.6	19.8	26	SSE	.....	.....	1	.....	2	.....	.....	0	0	Fair.....	Millot.
Tebessa	.....	.....	29.95	760.6	.....	.....	.....	Calm	.....	.....	0	.....	1	.....	.....	.....	.....	Very fair.....	Bourgeois.
Geriville	.....	.....	30.05	763.2	55.4	13.0	75	W	.....	.....	2	.....	3	.....	.....	0	0	Pretty fair...	Lemaillot.
Laghouat	.....	.....	30.17	766.2	64.4	18.0	61	N	.....	.....	4	.....	0	.....	.....	0	0	Clear.....	Guyot.
Biskra	.....	.....	30.13	765.4	67.8	19.9	23	NW	.....	.....	1	.....	0	.....	.....	0	0	Clear.....	Kuntz.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,380? m.; or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

STATIONS.	Barometer, corrected for instrum'tal error and temperature. Inches.	Barometer, corrected for instrum'tal error and temperature. Millimeters.	Barometer, reduced to sea-level. Inches.	Barometer, reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Agram	29.32	744.8	29.89	759.2	38.3	3.5	89	NE	.....	.....	1	.....	8	.....	.....	0.228	5.8	.....	Prof. Ivan Stozir
Cracow, I. R. Observatory	29.08	738.6	29.37	758.6	38.5	3.6	73	WNW	.....	.....	1	.....	9	.....	.....	0	0	.....	Dr. Wierzbiski.
Eperies	28.94	735.1	29.85	758.1	37.9	3.3	59	Calm	.....	.....	0	.....	8k	.....	.....	0	0	.....	Julius Mikolik.
Gratz	28.67	725.7	29.85	758.3	36.9	2.7	75	SSW	.....	.....	2	.....	8	.....	.....	0.315	8.0	.....	Andreas Rospini.
Hermannstadt	28.38	720.9	29.85	758.2	36.3	2.4	65	WNW	.....	.....	3	.....	8	.....	.....	0.335	8.51	.....	Prof. Reissenberger.
Kremsmünster	28.39	721.1	29.78	756.3	33.8	1.0	81	Calm	.....	.....	0	.....	10	.....	.....	0	0	.....	Prof. C. Wagner.
Lemberg	28.78	731.1	29.79	756.7	38.5	3.6	80	NW	.....	.....	2	.....	10	.....	.....	0	0	.....	Dr. T. Stanecki.
Pola	29.74	755.3	29.85	758.2	50.9	10.5	63	Calm	.....	.....	0	.....	10s	.....	.....	0	0	.....	I.R.HydrographicOffice
Szathmar	29.43	747.6	29.91	759.7	42.4	5.8	52	N	.....	.....	3	.....	4	.....	.....	0	0	.....	Johann Tamas, S. J.
Szegedin	29.03	762.6	29.92	759.9	41.0	5.0	72	Calm	.....	.....	0	.....	0	.....	.....	0	0	.....	Karl Stancel.
Trieste	29.82	757.3	29.92	759.9	49.6	9.8	54	Calm	.....	.....	0	.....	10	.....	.....	0.504	12.8	Raining.....	P. Busin.
Vienna	29.10	739.0	29.81	757.1	41.0	5.0	58	SE	.....	.....	1	.....	.....	.....	.....	0	0	.....	I. R. Central Met. Obs'y
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time, and at Trieste at 7 a. m. of the following day. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

STATIONS.	Barometer, corrected for instrum'tal error and temperature. Inches.	Barometer, corrected for instrum'tal error and temperature. Millimeters.	Barometer, reduced to sea-level. Inches.	Barometer, reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Arlon	28.02	711.8	29.64	750.4	41.9	5.5	98	SW	.....	.....	4	.....	10	.....	.....	0.587	14.9	Rain and fog	Prof. M. Passau.
Brussels	29.21	741.8	29.40	746.8	47.7	8.7	98	SW	.....	.....	5	.....	10	.....	SW	0.075	1.90	.....	Royal Observatory.
Furnes	29.34	745.2	29.36	745.8	50.4	10.2	100	WSW	.....	.....	2	.....	10	.....	.....	0.193	4.9	.....	M. E. de Cae.
Maeseyck	29.30	744.1	29.43	747.4	46.0	7.8	99	SSW	.....	.....	6	.....	10	.....	.....	0.134	3.4	Raining.....	M. Pierrot.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:0, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

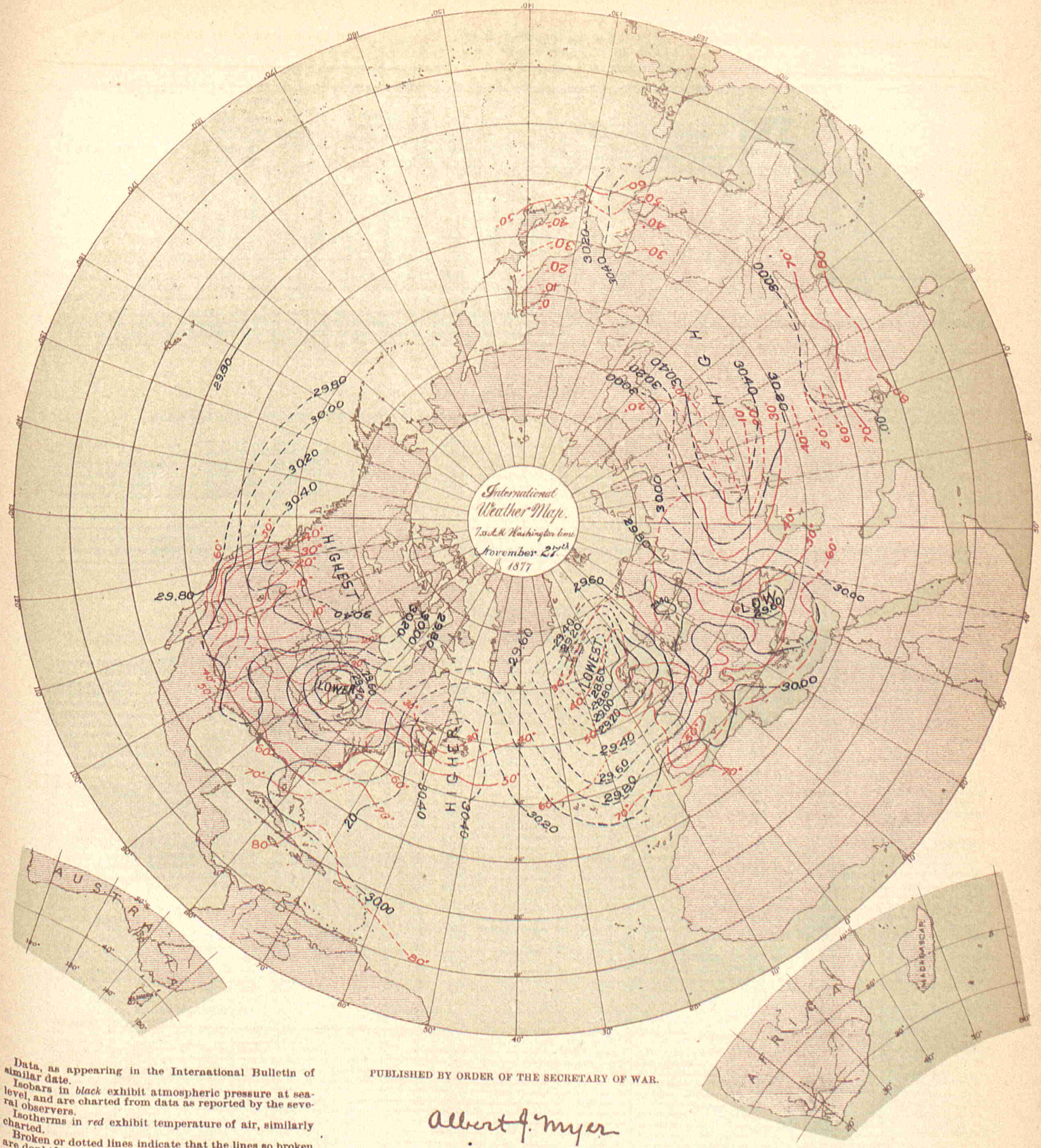
Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	28.93	734.8	29.03	737.3	40.0	4.4		SSW	8	3.6			3						Blue sky	W. Boswell.
Ardrossan	29.04	737.6	29.06	738.1	44	6.7		W			4		6						D. clouds	William McNeil.
Armagh, Observatory			29.12	739.6	42.0	5.6		SSW	11	4.9			7						D. clouds	S. Call, for Dr. Robinson
Bidston, (Liverpool Obs.)			29.19	741.4	45.8	7.7		SW	5	2.2			9						Overcast	John Hartnup.
Birr Castle, (Parsonstown)			29.16	740.7	43.0	6.1		WSW			1		4						D. clouds	J. L. E. Dreyer.
Bradford, Yorkshire	28.79	731.3	29.18	741.2	45.7	7.6		S			1		10			0.27	6.9		Overcast	J. McLandsborough.
Bridgetown, (Barbados)	28.88	733.5	29.91	759.7	82.0	27.8		NE			1		2						D. clouds	Pvt. G. W. Roberts, A.
Cambridge, Observatory			29.26	743.2	51.0	10.6		SW			1		10						Overcast	H. Todd. [H. C.
Cardington			29.28	743.7	50.0	10.0		W			1		9						Overcast	John McLaren.
Chatham, School M. E	29.14	740.1	29.27	743.4	53.2	11.8		SW			1		9						Hazy	Lt. W. G. Morris, R. E.
Dartmoor	27.80	706.1	29.25	742.9	47.0	8.3		SE			3		10						Rain and fog	Alexander Watt.
Davos Platz (Switzerland)																				Francis Redford, M. A.
Donaghadee	29.07	738.4	29.10	739.1	42	5.6		WSW			2		2						D. clouds	J. Mac Gowan.
Dover	29.29	744.0	29.31	744.5	52	11.1		WSW			3		7						¾ clouded	J. Costello.
Eccles, (near Manchester)			29.15	740.4	44.8	7.1		SW	1.0	0.4			10						Misty	Thomas Mackereth.
Falmouth, Observatory	28.98	736.1	29.20	741.7	51.9	11.1		SSW			1		10						Rain and fog	The Staff.
Fort Napier, (Natal)	27.55	699.8	29.76	755.9	78.3	25.7		NE			3		0						Blue sky	Pvt. G. Salmon, A.H. C.
Free Town, (Sierra Leone)			29.93	760.2	86.0	30.0		Calm			0		3						D. clouds	
Galway, Queen's College																				Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	30.07	763.8	30.13	765.3	65.8	18.8		W			3		4						Blue sky	Corpl. C. Aitken, A.H.C.
Glasgow, Observatory	28.85	732.8	29.05	737.9	40.9	4.9		SSW			3		5						D. clouds	D. G. Maclean.
Great Yarmouth	29.27	743.4	29.30	744.2	49	9.4		SW			3		5						Misty	G. T. Watson.
Greenwich, Royal Obs'y	29.12	739.6	29.29	744.0	51.7	10.9		SW			1		10						Overcast	The Staff, for G. B. Airy.
Guernsey	29.06	738.1	29.28	743.7	55	12.8		SSW			1		10						Misty	Dr. S. E. Hoskins, F.R.S.
Helston			29.22	742.2	53	11.7		S			2		10n			0.76	19.3		Heavy rain	M. P. Moyle.
Holyhead	29.10	739.1	29.14	740.1	47	8.3		SW			3		3						D. clouds	John Tilston.
Jersey	29.04	737.6	29.34	745.2	54.5	12.5		SW			4		10						Raining	J. Fisher.
Kew, Observatory			29.29	744.0	51.6	10.9		SW	6	2.7			10kd						Misty	The Staff.
Kingstown	29.14	740.1	29.17	740.9	45	7.2		W			3		8						Overcast	George Mitchell.
Leicester, Museum			29.25	742.9	46.0	7.8		SW			2		10						Overcast	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.99	761.7	30.06	763.5	63.4	17.4		NW			3		8						D. clouds	Sgt. C. Arbeiter, A.H.C.
Nairn	28.88	733.5	28.97	736.8	37	2.8		W			1		2						¼ clouded	W. D. Penny.
Nassau, (Bahamas)			30.04	763.0	76.0	24.4		SE			1		10						Overcast	C. S. Duncombe.
Nottingham, Observatory	29.07	738.4	29.26	743.2	46.3	7.9		SW			1		10c;k		SW	0.317	8.05		Overcast	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	28.71	729.2	29.23	742.4	44.9	7.2		SW			2		10						Overcast	Rev. Stephen Whitty
Oxford, Radcliffe Obs'y			29.28	743.7	50	10.0		SSW			1		10						Gloomy	F. Lucas
Plymouth	29.13	739.9	29.20	741.7	50.3	10.2		Calm			0		10						Rain and fog	John Merrifield.
Roche's Point	29.17	740.9	29.21	741.9	44	6.7		W			3		5						Fine	W. Kennedy.
Saint Ann's Head	29.04	737.6	29.20	741.7	49	9.4		SW			1		10						Showery	John C. Walker.
Sandwick Manse, (Orkneys.)			28.88	733.5	41.8	5.4		W	26	11.6			5						D. clouds	Rev. C. Clouston, LL. D
Scutari, Cemetery, (Turkey)			29.77	756.1	45.0	7.2		NW			2		10						Raining	Sergt. W. H. Lyne.
Sheffield	28.98	736.1	29.22	742.2	45.7	7.6		SSW			1		8			0.10	2.5		Overcast	W. F. Cooper.
Silloth Rectory	29.09	738.9	29.12	739.6	42.9	6.1	84	W			5		10			0.310	7.87		Overcast	Rev. F. Redford, M. A.
Stonyhurst, Observatory					43.9	6.6		SW			1		10						Misty	Rev. S. J. Perry.
Stornoway, Lews C., (Hebr.)			28.99	736.3	38	3.3		SW			3		3						Snowing	John Smith.
Stratfield Turgiss	29.10	739.1	29.32	744.7	50.6	10.3		SW			1		8						D. clouds	Rev. C. H. Griffith, F.M.S.
Thurso			28.89	733.8	39	3.9		SSW			2		6						D. clouds	John Trotter.
Truro, Royal Institution			29.24	742.7	52	11.1		W			4		10						Raining	W. Newcombe.
Valencia, Observatory			29.21	741.9	45.3	7.4		W	21	9.4			7						Showery	The Staff.
Sub-Series.																				
Calf of Man, (Isle of Man)																				Henry Mercer.
Cape Good Hope, Obs'y	30.10	764.5	30.14	765.5	71.9	22.2	50	W	16	7.2		1	4							The Staff, for E. J. Stone.
Hobart Town, (Tasmania)			29.84	757.9	57.0	13.9	76	NW			2		7k			0.02	0.5			Francis Abbott, F.R.A.S.
Leith, Restalrig Park																				Andrew Gibb.
Mauritius, Observatory	29.83	757.7	30.02	762.6	76.3	24.6	80	E	9.0	4.0		2	6		SE	1.62	41.2		Cloudy; fine	C. Meldrum.
Melbourne, Observatory	29.86	758.4	29.95	760.7	54.0	12.2	64	SE	7	3.1			0			0	0		Very fine	R. L. J. Ellery.
Monach L't-house, (Hebrides)																				J. Youngclause.
North Unst, (Shetland Is.)																				Robert Burnet.

Note.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m.

Marine Series. Vessels.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. 0—10.	Clouds. Direction. From—	Sea or swell. Height scale 0—9	Sea or swell. Direction from—	Weather.	Observer.
S. S. Algeria															Capt. W. Watson.
S. S. Batavia, N. 42° 30′, W. 54° 10′															
Ship Camperdown	30.47	773.9	52	11.1		ENE			4	0		4	ENE	Blue sky	Capt. J. E. Mouland.
Brig Catherine															Capt. A. T. Miller.
Barque Celeste															Capt. Adam Smith.
S. S. Hibernia															Capt. D. F. McKechnie
Barque Maroon															Capt. W. R. Otto
Ship Mikado															Capt. A. T. Brown.
S. S. Seine															Capt. C. C. Prehn.
Barque Sorata															Capt. H. Manning.
Schooner Traveller															Capt. Jas. J. Price.
															Capt. Alex. Simpson

Note.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the cooperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	BAROMETER. Corrected for instrum'tal error and temperature. Inches.	BAROMETER. Corrected for instrum'tal error and temperature. Millimeters.	BAROMETER. Reduced to sea-level. Inches.	BAROMETER. Reduced to sea-level. Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'r 0—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Upper. From—	CLOUDS. Direction. Lower. From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	WEATHER.	OBSERVER.
San José	26.20	665.5			67.1	19.5	90	NE			1		10n			Blank	Blank		Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.53	750.0	29.58	751.2	37.8	3.2	87	SSW			2		10						
Fanöe	29.36	746.3	29.40	746.8	35.1	1.7	93	SSE			6		10						
Godthaab, (Greenland)	29.72	754.9	29.76	756.0	28.2	— 2.1	96	N			2		10					Snowing	
Stykkisholm, (Iceland)	29.22	742.3	29.26	743.2	29.3	— 1.5	100	NE			9		8						
Thorshavn, (Faröe)	28.56	725.5	28.60	726.4	41.9	5.5	86	SW			4		7						
Vestervig	29.25	743.0	29.42	747.3	35.8	2.1	94	SE			6		10						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the cooperation of the Director of the Paris Observatory, and the respective Observers.

Alençon, Normal School	28.93	734.9	29.48	748.9	48.2	9	87	SW			1		10			0.35	9.	Covered	Collignon, Director.
Amiens, Normal School	29.27	743.4	29.38	746.2	50.7	10.4	95	WSW			2		10			0	0	Covered	Boisvarne, Director.
Avignon, Normal School	29.77	756.1	29.85	758.1	45.9	7.7	72	N			1		10			0	0	Foggy	Mr. Giraud, Director.
Bar-sur-Seine	28.98	736.2	29.55	750.5	50.0	10.0	92	SW			1		10			0.075	1.9	Raining	C. Saillard.
Beaumette Obs'y (Angers)	29.26	743.1	29.41	747.1	56.5	13.6	98	SW	15.4	6.9			10		SW	0.583	14.8	Raining	Albert Cheux.
Beauvais	29.15	740.4	29.43	747.6	52.5	11.4	91	S			2		10		S	0.295	7.50	Covered	Normal School.
Besançon	28.80	731.5	29.70	754.4	47.1	8.4	94	SW			2		8		SW	0.059	1.5	Very cloudy	Normal School.
Bourg-en-Bresse	28.87	733.4	29.78	756.5	44.1	6.7	82	S			8		10n		SE	0.098	2.5	Covered	Normal School.
Bourges, Normal School	29.04	737.6	29.50	749.4	51.8	11	90	SW			4		5		NE	0.169	4.3	Cloudy	A. Wagner, Director.
Brest, Naval Observatory	29.05	737.8	29.26	743.3	54.9	12.7	93	SW			4		10		SW	1.024	26.00	Raining	The Staff.
Carcassonne, Normal School	29.43	747.4	29.84	758.0	49.1	9.5	84	E			2		2		E	0	0	Slightly cl'dy	Vateau, Director.
Caen	29.30	744.1	29.37	746.0	55.4	13	98	N			1		10		NE	0.248	6.3	Covered	Normal School.
Chartres, Normal School	28.88	733.5	29.44	747.7	53.4	11.9	80	SW			2		10			0.091	2.3	Covered	Lequin, Director.
Châlons-sur-Marne, N. Sch'l	29.19	741.4	29.50	749.4	48.2	9.0	97	S			3		10n			0.039	1.0	Covered	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.28	718.3	29.61	752.0	57.7	14.3	72	SW			3		8		SSW	0.110	2.8	Very cloudy	Alluard, Director.
Commercy, Normal School	28.70	728.9	29.59	751.6	48.7	6.5	97	SW			4		8		SW	0.020	0.5	Very cloudy	Dr. Goulet, Director.
Commune de Grésque*	28.72	729.5	29.86	758.5	47.3	8.5	52	SE			1		10		SE	0	0	Covered	M. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	29.28	743.8	29.50	749.2	56.8	13.8	100	SSW			4		10			0.433	11.0	Covered	Mouillot, Director.
Le Mans, Normal School	28.13	739.9	29.44	747.7	54.3	12.4	95	SW			2		10			0.295	7.5	Covered	Poirrier, Director.
Lons-Le-Saulnier, N. School	28.77	730.7	29.09	754.1	48.7	9.3	81	SW			1		10			0.583	14.8	Covered	Pin, Director.
Lorient, Naval Observatory	29.31	744.4	29.41	746.9	57.2	14.0	89	SW			5		10			0.362	9.2	Covered	T. Carré, Director.
Mâcon, Normal School	29.01	736.8	29.71	754.6	42.6	5.9	88	Calm			0		10			0	0	Covered	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	28.45	722.5	29.50	749.3	41.0	5	84	NNW					10		SSE	0	0	Covered	Normal School.
Nismes, Normal School	29.69	754.0	29.89	759.2	50.0	10	74	NW			2		5		SE	0	0	Cloudy	Boyer, Director.
Orleans, Normal School	29.12	739.6	29.50	749.3	50.0	10	97	SW			2		10			0	0	Covered	Bernard, Director.
Paris, Observatory	29.21	741.9	29.45	747.9	51.3	10.7	96	SW			1		10			0.060	1.53	Raining	National Observatory.
Privas	28.76	730.6	29.83	757.6	53.6	12	69	S			2		10		S	0	0	Covered	Normal School
Rochefort, Naval Obs'y	29.55	750.5	29.68	753.3	57.2	14.0	95	SSW			6		10		SSE	0.75	19.	Raining	Lt. Decante, Director.
Rouen, Normal School	29.32	744.8	29.41	747.0	54.5	12.5	90	SSE			2		10			0.335	8.5	Covered	F. Lucard, Director.
Tarbes, Normal School																			T. Hugues, Director.
Villefranche	29.02	737.1	29.74	755.5	43.0	6.1	94	SE			6		10			0.024	0.6	Covered	Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.81	757.1	29.84	757.8	81.0	27.2										0	0		L'Abbé Marchési.
Marseilles, Observatory			29.83	757.6	54.5	12.5	59	E			1		10			Inap.	Inap.	Raining	The Staff.
Mont-Louis	24.72	627.8	30.03	762.8	45.0	7.2	59	SW	24.2	10.83			8		W	0	0		Mr. Falguère.
Nice			29.85	758.3	54.3	12.4	48	NE					10		WSW	0	0	Covered	Dr. A. Niepce.
Paris, Montsouris Obs'y	29.17	740.8	29.44	747.8	51.3	10.7	96	SSW			2–3		10			0.071	1.8	Light rain	Marié Davy, Director.
Perpignan			29.83	757.7	50.0	10.0	76	NE	3.7	1.67			10			0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.																			M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.40	568.9			41.4	5.2		SW			4–6		10			0.398	10.1	Rainy	Gen'l de Nansouty.
Saint Maur, (near Paris)	29.20	744.0	29.46	748.2	51.3	10.7	97	SSW			1		10	SSW		0.390	9.9	Covered	E. Renou.
Toulouse, Observatory	29.08	738.5	29.80	756.8	52.0	11.1	75	SSE			4		8			0.077	1.95		The Staff.
Tours	29.29	743.9	29.48	748.9	54.3	12.4	91	SSW			4		10		WSW	0.173	4.4		C. Marquet.
Versailles, (near Paris)			29.45	748.1	51.4	10.8	97	SW			3		10			0.082	2.08	Light rain	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.45	773.3	30.47	774.0	42.3	5.7	81	NNW	4.5	2.0			10k			0.020	0.5	Covered	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; for Montsouris, the barometer reduced to freezing but not to sea-level. At Mirecourt the cloud direction is apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Grésque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,368 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 136 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg																			
Berlin	29.49	749.0	29.67	753.6	39.2	4.0	76	S			1		9						Prof. Dr. Hoh.
Breslau	29.28	743.8	29.81	757.2	39.0	3.9	72	SSE			2		1			0.064	1.62		Prof. Arndt.
Carlsruhe	29.17	740.9	29.60	751.7	43.2	6.2	80	SE			1		10			0	0		Royal University Obs'y.
Cassel	28.99	736.3	29.59	751.5	36.3	2.4	91	SSW			6		10			0.076	1.9	Raining	Albert Senz.
Crefeld	29.26	743.3	29.42	747.3	41.9	5.5	96	SE			4		10			0	0		Dr. H. Möhl.
Emden	29.41	746.9	29.44	747.8	39.0	3.9	92	SSE			2		10			0.16	4.	Drizzling	Director Lose.
Frankfort on the Main	29.26	743.1	29.63	752.6	38.3	3.5		SSE			1		10			0.016	0.4		Prof. Prestel.
Friedrichshafen	28.30	718.7	29.77	756.2	37.0	2.8	93	N			1		10	N		0.130	3.3	Foggy	Physical Society.
Hamburg	29.44	747.7	29.51	749.5	36.0	2.2	89	SE			1		10			0.717	18.2	Rain & snow	M. Wilhelm.
Kiel	29.46	748.3	29.48	748.7	37.2	2.9	80	SE			3		10			0.008	0.2	Light fog	Captain F. Hegemann.
Königsberg, (Prussia)	29.63	752.6	29.71	754.6	38.3	3.5	83	W								0	0		Prof. G. Karsten.
Köslin			29.69	754.2	35.4	1.9		W			4		4					Fair	Prof. E. Luther.
Leipsic, Observatory	29.26	743.3	29.69	754.2	39.0	3.9	72	S			2		9	SW		0	0		H. Müller.
Memel, Naval School	29.63	752.5	29.67	753.7	39.4	4.1	79	WNW			6		10ks;n			0.169	4.3		Prof. Bruhns.
Neufahrwasser	29.74	755.4	29.76	755.8	37.2	2.9	82	WSW			2		5						Reinbrecht von Skalweit.
Posen	29.63	750.0	29.83	757.7	39.0	3.9	73	S			5		1			0.071	1.8		A. Lothes.
Strassburg Obs., (in Alsace	29.09	738.8	29.65	753.0	43.3	6.3	87	SW			2		10					Clear	Dr. Magener.
Stuttgart	28.66	728.0	29.61	752.0	46.0	7.8	78	W			3		9	W		0.000	0.01	Raining	Dr. Schur.
Treves, (Trier)	28.93	734.7	29.44	747.7	43.5	6.4	91	W			5		10			0.213	5.4		Prof. Schoder.
Weissenburg, (Bavaria)	28.16	715.2	29.71	754.6	33.8	1.0	90	S	11	5			10			0.619	13.18	Foggy	Prof. Flesch.
Wustrow, Naval School	29.59	751.6	29.64	752.8	35.8	2.1	86	SE			2		7			0.039	1.0	Covered	Dr. Von Bebber.
German Naval Series.																		Cloudy	E. F. Schütz.

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet: Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4, Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.46	748.2	29.85	758.3	52.3	11.3		NW										Clear	Dr. J. F. J. Schmidt.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and wind-force; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.98	761.4	30.03	762.7	75.8	24.3	68	SW	11.07	4.97			2			0	0	D. clouds	
Deesa	29.51	749.5	29.99	761.8	77.8	25.4	21	N					0			0	0	Blue sky	
Bombay	29.84	757.9	29.88	758.9	81.9	27.7	79	NNW	17.0	7.6			5		WNW	0	0	D. clouds	
Poona	27.85	707.3	29.83	757.6	83.1	28.4	50	E					4			0	0	D. clouds	
Lahore	29.20	741.8	29.98	761.5	61.1	16.2	82	Calm	1.8	0.8			0			0	0	Blue sky	
Belgaum	27.37	695.3	29.90	759.4	80.0	26.7	54	E	2.0	0.9			4	W		0	0	D. clouds	
Bangalore																			
Roorkee	28.99	736.4	29.92	760.0	67.2	19.6	74	NW	4.1	1.8			8			0	0		
Agra	29.37	746.0	29.95	760.7	71.7	22.1	67	W					5			0	0		
Trichinopoly																			
Nagpur	28.87	733.3	29.91	759.8	81.6	27.6	47	SE	2.3	1.0			0			0	0	Blue sky	
Madras																			
Lucknow	29.56	750.7	29.94	760.5	69.1	20.6	49	NW	3.5	1.6			5	ESE		0	0	D. clouds	
Allahabad	29.60	751.9	29.92	759.9	74.1	23.4	66	Calm	3.2	1.4			0			0	0	Blue sky	
Patna	29.72	754.8	29.90	759.4	78.3	25.7	63	E	0.8	0.4			2	E	E	0	0		
Hazaribagh	27.89	708.3	29.93	760.2	72.0	22.2	57	W	7.6	3.4			0			0	0	Blue sky	
Cuttack	29.86	758.4	29.94	760.4	80.0	26.7	72	SSW	1.1	0.5			0			0	0	Blue sky	
Calcutta (Alipore)	29.90	759.6	29.92	760.1	77.8	25.4	78	S	7.0	3.1			0			0	0	Blue sky	
Goalpara	29.45	748.0	29.85	758.1	75.3	24.1	66	Calm	4.0	1.8			1		W	0	0	D. clouds	
Chittagong	29.88	758.9	29.97	761.2	76.3	24.6	79	NW	0.7	0.3			0			0	0	Blue sky	
Sibsagar	29.60	751.9	29.95	760.7	65.5	18.6	92	ENE	3.1	1.4			10	W	W	1.92	48.8	Overcast	
Rangoon																			
Jubbulpore	28.59	726.2	29.97	761.2	76.5	24.7	83	NW	2.0	0.9			0			0	0	Blue sky	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,026 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 1—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	21.93	557.1	29.89	759.1	28.8	— 1.8	94	NNE	.....	.....	6	.....	8	NW	.....	3.150*	80.0*	.....	Ab. Dom. Mongini.
Stelvio	21.93	556.7	29.89	759.2	21.7	— 5.7	.....	W	.....	.....	1	.....	7	S	.....	0	0	.....	Signora Ernesta Manfredi.
Udine	29.46	748.3	29.86	758.9	46.2	7.9	53	NE	0.7	0.3	.....	.....	3	.....	.....	0	0	.....	Prof. Giovanni Clodig.
Padua	29.79	756.6	29.90	759.4	41.0	5.0	64	SW	2.5	1.1	.....	.....	9	W	.....	0	0	.....	Prof. Dott. Lorenzoni.
Vicenza	29.71	754.6	29.91	759.6	44.4	6.9	57	SW	0	0	.....	.....	5	W	.....	0	0	.....	Conte Alm. Da Schio.
Verona	29.69	754.2	29.92	759.9	44.6	7.0	72	SSE	0	0	.....	.....	10	.....	.....	0	0	.....	Dott. B. Bertoncelli.
Bergamo	28.58	725.8	29.92	759.9	42.8	6.0	56	S	.....	.....	1	.....	8	.....	.....	0	0	.....	Prof. Trionfini Carlo.
Domodossola	28.87	733.4	29.92	760.0	46.4	8.0	67	Calm	.....	.....	0	.....	8	.....	.....	0	0	.....	Prof. Giuseppe Calza.
Milan	29.41	747.0	29.95	760.6	43.2	6.2	.....	WSW	.....	.....	2	.....	10	SSW	.....	0	0	.....	Ab. Gio. Capelli.
Pavia	29.57	751.1	29.93	760.1	40.6	4.8	62	SW	.....	.....	2	.....	8	SW	.....	0	0	.....	Prof. Gio. Cantoni.
Moncalieri	28.99	736.3	29.91	759.7	43.9	6.6	43	NNW	0	0	.....	.....	3	.....	.....	0	0	.....	Prof. P. F. Denza.
Mondovi	27.95	710.0	29.89	759.1	41.7	5.4	34	N	.....	.....	4	.....	6	WNW	.....	0	0	.....	Prof. D. C. Bruno.
Porto Maurizio	29.67	753.6	29.89	759.3	53.2	11.8	56	ENE	.....	.....	2	.....	9	WNW	.....	0	0	.....	Prof. L. Vassallo.
Genoa	29.71	754.5	29.87	758.8	53.6	12.0	76	SE	8.1	3.6	.....	.....	10	SE	.....	0	0	.....	Prof. G. M. Garibaldi.
Placenza	29.66	753.4	29.93	760.1	41.2	5.1	64	W	2.5	1.1	.....	.....	10	W	.....	0	0	.....	Dott. G. Manzi.
Parma	29.58	751.3	29.91	759.6	41.4	5.2	66	NW	.....	.....	4	.....	10	.....	.....	0	0	.....	Prof. P. Pigorini.
Florence	29.69	754.0	29.95	760.6	41.4	5.2	73	Calm	.....	.....	0	.....	10	.....	.....	0	0	.....	Cav. F. Meucci.
Leghorn	29.83	757.6	29.91	759.8	46.2	7.9	79	SW	4.9	2.2	.....	.....	10	SW	.....	0.295	7.5	.....	Prof. P. Monte.
Siena	28.71	729.3	29.93	760.3	41.4	5.2	58	SSE	0.7	0.3	.....	.....	10	W	.....	0.012	0.3	.....	Prof. L. Toscani.
Urbino	28.39	721.2	29.97	761.1	45.3	7.4	59	SW	.....	.....	2	.....	10	.....	.....	0	0	.....	Prof. P. Serpieri.
Pesaro	29.89	759.1	29.94	760.4	46.9	8.3	63	SW	13.0	5.8	.....	.....	10	SW	.....	0.197	5.0	.....	Prof. Luigi Guidi.
Ancona	29.84	757.8	29.94	760.5	49.3	9.6	50	SE	.....	.....	4	.....	10	.....	.....	0	0	.....	Prof. F. DeBosis.
Grosseto	29.84	757.9	29.95	760.8	50.9	10.5	59	SE	.....	.....	2	.....	9	NW	.....	0	0	.....	Avv. P. Ponticelli.
Rome	29.81	757.1	29.98	761.6	52.0	11.1	67	S	3.8	1.7	.....	.....	10	.....	.....	0.028	0.7	.....	Prof. P. A. Secchi.
Naples, O. U.	29.84	757.8	30.04	762.9	59.0	15.0	48	S	.....	.....	2	.....	10	NW	.....	0	0	.....	Prof. L. Palmieri.
Lecce	.....	.....	.....	.....	52.9	11.6	87	N	16.1	7.2	.....	.....	6	.....	.....	0	0	.....	Prof. C. De Giorgi.
Cosenza	29.14	740.1	30.04	762.9	53.2	11.8	74	NE	1.3	0.6	.....	.....	2	.....	.....	0	0	.....	Prof. F. D. Conti.
Cagliari	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. A. Pacinotti.
Riposto, (Sicily)	.....	.....	.....	.....	61.2	16.2	64	NE	.....	.....	2	.....	8	SE	.....	0	0	.....	Prof. F. Caffero.
Palermo	29.76	755.9	30.02	762.4	59.4	15.4	59	W	6.9	3.1	.....	.....	8	WSW	.....	0	0	.....	Prof. G. Cacciatore.
Caltanissetta	28.07	712.9	30.02	762.5	51.2	10.7	65	WSW	.....	.....	2	.....	2	E	.....	0	0	.....	Prof. A. Pagani.
Syracuse	29.94	760.4	30.01	762.3	58.8	14.9	53	SE	.....	.....	1	.....	5	SW	.....	0	0	.....	Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.50	749.3	30.06	763.4	54.1	12.3	56	SW	0.7	0.3	.....	.....	9	.....	.....	0.236	6.0	.....	Prof. F. Brioschi.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,543.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Siena, 348.5 m., or 1,143.3 ft.; Urbino, 461 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft. * Unmelted snow

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Tokei (Yeddo)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	The Observatory.
Tokei (Yeddo) University	29.93	760.1	30.03	762.7	47.3	8.5	82	NW	1	0.4	.....	.....	8s	.....	.....	0	0	Cloudy	Prof P. V. Veeder.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Aguascalientes	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	I. N. Marin, M. D.
Córdoba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	C. Peña, M. D.
Cuernavaca	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	L. Castillo, A. E.
Guadalajara	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. L. Perez.
Guanajuato	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. V. Fernandez.
Leon	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. M. Leal.
Mexico	29.01	584.5	30.08	764.1	54.3	12.4	80	NW	0.2	0.09	.....	.....	9km	.....	SW	0.02	0.6	Covered	Central Observatory.
Orizaba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	N. N.
Orizaba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	I. Orozco, M. D.
Pabellon, (Aguascalts)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. V. de Leon, M. E.
Puebla	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. B. Gonzalez.
Toluca	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. C. Velazquez.
Tlacotalpam	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. F. R. Bayly.
San Luis Potosi	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	G. Barroeta, M. D.
Vera-Cruz	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. J. Rossell.
Zacatecas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. A. Bonilla, M. E.
Puebla, (Catholic Institute)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	P. Spina. [M. M. D. D.
Morelia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Tena, F. L. Páramo.

Note.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,933.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,293 m., or 7,512.9 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabell m, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosí, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

Furnished by the cooperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	29.36	745.8	29.36	745.8	48.6	9.2	.....	S	.....	.....	4	.....	.....	.....	.....	0.024	0.6	.....	
Groningen	29.31	744.5	29.37	745.9	39.2	4.0	.....	S	.....	.....	2	.....	.....	.....	.....	0	0	.....	
Helder	29.30	744.3	29.30	744.3	41.2	5.1	.....	SSE	.....	.....	4	.....	.....	.....	.....	0.094	2.4	.....	
Hellevoetsluis	.....	.....	29.35	745.6	49.1	9.5	97	SSW	.....	.....	4	.....	.....	.....	.....	.....	.....	.....	
Utrecht	29.34	745.1	29.38	746.3	44.4	6.9	96	S	.....	.....	2	.....	10	.....	.....	0.181	4.6	Dull	H. v d Brink.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	29.20	741.7	29.28	743.1	35.2	1.8	85	SSE	15.2	6.8	.....	.....	6	.....	.....	0.047	1.2	Snowing.....	
Brönö	29.47	748.4	29.50	749.4	29.8	— 1.2	65	NE	4	2	.....	.....	1	.....	.....	0	0	.....	
Christiania	29.43	747.5	29.58	751.4	25.5	— 3.6	87	NNE	0	0	.....	.....	10	.....	.....	0	0	Light fog.....	
Tromsö	29.58	751.4	29.63	752.5	24.1	— 4.4	91	Calm	0	0	.....	.....	0	.....	.....	0	0	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	29.65	753.2	29.85	758.1	62.6	17.0	96	NW	17.4	7.8	.....	.....	3	.....	.....	0	0	.....	Dr. J. A. Sampaio.
Campo Major	29.04	737.7	30.08	763.9	59.0	15.0	87	SW	9.4	4.2	.....	.....	10	SW	.....	0	0	.....	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.07	763.6	30.15	765.8	73.8	23.2	69	WSW	5.6	2.5	.....	.....	2	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.66	753.3	30.02	762.4	63.7	17.6	96	SSW	22.4	10.0	.....	.....	10	.....	.....	0.016	0.4	Raining.....	The Staff.
Ponta Delgada, (Azores)	29.79	756.6	29.86	758.4	68.0	20.0	80	WNW	8.7	3.9	.....	.....	3	.....	.....	0	0	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 9 h. 6 m., p. m

Naval Series. Vessels.	Sea or swell. Height scale 0–9	Sea or swell. Direction from—		
S. S. India.				A. D. Pedroso, Com'd't. Lt. S. A. P. de Mirando
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.39	746.5	29.82	757.5	37.2	2.9	74	WSW	13	6	.....	.....	7	.....	.....	.....	.....	.....	Astronomical Obs.
Wilna	29.28	743.6	29.70	754.4	39.6	4.2	89	S	2	1	.....	.....	10	.....	.....	.....	.....	Heavy clouds	Astronomical Obs.
Dorpat	29.32	744.6	29.56	750.8	38.1	3.4	90	S	6	4	.....	.....	10	.....	.....	.....	.....	.....	Prof. Dr. Weihrauch
St. Petersburg	29.62	752.3	29.63	752.7	39.4	4.1	88	SSE	18	8	.....	.....	10	.....	.....	.....	.....	.....	Central Physical Obs.
Kuopio	29.22	742.1	29.55	750.5	33.4	0.8	100	SE	18	8	.....	.....	10	.....	.....	.....	.....	Raining.....	Ch. Forsten.
Zieff	28.98	736.2	29.63	752.5	42.1	5.6	100	SE	4	2	.....	.....	10	.....	.....	Blank	Blank	.....	Physical Cabinet.
Nikolaiev	29.51	749.6	29.58	751.4	47.8	8.8	98	Calm	0	0	.....	.....	10	.....	.....	.....	.....	.....	Kurdakof.
Kertch	29.63	752.7	29.65	753.2	51.1	10.6	93	E	11	5	.....	.....	8	.....	.....	.....	.....	.....	Lagorio.
Moscow	29.49	749.0	30.07	763.6	32.5	0.3	94	S	9	4	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Lugan	29.66	753.4	29.87	758.8	36.9	2.7	93	ESE	22	10	.....	.....	10	.....	.....	Blank	Blank	.....	Meteorological Obs.
Archangel	29.82	757.5	29.84	758.0	33.1	0.6	96	S	7	3	.....	.....	10	.....	.....	.....	.....	.....	Ogorodnikof.
Tiflis	28.57	725.7	30.01	762.3	45.9	7.7	80	Calm	0	0	.....	.....	10	.....	.....	.....	.....	.....	Physical Observatory.
Astrakhan	30.19	766.8	30.11	764.7	32.4	0.2	78	ESE	16	7	.....	.....	10	.....	.....	.....	.....	.....	Sebastianof.
Kasan	30.01	762.3	30.30	769.6	24.6	— 4.1	75	SSE	2	1	.....	.....	3	.....	.....	.....	.....	.....	Physical Cabinet.
Orenburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Tschernischef.
Ekaterinburg	29.34	745.1	30.34	770.6	26.8	— 2.9	53	W	4	2	.....	.....	1	.....	.....	.....	.....	Light clouds	Meteorological Obs.
Nukuss	29.80	756.9	30.04	763.1	33.1	0.6	82	NNE	2	1	.....	.....	10	.....	.....	.....	.....	.....	
Kasaly	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Bobrof.
Tashkend	28.55	725.1	30.34	770.5	36.9	2.7	80	Calm	0	0	.....	.....	10	.....	.....	.....	.....	.....	Michelson.
Barnaul	29.85	758.3	30.44	773.2	4.3	—15.4	86	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Meteorological Obs.
Yeniseisk	29.60	751.8	29.94	760.4	24.6	— 4.1	91	SW	9	4	.....	.....	10	.....	.....	.....	.....	.....	Marks.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Usolzef.
Oorga	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Mossin.
Peking, (China)	30.42	772.7	30.56	776.3	23.7	— 4.6	65	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Physical Observatory.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nikolaievsk, on the Amoor	.....	.....	.....	.....	—13.0	—25.0	.....	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Rave, Director.
Bilbao, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Manuel de Naveran
Burgos, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Domingo Martin y Perez.
Madrid, Royal Observatory	27.80	706.2	30.07	763.7	49.5	9.7	80	NW	2.2	1.00	.....	0	10	.....	.....	0	0	Covered	The Staff.
Murcia, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Olayo Diaz, Director.
Santiago, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.94	760.4	30.00	762.1	72.6	22.6	81	Calm	0	0	.....	10pc	0	.....	.....	0	0	Cloudy.....	Benito Vines, S. J.
San Fernando, Naval Obs'y	30.07	763.9	30.17	766.4	65.3	18.5	78	SSW	7.0	3.1	.....	0	9	.....	WSW	0.004	0.1	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.	.....	.....	29.91	759.6	75.6	24.2	89	W	0	0	.....	2k	0	.....	.....	0	0	Clear.....	Leonardo de Tejeda, Chief of Engineers.

NOTE.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

1877—November 27.

Furnished by the cöoperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.65	753.1	29.69	754.1	24.1	— 4.4		N			2		10					Snowing	
Umea	29.47	748.5	29.52	749.8	26.2	— 3.2	96	NE			4		10					Snowing	
Hernosand	29.48	748.9	29.54	750.2	27.7	— 2.4	87	N			4		10			0	0		
Stockholm	29.29	743.9	29.47	748.4	32.4	0.2	96	WSW			2		10			0.122	3.1		
Wisby	29.50	749.4	29.56	750.9	35.6	2.0	82	NNW			6		10			0.839	21.3		
Sub-Series.																			
Upsala	29.40	746.8	29.48	748.7	31.6	— 0.2	94	NW	11.9	5.3			10			0.026	0.66		Dr. Hildebrandsson.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the cooperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.33	719.6	29 80	756.9	39.9	4.4	95	SSW			1		10			0.134	3.4	Raining	The Observatory.
Zurich	28.11	714.0	29.80	757.0	38.1	3.4	92	SE			1		10			1.063	27.0	Raining	The Observatory.

Note.—For Geneva the corresponding departures from the normal values are: Barometer, —7.2 mm; Thermometer, —0.4 cent.; Relative Humidity, +17 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer red iced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople			29.78	756.4	45.1	7.3	90	NNW	9	4.0			10		NW	0.622	15.8		The Observatory.
Fao, (Persian Gulf)																			
Salonica					45.3	7.4		NW			8		0						B. S'efanidès.
Valona			29.90	761.0	47.7	8.7		NE			3		2			0.20	5.	Slightly cl'dy	A. Bertrand.
Varna																			Imperial Observatory.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.70	754.4	29.82	757.4	69.1	20.6	56	WSW			4		7c;ks		SW	0	0	D. clouds	Prof. C. V. A. Van Dyck

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	30.11	764.8	30.18	766.6	36.8	2.7	98	Calm	0	0		10						Foggy	Hon. J. Ferguson.
Brockville, Ontario	29.42	747.3	29.73	755.1	42	5.6		Calm	0	0			10s		SW	0.15	3.8	Cloudy	W. R. Bigg.
*Chatham, N. B			30.37	771.4	32	0.0	96	SE	4	1.8			10s		Calm	0	0	Cloudy	G. A. Blair.
Charlottetown, P. E. Island			30.32	770.1	40	4.4	95	SE	8	3.6			8s		Calm	0	0	Cloudy	H. J. Cundall, C. E.
Cornwall, Ontario	29.49	749.0	29.68	753.9	44.3	6.8	96	E			1		10s			0.033	0.84	Cloudy	James Smith, M. A.
Dalhousie, N. B	30.18	766.6	30.21	767.3	30.2	2.3	100	E			3					0.39	9.9	Raining	H. A. Johnson.
Esquimault, B. C	30.42	772.7	30.46	773.7	40.1	4.5	74	N				0	0			0	0	Clear	W. H. Bevis.
*Father Point, Quebec			30.00	762.0	35	1.7	95	NE	18	8.0			10n		E	0.48	12.2	Light rain	J. McWilliams.
Fredericton, N. B	30.00	763.5	30.13	765.3	44.2	6.8	93	E	10.0	4.5			10n			0.220	5.59	Raining	Prof. Harrison.
*Fort Garry, Manitoba	29.25	742.9	30.14	765.5	18	— 7.8	94	N	18	8.0			10n		Calm	0	0	Cloudy	James Stewart.
Goderich, Ontario																			H. J. Strang, M. A
Granton, Ontario	28.46	722.9	29.57	751.1	40	4.4	82	SW			3		10n			0.32	8.1	Cloudy	James Grant.
*Halifax, N. S	30.15	765.8	30.29	769.4	45	7.2	93	SE	8	3.6			10ks		SE	0	0	Cloudy	F. Allison, M. A.
Hamilton, Ontario	29.25	742.9	29.62	752.3	42.1	5.6	83	SW			2	8cs		SW		0.23	5.8	Cloudy	Geo. Dickson, M. A
Heart's Content, N. F	30.41	772.4	30.43	772.9	32	0.0	69	Calm			0	0	0			0	0	Fine	E. Weedon.
*Kingston, Ontario	29.36	745.7	29.69	754.1	44	6.7	91	S	10	4.5			10ks		W	0.40	10.2	Cloudy	S. Woods, M. A.
Little Glace Bay, N. S	29.41	747.0	29.45	748.0	34.5	1.4	95	Calm	0	0		4c		W		0	0	Fair	C. H. Rigby.
*Montreal, Quebec	29.53	750.0	29.73	755.1	48	5.9	86	W	10	4.5			8s			0.02	0.5	Cloudy	C. H. McLeod, C. E.
*Parry Sound, Ontario	28.82	732.0	29.51	749.5	43	6.1	92	SE	18	8.0		2ck	8n	S	S	0.20	5.1	Light rain	Rev. R. Mosley.
Peterboro, Ontario	28.90	734.0	29.65	753.1	43.9	6.6	90	Calm			0		10n			0	0	Misty	J. F. Jeffers, B. A.
Port Dover, Ontario	28.93	734.8	29.62	752.3	45	7.2	86	SW	23	10.3		5k	5ks	SW	SW	0.31	7.9	Cloudy	H. Morgan.
Port Hastings, N. S	30.38	771.6	30.43	772.9	43	6.1		S	2	0.9						0	0	Fine	Peter Grant.
Port Stanley, Ontario	28.97	735.8	29.62	752.3	44	6.7	76	SW	29	13.0			10ks		SW	0.26	6.6	Cloudy	M. Payne.
*Quebec, Quebec	29.55	750.6	29.88	758.9	44	6.7	88	NE	15	6.7			10n		NE	0.24	6.1	Cloudy	Capt. Ashe, R. N
*Rockliffe, Ontario	29.15	740.4	29.61	752.1	40	4.4	91	E	3	1.3			8s		S	0.25	6.3	Fair	W. H. McIntyre.
St. John, N. B	29.98	761.5	30.15	765.8	46	7.8	92	SE	18	8.8			10n			0.56	14.2	Raining	G. Murdock, C. E.
*Saugeen, Ontario	28.78	731.0	29.48	748.8	40	4.4	96	S	8	3.6			10s			0.32	8.1	Light rain	K. Stewart.
Stayner, Ontario	28.67	728.2	29.45	748.0	42	5.6	83	S	8	3.6			10n			0.14	3.6	Threatening	R. J. Cole.
Stratford, Ontario	28.28	718.3	29.57	751.1	30.3	4.1	95	SW	15.0	6.7			10n			0.503	12.78	Light rain	C. J. MacGregor, M. A.
*Sydney, C. B	30.44	773.2	30.47	773.9	28	— 2.2	98	Calm	0	0		2c	Fog		S	0	0	Clearing	T. C. Hill.
*Toronto, Ontario	29.25	742.9	29.64	752.8	43	6.1	91	S	7	3.1			10n		SW	0.49	12.4	Cloudy	Magnetic Observatory.
Windsor, N. S	30.17	766.3	30.26	768.6	45.5	7.5	92	SE	21	9.4			9nk			0	0	Fair	Prof. John E. Oram.
Woodstock, Ontario																			J. Montgomery.
Sub-Series.																			
St. Johns, Newfoundland					42.5	5.8	64	S				0	0			0	0	Fair	John Delany

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. John's N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

1877.—November 27.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.55	750.6	29.75	755.6	52	11.1	86	SE	9	4.0		0	5ks		SE	0.01	0.3	Fair	
Alpena, Michigan	28.70	729.0	29.32	744.7	40	4.4	91	S	19	8.5			10s		S	0.18	4.6	Cloudy	
Atlantic City, New Jersey	29.89	759.2	29.91	759.7	50	10.0	45	SW	13	5.8		0	0			Inap.	Inap.	Clear	
Augusta, Georgia	29.79	756.7	29.98	761.5	40	4.4	91	Calm	0	0		2c	2s;fg	SW	SW;N	0	0	Fair	
Baltimore, Maryland	29.83	757.7	29.88	758.9	46	7.8	85	SW	5	2.2		Haze	2s	Calm	Calm	0.30	7.6	Fair	
Barnegat, New Jersey	29.86	758.4	29.88	758.9	49	9.4	85	SW	15	6.7		0	0			0.02	0.5	Clear	
Bismarck, Dakota	28.31	719.1	30.12	765.0	18	— 7.8	81	N	26	11.6			10s		N	0.01	0.3	Cloudy	
Boise City, Idaho	27.52	699.0	30.33	770.4	25	— 3.9	88	N	1	0.4		0	0			0	0	Clear	
Boston, Massachusetts	29.70	754.4	29.85	758.2	58	14.4	88	SW	6	2.7		1k	2s;fg	SW	SW	1.64	41.7	Fair	
Brackettville, Texas	28.85	732.8	29.90	759.4	40	4.4	63	Calm	0	0		0	0			0	0	Clear	
Breckenridge, Minnesota	28.79	731.3	29.83	757.7	22	— 5.6	92	N	30	13.4			10n		N	0.01	0.3	Light snow	
Brownsville, Texas	29.88	758.9	29.95	760.7	53	11.7	93	N	2	0.9		0	0			0	0	Clear	
Buffalo, New York	28.94	735.1	29.63	752.6	46	7.8	76	S	14	6.3			10s		SW	0.19	4.8	Cloudy	
Burlington, Vermont	29.46	748.3	29.71	754.6	54	12.2	73	Calm	0	0			10s		S	0.06	1.5	Cloudy	
Cairo, Illinois	29.44	747.8	29.84	757.9	39	3.9	82	SW	8	3.6		0	1s		Calm	Inap	Inap.	Clear	
Camp Grant, Arizona	25.03	635.8	29.83	757.7	42	5.6	19	E			1	0	0			0	0	Clear	
Camp Verde, Arizona	26.69	677.9	30.18	766.6	31	— 0.6	58	NW				0	0			0	0	Clear	
Campo, California																			
Cape Hatteras, N. Carolina	29.95	760.7	29.95	760.7	51	10.6	86	Calm	0	0		2c	0	SW		0.33	8.4	Fair	
Cape Henry, Virginia	29.92	760.0	29.95	760.7	47	8.3	70	SW	6	2.7		0	0			Inap.	Inap.	Clear	
Cape Lookout, N. Carolina	30.01	762.2	30.02	762.5	57	13.9	69	W	1	0.4		0	0			0	0	Clear	
Cape May, New Jersey	29.88	758.9	29.90	759.4	52	11.1	73	S	26	11.6		0	0			0	0	Clear	
Charleston, South Carolina	29.95	760.7	30.02	762.5	53	11.7	79	SW	4	1.8		1cs	0	W		0	0	Clear	
Cheyenne, Wyoming	24.02	610.1	29.96	761.0	9	—12.8	80	N	8	3.6		5c	0	NW		0	0	Fair	
Chicago, Illinois	28.77	730.7	29.46	748.3	37	2.8	80	W	16	7.2			10s		W	0.37	9.4	Cloudy	
Cincinnati, Ohio	29.06	738.1	29.70	754.4	42	5.6	66	SW	9	4.0		2cs	8ks	SW	SW	0.23	5.8	Cloudy	
Cleveland, Ohio	28.98	736.1	29.70	754.4	42	5.6	74	S	14	6.3			10s		Calm	0.01	0.3	Cloudy	
Concho, Texas	28.11	714.0	29.88	758.9	29	— 1.7	88	SW	4	1.8		0	0			0	0	Clear	
Corsicana, Texas	29.55	750.6	30.04	763.0	38	3.3	71	N	6	2.7		0	0			0	0	Clear	
Davenport, Iowa	28.95	735.3	29.59	751.6	36	2.2	70	W	11	4.9			10s		W	0.03	0.8	Cloudy	
Denison, Texas	29.22	742.2	30.05	763.3	38	3.3	63	NW	13	5.8			10ks		NW	0	0	Cloudy	
Denver, Colorado	24.83	630.7	30.05	763.3	8	—13.3	78	W	5	2.2			8s		Calm	0.15	3.8	Cloudy	
Detroit, Michigan	28.89	733.8	29.55	750.6	40	4.4	73	SW	16	7.2			10s		SW	0.18	4.6	Cloudy	
Dodge City, Kansas	27.41	696.2	29.82	757.4	24	— 4.4	74	N	18	8.0		0	2s		N	0	0	Clear	
Dubuque, Iowa	28.81	731.8	29.51	749.5	33	0.6	89	W	12	5.4			10n		Calm	0.21	5.3	Light snow	
Duluth, Minnesota	28.85	732.8	29.54	750.3	26	— 3.3	88	N	22	9.8			10n			0.11	2.8	Light snow	
Eagle Pass, Texas	29.22	742.2	29.99	761.7	38	3.3	72	Calm	0	0		0	0			0	0	Clear	
Eastport, Maine	29.99	761.7	30.00	762.5	54	12.2	86	SE	26	11.6			10s		SE	0.27	6.9	Threatening	
Erie, Pennsylvania	28.94	735.1	29.65	753.1	45	7.2	76	SW	12	5.4			10s		SW	0.46	11.7	Cloudy	
Escanaba, Michigan	28.59	726.2	29.22	742.2	41	5.0	91	NW	6	2.7			10n		NW	1.00	25.4	Light rain	
Florence, Arizona	28.26	717.8	29.86	758.4	40	4.4	18	N				0	0			0	0	Clear	
Fort Bayard, New Mexico	23.87	606.3	29.87	758.7	38	3.3	29	SW	8	3.6		0	0			0	0	Clear	
Fort Craig, New Mexico	25.59	647.7			30	— 1.1	57	NW	1	0.4		0	0			0	0	Clear	
Fort Gibson, Indian Ter	29.40	746.7	29.96	761.0	35	1.7	70	NW	8	3.6		0	2s		NW	0	0	Fair	
Fort Griffin, Texas	28.81	731.8	30.13	765.3	40	4.4	56	NW	4	1.8		0	0			0	0	Clear	
Fort St. Michael, Alaska																			
Fort Sill, Indian Territory	28.82	732.0	29.97	761.2	38	3.3	90	NW	14	6.3			10s		NW	0	0	Cloudy	
Galveston, Texas	29.97	761.2	30.01	762.2	51	10.6	59	NE	12	5.4		0	0			0	0	Clear	
Grand Haven, Michigan	28.76	730.5	29.40	746.7	41	5.0	82	SW	25	11.2			10s		W	0.97	24.6	Cloudy	
Indianapolis, Indiana	28.88	733.5	29.65	753.1	41	5.0	73	SW	9	4.0		0	5s		SW	0.33	8.4	Clearing	
Indianola, Texas	29.99	761.7	30.02	762.5	51	10.6	65	NE	22	9.8		0	0			0	0	Clear	
Jacksboro, Texas																			
Jacksonville, Florida	29.98	761.5	30.01	762.2	56	13.3	87	SE	2	0.9		5k	0	SW		0	0	Fair	
Keokuk, Iowa	29.01	736.8	29.63	752.6	36	2.2	80	NW	6	2.7			10s		NW	Inap.	Inap.	Cloudy	
Key West, Florida	29.98	761.5	30.01	762.2	72.0	22.2	80	E	8	3.6			10s		Calm	0.01	0.3	Cloudy	
Kityhawk, North Carolina	29.97	761.2	30.00	762.0	49	9.4	85	SW	8	3.6		0	0			0.08	2.0	Clear	
Knoxville, Tennessee	28.86	733.0	29.87	758.7	41	5.0	83	Calm	0	0			10n		S	0.02	0.5	Light rain	
La Crosse, Wisconsin	28.70	729.0	29.43	747.5	31	— 0.6	79	NW	12	5.4			10s		NW	0.10	2.5	Cloudy	
La Mesilla, New Mexico	25.94	658.9	30.09	764.3	28	— 2.2	54	Calm	0	0		0	0			0	0	Clear	
Laredo, Texas					46	7.8	54	NE	2	0.9		0	0			0	0	Clear	
Leavenworth, Kansas	28.97	735.8	29.83	757.7	34	1.1	79	NW	8	3.6			10s		N	Inap.	Inap.	Cloudy	
Los Angeles, California	29.45	748.0	29.78	756.4	61	16.1	34	N	4	1.8		0	0			0	0	Clear	
Louisville, Kentucky	29.20	741.7	29.76	755.9	43	6.1	74	S	6	2.7		2c	8s	SW	S	0.39	9.9	Cloudy	
Lynchburg, Virginia	29.23	742.4	29.91	759.7	48	8.9	63	SW	1	0.4		2cs	8s	S	Calm	0	0	Cloudy	
Maricopa Wells, Arizona					32	0.0	50	N				0	0			0	0	Clear	
Marquette, Michigan	28.60	726.4	29.28	743.7	39	3.9	81	NW	8	3.6			10n		Calm	2.08	52.8	Heavy rain	
Mason, Texas	28.40	721.3	30.25	768.3	31	— 0.6	89	NW	4	1.8		0	0			0	0	Clear	
Memphis, Tennessee	29.57	751.1	29.89	759.2	41	5.0	91	SW	2	0.9		0	8m'e;fg		sw;calm	0.14	3.6	Clear	
Milwaukee, Wisconsin	28.99	736.3	29.37	746.0	34	1.1	100	NW	12	5.4			10n			0.40	10.2	Light snow	
Mobile, Alabama	29.87	758.7	29.92	760.0	48	8.9	96	N	4	1.8		0	Fog		N	0.39	9.9	Foggy	
Montgomery, Alabama	29.65	753.1	29.88	758.9	49	9.4	81	SE	3	1.3			10ks		W	0.01	0.3	Cloudy	
Morgantown, West Virginia	28.73	729.7	29.78	756.4	45	7.2	68	SW	9	4.0			10s		SW	0.04	1.0	Cloudy	
Mt. Washington, N. H.	23.59	599.2	29.95	760.7	37	2.8	100	S	78	34.9			10n		S	3.00	76.2	Sleeting	
Nashville, Tennessee	29.27	743.4	29.81	757.2	41	5.0	91	E	2	0.9			10n			0.25	6.3	Light rain	
New Haven, Connecticut	29.75	755.6	29.87	758.7	52	11.1	86	S	6	2.7		5cs	0	SW		0.05	1.3	Fair	
New London, Connecticut	29.84	757.9	29.89	759.2	53	11.7	93	SW	8	3.6		0	Fog		Calm	0.06	1.5	Clear	
New Orleans, Louisiana	29.87	758.7	29.93	760.2	52	11.1	86	W	6	2.7		0	0			0.06	1.5	Clear	
Newport, Rhode Island	29.84	757.9	29.89	759.2	53	11.7	86	SW	4	1.8		0	0			0.82	20.8	Clear	
New York, New York	29.69	754.1	29.87	758.7	48	8.9	85	SW	15	6.7		5cs	0	SW		0.11	2.8	Fair	
Norfolk, Virginia	29.91	759.7	29.97	761.2	45	7.2	92	S	8	3.6		0	0			0.21	5.3	Clear	
North Platte, Nebraska	27.09	688.1	29.82	757.4	20	— 6.7	63	NW	28	12.5			10s		NW	0	0	Cloudy	
Olympia, Washington Ter.	30.41	772.4	30.46	773.7	31	— 0.6	89	SE	2	0.9		0	0			0	0	Clear	
Omaha, Nebraska	28.69	728.7	29.80	756.9	23	— 1.7	83	NW	24	10.7			10s		NW	Inap.	Inap.	Cloudy	
Oswego, New York	29.40	746.7	29.72	754.9	49	9.4	74	SE	5	2.2			10n		Calm	0.25	6.3	Light rain	
Pembina, Dakota	29.20	741.7	30.07	763.8	21	— 6.1	85	N	26	11.6			10ks		N	Inap.	Inap.	Cloudy	
Philadelphia, Pennsylvania	29.82	757.4	29.87	758.7	47	8.3	85	SW	11	4.9		0	Sm'e		Calm	0.17	4.3	Clear	
Phœnix, Arizona					36	2.2	62	Calm				2cs	0	W		0	0	Clear	
Pike's Peak, Colorado	17.36	440.9	29.57	751.1	—22	—30.0	59	NE	30	13.4		8c	0	NE		0	0	Fair	
Pioche, Nevada	24.07	611.4	29.84	757.9	22	— 5.6	58	N	8	3.6		0	0			0	0	Clear	
Pittsburg, Pennsylvania	28.92	734.6	29.73	755.1	44	6.7	75	SW	10	4.5		8k	2s	W	W	0.13	3.3	Cloudy	
Port Huron, Michigan	28.88	733.5	29.54	750.3	40	4.4	82	S	21	9.4			10cs		S	0.16	4.1	Cloudy	
Portland, Maine	29.81	757.2	29.86	758.4	55	12.8	87	SE	12	5.4			10s		Calm	1.83	46.5	Cloudy	
Portland, Oregon	30.34	770.6	30.44	773.2	39	3.9	71	NW	3	1.3		0	0			0	0	Clear	
Prescott, Arizona	24.71	627.6	30.07	763.8	30	— 1.1	16	NE				0	0			0	0	Clear	
Punta Rassa, Florida	30.02	762.5	30.04	763.0	64	17.8	83	E	8	3.6		8ck	5ks			0	0	Cloudy	
Red Bluff, California	29.67	753.6	30.03	762.7	58	14.4	76	N	18	8.0		1c	0	Calm		0	0	Clear	
Rochester, New York	29.05	737.9	29.68	753.4	46	7.8	76	S	7	3.1			10s		S	0.30	7.6	Cloudy	
Roseburg, Oregon	29.71	754.6	30.30	769.6	43	6.1	87	Calm	0	0			10s		Calm	0.01	0.3	Cloudy	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Sacramento, California	29.88	758.9	29.97	761.2	48	8.9	77	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
St. Louis, Missouri	29.15	740.4	29.73	755.1	40	4.4	64	W	4	1.8	.....	.....	10s	.....	Calm	Inap.	Inap.	Cloudy	
St. Marks, Florida	29.89	759.2	29.91	759.7	60	15.6	94	S	12	5.4	.....	8cs	0	SW	.....	0	0	Fair	
St. Paul, Minnesota	28.68	728.5	29.52	749.8	26	— 3.3	88	NW	12	5.8	.....	.....	10n	.....	N	0.04	1.0	Light snow	
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salt Lake City, Utah	25.82	655.8	30.15	765.8	24	— 4.4	61	N	4	1.8	.....	0	0	.....	.....	0	0	Clear	
San Antonio, Texas	29.29	744.0	29.89	759.2	44	6.7	76	N	2	0.9	.....	0	0	.....	.....	0	0	Clear	
San Diego, California	29.75	755.6	29.82	757.4	59	15.0	27	NE	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Sandusky, Ohio	29.98	736.1	29.65	753.1	41	5.0	58	SW	24	10.7	.....	.....	10ks	.....	SW	0.05	1.3	Cloudy	
Sandy Hook, New Jersey	29.84	757.9	29.86	758.4	50	10.0	78	SW	20	8.9	.....	5c	0	SW	.....	0.14	3.6	Fair	
San Francisco, California	29.88	758.9	29 94	760.5	57	13.9	75	N	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Santa Fé, New Mexico	23.09	586.5	29.63	752.6	25	— 3.9	75	SE	14	6.3	.....	.....	10s	.....	Calm	0	0	Threatening	
Savannah, Georgia	29.90	759.4	29.99	761.7	51	10.6	86	S	6	2.7	.....	1c	Fog	W	.....	0	0	Clear	
Shreveport, Louisiana	29.79	756.7	30.02	762.5	44	6.7	76	NW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Smithville, North Carolina	30.00	762.0	30.04	763.0	51	10.6	93	NE	2	0.9	.....	0	8ks	.....	S	0	0	Cloudy	
Springfield, Massachusetts	29.65	753.1	29.78	756.4	53	11.7	79	S	2	0.9	.....	.....	10ks	....	S	0.02	0.5	Cloudy	
Stanwix, Arizona	.....	.....	.....	.....	54	12.2	26	W	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Stockton, Texas	29.94	684.3	29.94	760.5	28	— 2.2	78	S	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Thatcher's Island, Mass	29.81	757.2	29.86	758.4	52	11.1	93	S	16	7.2	.....	.....	Fog	.....	S	1.12	28.4	Dense fog	
Toledo, Ohio	28.90	734.0	29.57	751.1	42	5.6	66	S	17	7.6	.....	.....	10s	.....	S	0.17	4.3	Cloudy	
Tucson, Arizona	27.41	696.2	29.96	761.0	38	3.3	45	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Tybee Island, Georgia	29.96	761.0	29.99	761.7	50	10.0	93	SW	4	1.8	.....	5c	Fog	SW	.....	0	0	Fair	
Umatilla, Oregon	30.24	768.1	.....	.....	23	— 5.0	60	SE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Vicksburg, Mississippi	29.70	754.4	29.96	761.0	46	7.8	69	NW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Virginia City, Montana	24.51	622.5	29.99	761.7	8	—13.3	78	SE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Visalia, California	29.62	752.3	30.00	762.0	39	3.9	91	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Washington, D. C	29.77	756.1	29.80	756.2	44	6.7	92	S	6	2.7	.....	2ck	0	S	.....	0.21	5.3	Fair	
Wickenburg, Arizona	.....	.....	.....	.....	42	5.6	27	N	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Wilmington, N. Carolina	29.94	760.5	30.03	762.7	46	7.8	92	Calm	0	0	.....	0	Fog	.....	Calm	0	0	Clear	
Winnemucca, Nevada	25.88	656.1	30.19	766.8	23	— 5.0	73	NE	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Wood's Holl, Mass	29.80	756.4	29.92	760.0	55	12.8	87	SW	10	4.5	.....	.....	10s	.....	SW	0.70	17.8	Cloudy	
Yankton, Dakota	28.59	726.2	29.94	760.5	23	— 5.0	86	NW	32	14.3	.....	.....	10s	.....	Calm	0.01	0.3	Cloudy	
Yuma, Arizona	29.09	754.1	29.85	758.2	62	16.7	36	SW	9	4.0	.....	0	0	.....	.....	0	0	Clear	
Sub-Series.																			
York Factory, B. A	30.25	768.3	30.31	769.9	14.0	—10.0	100	N	14	6.3	.....	.....	10n	.....	.....	.....	.....	Snowing	J. Fortescue, W. Wood.
Havana, Cuba, W. I	29.92	760.0	29.94	760.5	73	22.8	81	SE	3.6	1.6	.....	10c	4n	Calm	.....	0	0	Cloudy	Chas. Hasselbrink.
Kingston, Jamaica, W. I	30.09	764.3	30.10	764.5	78	25.6	86	Calm	0	0	.....	5c	5n	NW	SE	0	0	.....	James Gall.
Navassa, W. I	29.89	759.2	29.97	761.2	82.5	28.1	.....	E	15	6.7	.....	.....	.....	.....	.....	0	0	Fair	F. M Everett.
St. Thomas, W. I	.....	.....	.....	.....	82	27.8	71	N	2	0.9	.....	2c	2k	NE	.....	0	0	.....	G. O. Gellich.
Paramaribo, D. Guiana, S. A	.....	.....	29.98	761.5	84	28.9	79	E	.....	.....	2	5k	7ks	E	.....	0.400	10.16	Fair	C. J. Hering.
Batavia, Dutch Guiana, S. A	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Dr. H. Groot.
Medellin, Colombia, S. A	25.23	640.8	.....	.....	65.5	18.6	84	Calm	.....	.....	0	4cs	6s;ks	.....	.....	Inap.	Inap.	Cloudy	Thomas Herran.
Honolulu, Oahu, H. I	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Daniel Smith.
Makawao, Maui, H. I	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,860 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,560 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,550 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in. Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—.	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard, Mare Island, Cal.	29.96	761.0	56	13.3	56	13.3	46	ESE	6	2.7	.....	.....	2cs	.....	Calm	0	0	.....	.....	Fine.....	
Navy Yard, Pensacola, Fla.	29.95	760.7	.....	.....	61	16.1	94	Calm	0	0	.....	.....	3	.....	.....	0.18	4.6	.....	.....	D. clouds....	
Navy Yard, Portsmouth, N.H.	29.93	760.2	56	13.3	51	10.6	100	S	2	0.9	.....	.....	10	.....	.....	2.7	69.	.....	.....	Rain & fog...	
Naval Hospital, Yokohama, Japan.....	29.96	761.0	56	13.3	48	8.9	85	Calm	.....	.....	0	.....	4ks	.....	SSW	0	0	.....	.....	Threatening	
Adams. Punta Arenas, Patagonia.	29.96	761.0	52	11.1	52	11.1	86	E	.....	.....	0-1	.....	2	.....	E	0	0	None	.....	D. clouds....	
Alert, Yokohama, Japan.....	30.05	763.3	55	12.8	55	12.8	74	NW	.....	.....	1	.....	3	.....	NW	.....	.....	.....	.....	Hazy.....	
Alliance, Constantinople, Turkey.	29.88	758.9	64	17.8	51	10.6	86	N	.....	.....	1-1	.....	10	.....	N&E	.....	.....	.....	.....	Rainy.....	
Ashuelot. Changhai, China.....	30.46	773.7	46	7.8	42	5.6	74	NW	.....	.....	1	.....	10	.....	Calm	.....	.....	.....	.....	D. clouds....	
Canonicus, New Orleans, La.....	29.93	760.2	43	6.1	53	11.7	80	W	.....	.....	2	.....	3	.....	.....	.....	.....	.....	.....	Pleasant.....	
Colorado, New York, N. Y.....	29.89	759.2	50	10.0	50	10.0	72	SSW	15	6.7	.....	.....	4	.....	SSW	0.14	3.6	.....	.....	Fair.....	
Despatch, Constantinople, Turkey.	29.94	760.5	80	26.7	48	8.9	78	N	.....	.....	1	.....	10	.....	N	.....	.....	.....	.....	Rainy.....	
Franklin, Norfolk, Va.....	30.07	763.8	49	9.4	48	8.9	78	SW	7	3.1	.....	.....	1	.....	SW	0	0	.....	.....	Clear.....	
Guard, N. 39° 24', W. 19° 00'.....	29.84	757.9	67	19.4	66	18.9	94	SW	.....	.....	4	.....	7	.....	S&W	.....	.....	Moderate.	N&W	D. clouds....	
Lackawana, San Francisco, Cal.....	29.99	761.7	.....	.....	58	14.4	82	SSE	.....	.....	1	.....	1	.....	.....	.....	.....	.....	.....	D. clouds.....	
Marion, Smyrna, Turkey.....	29.72	754.9	65	18.3	53	11 7	86	WNW	.....	.....	1	.....	10	.....	Calm	Heavy	Heavy	Smooth	.....	D. clouds....	
Michigan, Erie, Pa.....	29.18	741.2	70	21.1	45	7.2	68	W	.....	.....	3	.....	10	.....	W	.....	.....	.....	.....	Cloudy.....	
Monongahela, Alexandria, Egypt.....	29.92	760.0	65	18.3	65	18.3	94	S&W	.....	.....	4-6	.....	kn	.....	.....	Light	Light	Smooth	.....	Showery.....	
New Hampshire, Port Royal, S.C.....	30.12	765.0	.....	.....	56	13.3	81	S	4	1.8	.....	.....	2	.....	NW	.....	.....	.....	.....	D. clouds.. ..	
Omaha. Callao, Peru.....	30.04	763.0	72	22.2	71	21.7	95	SE	4	1.8	.....	.....	8	.....	SE	0	0	Smooth	.....		
Onward, Callao, Peru.....	30.02†	762 5†	72	22.2	71	21.7	90	SE	.....	.....	2	.....	10	.....	.....	.....	.....	Long	W	D. clouds.....	
Ossipee. Norfolk, Va.....	30.01	762.2	65	18.3	49	9.4	78	SW	.....	.....	2	.....	0	.....	.....	.....	.....	.....	.....	Blue sky.....	
Palos, Shanghai, China.....	30.43	772.9	50	10.0	45	7.2	76	N	.....	.....	2	.....	2	.....	.....	.....	.....	.....	.....	Clear	
Plymouth, N. 31° 46', W. 67° 24'.....	30.22	767.6	74	23.3	72	22.2	90	SSE	.....	.....	3	.....	6	.....	.....	.....	.....	Smooth	SE	Pleasant.....	
Powhatan, Hampton Roads, Va.....	.....	.....	.....	.....	58	14.4	100	SW	10.8	4.8	.....	.....	1	.....	.....	0	0	.....	.....	Pleasant. ..	
Ranger, Shanghai, China.....	30.59	777.0	65	18.3	48	8.9	78	NNW	.....	.....	1	.....	8	.....	N	.....	.....	.....	.....	Cloudy.....	
Rio Bravo, Brownsville, Texas.....	29.82	757.4	.....	.....	55	12.8	93	NNW	.....	.....	2	.....	2	.....	NNW	.....	.....	.....	.....	D. clouds....	
Santee, Annapolis, Md.....	29.96	761.0	70	21.1	48	8.9	76	SW	.....	.....	3	.....	1	.....	.....	1.4	36.	.....	.....	Clear.....	
Saratoga, Hampton Roads, Va.....	.....	.....	.....	.....	56	13.3	94	SSW	.....	.....	4	.....	2	.....	Calm	Heavy	Heavy	.....	.....	Squally.....	
St. Louis, League Island, Pa	29.77	756.1	45	7.2	46	7.8	77	SSW	8	3.6	.....	.....	1	.....	SS W	0.22	5.6	.....	.....	Clear	
Swatara, Hampton Roads, Va.....	30.04	763.0	..	.....	49	9.4	78	SW	.....	.....	2	.....	0	.....	.....	.....	.....	.....	.....	Blue sky.....	
Tennessee, Yokohama, Japan.....	30.04	763.0	65	18.3	51	10.6	72	NNW	9	4.0	.....	.....	1	.....	Calm	0	0	Smooth	.....	Hazy.....	
Trenton, Villefranche, France.....	29.93	760.2	.....	.....	57	13.9	47	W	6	2.7	.....	.....	10	.....	Calm	0	0	.....	.....	D. clouds....	
Vandalia, Villefranche, France.,...	29.89†	759.2†	59	15.0	56	13.3	57	Calm	.....	.....	0	.....	10	.....	.....	.....	.....	.....	.....	D. clouds....	
Wabash, Boston, Mass.....	29.89	759.2	63	17.2	59	15.0	88	S	6	2.7	.....	.....	6	.....	S	1.45	36.8	.....	.....	D. clouds....	
Wyoming, Washington, D. C.....	30.28†	769.1†	.....	.....	45	7.2	.....	SW	.....	.....	2	.....	1	.....	S&W	.....	.....	.....	.....	Misty.....	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. The position given for the Plymouth is that at noon, local time, instead of that at 7:35 a. m., Washington time.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Character.	Direction from—		
PACIFIC MAIL S. S. CO. MARINE SERIES. Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska, Ulsaladdy W. T.			30.60†	777.2†	40	4.4		S			2		0					Clear	Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama, N. 9° 44′ 7″, W. 85° 36′ 30″			29.68	753.9	80	26.7	82	NW			2		3		N	Light	SW	Lightning	Capt. Howard.
S. S. City of Peking																			Lt. Z. L. Tanner, U.S.N.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio, N. 29° 53′, E. 128° 00′			30.24	768.1	61	16.1		N			6		10		NW	Short	NW	Overcast	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

NOTE.—The originals give the wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. † Aneroid; corrected for elevation, instrumental error not known.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.

S. S. Belgic																			Capt. John Metcalf.
S. S. Gaelic, N. 30° 00′, W. 162° 30′			29.82*	757.4*	67	19.4	??	W			6		kn		W	Very Heavy	W	Raining	Capt. W. H. Kidley
S. S. Oceanic, N. 44° 57′, W. 163° 23′			29.39	746.5	41	5.0	83	Var.			4–6		8		Calm	Confused		D. clouds	Capt. H. Parsell.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. *Aneriod.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andreasen.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig, N. 41° 39′, W. 63° 45′	S62½W	12.0	30.25	768.3	54.0	12.2	??	SSE			5		8		SE	Rough		Overcast	Capt. K. Undütsch.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio, N. 40° 33′, W. 6° 20′			29.19	741.4	61.0	16.1	86	SW			4		Fog		W	Smooth	WSW	Drizzling	
Baltimore, Md.			29.95	760.7	50.0	10.0	93	SE			2		k		SE			Threatening	Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, nor distinguish between upper and lower clouds.

UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Lo'wr	Upper.	Lower.	Character.	Direction From—		
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second	0—10.	0—10.	0—10.	From—	From—				
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, Liverpool			29.19*	741.4*	48	8.9	85	SE			7		10					Cloudy	Captain Sargent.
S. S. Ohio. N. 48° 58′, W. 45° 02′			30.19	766.8	48	8.9	85	WNW			4		1		NW	Light	NW	Clear	Captain Morrison.
S. S. Pennsylvania, N. 43° 25′, W. 49° 42′			30.49†	774.4†	42	5.6	83	NE			3		0			Light	NE	Clear	Captain Harris.

NOTE.—The originals give the barometer as read off; the wind-force by the scale 0 to 12. *Aneroid; correction for elevation applied, instrumental error not known.
† Corrected for temperature and elevation, instrumental error not known.

RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

S. S. Nederland																			Capt. Randle.
S. S. Switzerland, N. 40° 27′, W. 68° 40′			30.11*	764.8*	58	14.4		S	17	7.6			7		W	Heavy	SSE	D. clouds	Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

*Aneroid; regulated to standard at Antwerp.

ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

S. S. Hibernian																			Capt. W. Richardson.
S. S. Scandinavian																			

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, Kennebunk, Maine			29.90	759.4	51	10.6	100	SE	18	8.0			10n		SE			Raining	Capt. James Jorgensen.

NOTE.—The originals for the schooner Addie Fuller give the amount of cloudiness by the scale 0 to 4; the barometer as read off.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer. U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON NOVEMBER 28, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:58 P. M. PARIS mean time.

1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:18 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:38 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.

1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:28 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours	.....	.....	29.94	760.4	71.2	21.8	54	Calm	.....	.....	0	.....	8	.....	.....	0	0	Very cloudy	Michel.
Algiers	.....	.....	29.80	757.0	70.5	21.4	54	NW	.....	.....	1	.....	10	.....	.....	0	0	Covered	Peter.
La Calle	.....	.....	29.86	758.5	72.9	22.7	47	WSW	.....	.....	2	.....	7	.....	.....	0	0	Very cloudy	Fleury.
Tunis	.....	.....	29.84	757.9	67.6	19.8	49	W	.....	.....	2	.....	6	.....	.....	0	0	Cloudy	Jacques.
Sfax	.....	.....	29.91	759.7	60.8	16.0	.....	W	.....	.....	2	.....	1	.....	.....	0	0	Very fair	Husson.
Saida	.....	.....	30.04	762.9	65.8	18.8	37	SSE	.....	.....	2	.....	2	.....	.....	0	0	Fair	Millot.
Tebessa	.....	.....	29.90	759.5	.....	.....	.....	W	.....	.....	4	.....	2	.....	.....	.....	.....	Fair	Bourgeois.
Geriville	.....	.....	30.04	762.9	54.9	12.7	83	W	.....	.....	3	.....	4	.....	.....	0	0	Cloudy	Lemaillot.
Laghouat	.....	.....	30.03	762.7	68.0	20.0	40	W	.....	.....	4	.....	6	.....	.....	0	0	Cloudy	Guyot.
Biskra	.....	.....	29.97	761.1	70.0	21.1	17	NW	.....	.....	1	.....	5	.....	.....	0	0	Cloudy.	Kuntz.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890 ? meters, or 2,919.9 ? feet; Tebessa, 1,088 ? m., or 3,569.4 ? ft.; Geriville, 1,360 ? m.; or 4,461.7 ? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

Agram	29.07	738.4	29.63	752.5	44.2	6.8	88	NE	.....	.....	2	.....	6	.....	.....	0.236	6.0	.....	Prof. Ivan Stozir
Cracow, I. R. Observatory	28.81	731.7	29.59	751.5	38.8	3.8	83	NE	.....	.....	1	.....	9	.....	.....	0	0	.....	Dr. Wierzbiski.
Eperies	28.81	731.8	29.72	754.9	34.3	1.3	87	S	.....	.....	3	.....	10	.....	.....	0	0	.....	Julius Mikolik.
Gratz	28.35	720.0	29.61	752.0	41.0	5.0	75	S	.....	.....	2	.....	1	.....	.....	0	0	.....	Andreas Rospini.
Hermannstadt	28.33	719.5	29.82	757.4	28.9	—1.7	86	SE	.....	.....	3	.....	0	.....	.....	0	0	.....	Prof. Reissenberger.
Kremsmünster	28.13	714.4	29.48	748.9	38.5	3.6	97	NE	.....	.....	1	.....	10	.....	.....	0.488	12.4	.....	Prof. C. Wagner.
Lemberg	28.65	727.6	29.65	753.2	36.9	2.7	67	S	.....	.....	2	.....	0	.....	.....	0	0	.....	Dr. T. Stanecki.
Pola	29.50	749.4	29.61	752.2	51.3	10.7	100	SE	.....	.....	1	.....	10s	.....	.....	0.591	14.99	Foggy	I.R.HydrographicOffice
Szathmar	29.28	743.7	29.75	755.7	40.5	4.7	53	SE	.....	.....	3	.....	2	.....	.....	0	0	.....	Johann Tamas, S. J.
Szegedin	29.43	747.6	29.72	754.9	38.1	3.4	80	SE	.....	.....	1	.....	10	.....	.....	0	0	.....	Karl Stancel.
Trieste	29.56	750.9	29.67	753.5	48.4	9.1	98	Calm	.....	.....	0	.....	10	.....	.....	1.291	32.8	Raining	P. Busin.
Vienna	28.86	733.1	29.58	751.2	36.7	2.6	96	SSE	.....	.....	1	.....	.....	.....	.....	0.146	3.7	.....	I. R. Central Met. Obs'y
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time, and at Trieste at 7 a. m. of the following day. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

Arlon	27.04	709.8	29.45	748.0	44.4	6.9	86	W	.....	.....	1	.....	9	.....	.....	0	0	.....	Prof. M. Passau.
Brussels	29.17	741.0	29.37	746.0	48.7	9.3	77	SW	.....	.....	4	1	4	WSW	S	0.047	1.20	.....	Royal Observatory.
Furnes	29.32	744.6	29.34	745.2	44.4	6.9	97	SW	.....	.....	2	.....	8	.....	.....	0.031	0.8	.....	M. E. de Cae.
Maeseyck	29.24	742.7	29.37	746.0	47.7	8.7	83	SW	.....	.....	0	.....	5	.....	.....	0	0	.....	M. Pierrot.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	28.76	730.5	28.86	733.0	38.6	3.7	.....	S	8	3.6	.....	.....	5	.....	.....	1.010	25.65	Blue sky.....	W. Boswell.
Ardrossan	28.86	733.0	28.88	733.5	44	6.7	.....	SW	.....	.....	5	.....	8	.....	.....	.....	.....	Overcast.....	William McNeil.
Armagh, Observatory	.....	.....	28.98	736.1	41.2	5.1	.....	SSW	16	8.0	.....	.....	2	.....	.....	.....	.....	D. clouds.....	S. Call, for Dr. Robinson
Bidston, (Liverpool Obs.)	.....	.....	29.10	739.1	45.0	7.2	.....	SW	17	7.6	.....	.....	3	.....	.....	.....	.....	Blue sky.....	John Hartnup.
Birr Castle, (Parsonstown)	.....	.....	29.07	738.4	41.1	5.1	.....	SSW	.....	.....	2	.....	7	.....	.....	.....	.....	Showery.....	J. L. E. Dreyer.
Bradford, Yorkshire	28.61	726.7	29.01	736.8	42.1	5.6	.....	SW	.....	.....	3	.....	6	.....	.....	0.13	3.3	D. clouds.....	J. McLandsborough.
Bridgetown, (Barbados)	29.92	760.0	29.95	760.7	80.0	26.7	.....	NE	.....	.....	2	.....	3	.....	.....	.....	.....	D. clouds.....	Pvt. G. W. Roberts, A.
Cambridge, Observatory	.....	.....	29.24	742.7	46.0	7.8	.....	SW	.....	.....	1	.....	1	.....	.....	.....	.....	D. clouds.....	H. Todd. [H.O.
Cardington	.....	.....	29.25	742.9	43.0	6.1	.....	W	.....	.....	2	.....	1	.....	.....	.....	.....	Blue sky.....	John McLaren.
Chatham, School M. E	29.17	740.9	29.30	744.2	49.2	9.6	.....	SW	.....	.....	3	.....	3	.....	.....	.....	.....	Blue sky.....	Lt. W. G. Morris, R. E.
Dartmoor	27.89	708.4	29.37	746.0	40.0	4.4	.....	W	.....	.....	4	.....	5	.....	.....	.....	.....	Showery.....	Alexander Watt.
Davos Platz (Switzerland)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Francis Redford, M. A.
Donaghadee	28.93	734.8	28.96	735.6	40	4.4	.....	WSW	.....	.....	3	.....	8	.....	.....	.....	.....	D. clouds.....	J. Mac Gowan.
Dover	29.29	744.0	29.31	744.5	47	8.3	.....	WSW	.....	.....	4	.....	4	.....	.....	.....	.....	½ clouded...	J. Costello.
Eccles, (near Manchester)	.....	.....	29.12	739.6	43.1	6.2	.....	S	1.2	0.5	.....	.....	5	.....	.....	.....	.....	D. clouds	Thomas Mackereth.
Falmouth, Observatory	29.10	739.1	29.32	744.7	48.0	8.9	.....	SW	.....	.....	4	.....	6	.....	.....	.....	.....	Overcast.....	The Staff.
Fort Napier, (Natal)	27.80	706.1	30.02	762.5	64.9	18.3	.....	E	.....	.....	2	.....	10	.....	.....	.....	.....	Overcast.....	Pvt. G. Salmon, A.H.C.
Free Town, (Sierra Leone)	.....	.....	29.87	758.7	87.0	30.6	.....	W	.....	.....	0	.....	3	.....	.....	.....	.....	D. clouds.....	
Galway, Queen's College	.....	.....	.....	.....	43	6.1	.....	NW	.....	.....	2	.....	8	.....	.....	.....	.....	Raining.....	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	29.86	758.4	29.91	759.7	61.5	16.4	.....	W	.....	.....	6	.....	10	.....	.....	.....	.....	Showery.....	Corpl. C. Aitken, A.H.C.
Glasgow, Observatory	28.69	728.7	28.89	733.8	41.8	5.4	.....	SSW	.....	.....	4	.....	10	.....	.....	.....	.....	Gloomy.....	D. G. Maclean.
Great Yarmouth	29.24	742.7	29.24	742.7	42	5.6	.....	WSW	.....	.....	3	.....	3	.....	.....	.....	.....	Misty.....	G. T. Watson.
Greenwich, Royal Obs'y	29.11	739.4	29.28	743.7	46.6	8.1	.....	WSW	.....	.....	4	.....	1	.....	.....	.....	.....	Blue sky.....	The Staff, for G. B. Airy.
Guernsey	29.15	740.4	29.37	746.0	50	10.0	.....	WSW	.....	.....	5	.....	5	.....	.....	.....	.....	Squally.....	Dr. S. E. Hoskins, F.R.S.
Helston	.....	.....	29.32	744.7	50	10.0	.....	SW	.....	.....	4	.....	3	.....	.....	0.47	11.9	D. clouds.....	M. P. Moyle.
Holyhead	29.04	737.6	29.09	738.9	44	6.7	.....	SW	.....	.....	5	.....	3	.....	.....	.....	.....	D. clouds.....	John Tilston.
Jersey	29.14	740.1	29.44	747.8	48.5	9.2	.....	W	.....	.....	6	.....	8	.....	.....	.....	.....	Hail-squalls	J. Fisher.
Kew, Observatory	.....	.....	29.28	743.7	46.6	8.1	.....	SW	16	7.2	.....	.....	2	.....	.....	.....	.....	D. clouds.....	The Staff.
Kingstown	29.03	737.3	29.06	738.1	42	5.6	.....	WSW	.....	.....	5	.....	5	.....	.....	.....	.....	D. clouds.....	George Mitchell.
Leicester, Museum	.....	.....	29.18	741.2	45.5	7.5	.....	SW	.....	.....	3	.....	6	.....	.....	.....	.....	D. clouds.....	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.77	756.1	29.85	758.2	66.0	18.9	.....	W	.....	.....	3	.....	8	.....	.....	.....	.....	D. clouds.....	Sgt. C. Arbelter, A.H.C.
Nairn	28.70	729.0	28.79	731.3	36	2.2	.....	W	.....	.....	1	.....	5	.....	.....	.....	.....	½ clouded...	W. D. Penny.
Nassau, (Bahamas)	.....	.....	30.03	762.7	72.5	22.5	.....	SE	.....	.....	1	.....	10	.....	.....	Blank	Blank	Overcast.....	C. S. Duncombe.
Nottingham, Observatory	28.98	736.1	29.17	740.9	42.1	5.6	.....	SSW	.....	.....	4	.....	5c	.....	WSW	0	0	D. clouds.....	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	28.66	728.0	29.18	741.2	44.0	6.7	.....	SW	.....	.....	4	.....	9	.....	.....	.....	.....	D. clouds.....	Rev. Stephen Whitty
Oxford, Radcliffe Obs'y	.....	.....	29.25	742.9	45	7.2	.....	SW	.....	.....	2	.....	1	.....	.....	.....	.....	Blue sky.....	F. Lucas
Plymouth	29.24	744.7	29.32	744.7	47.1	8.4	.....	WSW	.....	.....	4	.....	6	.....	.....	.....	.....	D. clouds.....	John Merrifield.
Roche's Point	29.12	739.6	29.17	740.9	46	7.8	.....	W	.....	.....	3	.....	5	.....	.....	.....	.....	Showery.....	W. Kennedy.
Saint Ann's Head	29.02	737.1	29.18	741.2	47	8.3	.....	W	.....	.....	5	.....	3	.....	.....	.....	.....	Squally.....	John C. Walker.
Sandwick Manse, (Orkneys.)	.....	.....	28.77	730.7	37.5	3.1	.....	S	6	2.7	.....	.....	0	.....	.....	.....	.....	Blue sky.....	Rev. C. Clouston, LL. D
Scutari, Cemetery, (Turkey)	.....	.....	29.85	758.2	49.0	9.4	.....	SW	.....	.....	1	.....	5	.....	.....	.....	.....	D. clouds.....	Sergt. W. H. Lyne.
Sheffield	28.85	732.8	29.09	738.9	42.1	5.6	.....	SW	.....	.....	4	.....	4	.....	.....	0.13	3.3	Blue sky.....	W. F. Cooper.
Silloth Rectory	28.95	735.3	28.98	736.1	45.4	7.4	78	NW	.....	.....	4	.....	4	.....	.....	0.260	6.60	D. clouds.....	Rev. F. Redford, M. A.
Stonyhurst, Observatory	.....	.....	.....	.....	43.0	6.1	.....	SW	.....	.....	4	.....	7	.....	.....	.....	.....	D. clouds.....	Rev. S. J. Perry.
Stornoway, Lews C., (Hebr.)	.....	.....	28.67	728.2	40	4.4	.....	S	.....	.....	4	.....	4	.....	.....	.....	.....	Gloomy.....	John Smith.
Stratfield Turgiss	29.08	738.6	29.30	744.2	44.7	7.1	.....	W	.....	.....	1	.....	3	.....	.....	.....	.....	Blue sky.....	Rev. C. H. Griffith, F.M.S.
Thurso	.....	.....	28.75	730.2	38	3.3	.....	S	.....	.....	1	.....	4	.....	.....	.....	.....	D. clouds.....	John Trotter.
Truro, Royal Institution	.....	.....	29.34	745.2	50	10.0	.....	SW	.....	.....	4	.....	10	.....	.....	.....	.....	Raining.....	W. Newcombe.
Valencia, Observatory	.....	.....	29.06	738 1	46.0	7.8	.....	SW	27	12.1	.....	.....	10	.....	.....	.....	.....	D. clouds.....	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Henry Mercer.
Cape Good Hope, Obs'y	30.07	763.8	30.11	764.8	72.7	22.6	50	SSE	28	12.5	.....	6	8	.....	.....	.....	.....	.....	The Staff, for E. J. Stone.
Hobart Town, (Tasmania)	.....	.....	29.52	749.8	63.0	17.2	72	NW	.....	.....	3	.....	4k	.....	.....	0	0	.....	Francis Abbott, F.R.A.S.
Leith, Restairig Park	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Andrew Gibb.
Mauritius, Observatory	29.80	756.9	29.99	761.7	78.8	26.0	69	SSE	5.0	2.2	.....	0	9	.....	ESE	2.01	51.1	Cloudy.....	C. Meldrum.
Melbourne, Observatory	29.74	755.4	29.84	757.9	58.0	14.4	65	S	6	2.7	.....	.....	2	.....	.....	0	0	Very fine.....	R. L. J. Ellery.
Monach L't-house, (Hebrides)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Youngclause.
North Unst, (Shetland Is.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Robert Burnet.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., *following day, local time.* The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m.

Marine Series. Vessels.	Sea or swell. Height scale 0—9	Sea or swell. Direction from—	Weather.	Observer.
S. S. Algeria	.....	.....	.....	Capt. W. Watson.
S. S. Batavia, N. 43° 25', W. 47° 50'	3	NNE	Blue sky.....	Capt. J. E. Mouland.
Ship Camperdown	.....	.....	.....	Capt. A. T. Miller.
Brig Catherine	.....	.....	.....	Capt. Adam Smith.
Barque Celeste	.....	.....	.....	Capt. D. F. McKechnie.
S. S. Hibernia	.....	.....	.....	Capt. W. R. Cato
Barque Maroon	.....	.....	.....	Capt. A. T. Brown.
Ship Mikado	.....	.....	.....	Capt. C. C. Prehn.
S. S. Seine	.....	.....	.....	Capt. H. Manning.
Barque Sorata	.....	.....	.....	Capt. Jas. J. Price.
Schooner Traveller	.....	.....	.....	Capt. Alex Simpson
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.

Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
San José	26.24	666.5			62.6	17.0	98	E			1	3cs				Blank	Blank		Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.17	740.8	29.21	742.0	42.3	5.7	96	S			4		10					Foggy
Fanöe	29.12	739.7	29.14	740.2	44.1	6.7	83	W			4		9					
Godthaab, (Greenland)	29.95	760.8	30.00	761.9	21.6	— 5.8	77	NNE			2		3					
Stykkisholm, (Iceland)	29.16	740.7	29.21	741.8	28.2	— 2.1	100	NE			9		10					Snowing
Thorshavn, (Faröe)	28.76	730.5	28.80	731.4	41.9	5.5	80	ESE			4		5					Hailing
Vestervig	28.89	733.9	29.06	738.2	40.6	4.8	94	WSW			6		6					

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

Alençon, Normal School	28.98	736.2	29.54	750.2	50.0	10	74	W			1		5		NE	0.496	12.6	Cloudy	Collignon, Director.
Amiens, Normal School	29.28	743.7	29.39	746.5	49.6	9.8	95	W			2		0			0.08	2.	Clear.	Bonvarne, Director.
Avignon, Normal School	29.47	748.4	29.54	750.4	48.7	9.3	97	N			1		10			0.740	18.8	Raining	Mr. Giraud, Director.
Bar-sur-Seine	28.93	734.8	29.49	749.1	50.4	10.2	78	WSW			2		8n		SW	0.512	13.0	Very cloudy	C. Saillard.
Beaumette Obs'y (Angers)	29.35	745.4	29.47	748.4	51.6	10.9	84	SW	6.5	2.9					WSW	0.043	1.1		Albert Cheux.
Beauvais	29.18	741.1	29.46	748.3	48 0	8.9	74	W			2		5		WNW	0.12	3.	Cloudy	Normal School.
Besançon	28.62	727.0	29.51	749.6	50.7	10.4	94	S			2		8		SW	1.160	29.2	Very cloudy	Normal School.
Bourg-en-Bresse	28.67	728.2	29.58	751.2	50.2	10.1	92	S			2		10n		S	0.126	3.2	Covered	Normal School.
Bourges, Normal School	28.83	732.2	29.58	751.2	50.7	10.4	95	SW			2		2		SE	0.327	8.3	Slightly cl'dy	A. Wagner, Director.
Brest, Naval Observatory	29.19	741.4	29.41	746.9	51.3	10.7	76	SW			4		10		SW	0.285	7.25	Raining	The Staff.
Carcassonne, Normal School	29.22	742.1	29.63	752.7	45.7	7.6	94	SW			2		10		SW	0	0	Covered	Vateau, Director.
Caen	29.36	745.8	29.44	747.7	51.1	10.6	72	NE			2		2		NE	0.244	6.2	Slightly cl'dy	Normal School.
Chartres, Normal School	28.80	731.5	29.35	745.4	58.3	14.6	61	W			2		2		E	0.59	15.		Lequin, Director.
Châlons-sur-Marne, N. Sch'l	29.13	740.0	29.45	748.0	50.9	10.5	95	Calm			0		5k			0.315	8.0	Cloudy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.18	715.8	29.50	749.4	57.2	14.0	71	W			2		5		W	0.087	2.2	Cloudy	Alluard, Director.
Commercy, Normal School	28.61	726.7	29 50	749.2	48.2	9	86	W			2		5		W	0.59	15.	Cloudy	Dr. Goulet, Director.
Commune de Grèasque*	28.42	721.8	29.56	750.8	46.9	8.3	97	NE			2		10		NE	0.071	1.8	Covered	M. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	29.34	745.2	29.55	750.6	52.9	11.6	73	NW			2		2		NW	0.236	6.0	Slightly cl'dy	Mouillot, Director.
Le Mans, Normal School	29.20	741.6	29.50	749.4	48.0	8.9	76	NW			4		2		N	1.10	28.	Slightly cl'dy	Poirrier, Director.
Lons-Le-Saulnier, N. School	28.60	726.5	29.51	749.5	49.5	9.7	97	SW			1		10			0.252	6.4	Raining	Pin, Director.
Lorient, Naval Observatory	29.41	746.9	29.50	749.4	52.9	11.6	65	W			3		5		W	0.142	3.6	⅛ covered	T. Carré, Director.
Mâcon, Normal School	28.82	731.9	29.50	749.3	47.7	8.7	88	Calm			0		10			0	0	Covered	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	28.42	721.9	29.46	748.3	48.2	9	94	N					10		S	0.39	10.	Covered	Normal School.
Nismes, Normal School	29.34	745.3	29.54	750.4	55.0	12.8	95	S			1		5		N	0.768	19.50	Partly cl'dy.	Boyer, Director.
Orleans, Normal School	29.14	740.2	29.52	749.8	50.0	10	76	W			2		5		W	0.47	12.	Cloudy	Bernard, Director.
Paris, Observatory	29.22	742.3	29.46	748.3	50.0	10.0	63	WSW			1		6			0.198	5.03	Cloudy	National Observatory.
Privas	28.47	723.2	29.52	749.7	59	15	92	S			2		10		S	0.12	3.	Covered	Normal School
Rochefort, Naval Obs'y	29.56	750.7	29.59	751.5	54.7	12.6	86	WNW			3		8		WNW	0.04	1.	¾ covered	Lt. Decante, Director.
Rouen, Normal School	29.35	745.5	29.44	747.7	51.6	10.9	63	SW			2		5		W	0.098	2.5	Cloudy	F. Lucard, Director.
Tarbes, Normal School																			T. Hugues, Director.
Villefranche	28.81	731.7	29.52	749.9	50.0	10	97	SE			1		10			0.244	6.2	Covered	Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.80	757.0	29.83	757.7	81.0	27.2										0.12	3.		L'Abbé Marchési.
Marseilles, Observatory			29.51	749.6	51.3	10.7	93	NE			1		10			0.218	5.40	Raining	The Staff.
Mont-Louis	24.49	622.1	29.81	757.1	44.6	7.0	58	W	3.7	1.67			7		WSW	0.028	0.7		Mr. Falguère.
Nice			29.52	749.9	52.3	11.3	92	N					10		NE	0.197	5.0	Raining	Dr. A. Niepce.
Paris, Montsouris Obs'y	29.18	741.2	29.46	748.2	50.0	10.0	60	W			2–3		3		SW	0.236	6.0		Marié Davy, Director.
Perpignan			29.56	750.8	61.0	16.1	65	NW	29.8	13.33			1		NW	0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.																			M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.19	563.6			30.2	— 1.0		W			4–6		10			0.567	14.4	Snowy	Gen'l de Nansouty.
Saint Maur, (near Paris)	29.30	744.3	29.47	748.5	51.3	10.7	93	WSW			2		2	W		0	0		E. Renou.
Toulouse, Observatory	28.93	734.8	29.54	752.9	56.7	13.7	86	W			4		9			0.183	4.65	Raining	The Staff.
Tours	29 34	745.1	29.53	750.1	51.4	10.8	67	WNW			1		5		W	0.161	4.1		C. Marquet.
Versailles, (near Paris)			29.47	748 6	49.6	9.8	66	WNW			2		5			0.233	5.93	Cloudy	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.47	773.8	30.49	774.4	41.0	5.0	71	N	7.4	3.3			10kn			0	0	Covered	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; for Montsouris, the barometer reduced to freezing but not to sea-level. At Mirecourt the cloud direction is apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Grèasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instru-m'tal error and temperature. Inches.	Barometer. Corrected for instru-m'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg																			Prof. Dr. Hoh.
Berlin	29.20	741.7	29.37	746.0	46.4	8.0	61	NW			2		8			0.049	1.25		Prof. Arndt.
Breslau	28.92	734.5	29.44	747.7	41.2	5.1	79	SSE			3		10			0	0		Royal University Obs'y.
Carlsruhe	29.00	736.5	29.41	747.1	50.4	10.2	96	S			1		10			0.803	20.4		Albert Senz.
Cassel	28.80	731.6	29.40	746.7	48.6	9.2	64	W			2		7	S		0.132	3.36		Dr. H. Möhl.
Crefeld	29.19	741.5	29.35	745.5	48.0	8.9	74	SW			4		2			0.08	2.		Director Lose.
Emden	29.32	744.8	29.36	745.7	45.0	7.2	82	W			2		0			0	0		Prof. Prestel.
Frankfort on the Main	29.07	738.4	29.43	747.6	49.6	9.8		WSW			1		9			0.287	7.3		Physical Society.
Friedrichshafen	28.06	712.8	29.48	748.9	50.0	10.0	84	WSW			3		10	W		0.622	15.8	Raining	M. Wilhelm.
Hamburg	29.25	742.9	29.32	744.7	45.5	7.5	88	WSW			3		10ks			0.063	1.6	Fair	Captain F. Hegemann.
Kiel	29.24	742.8	29.26	743.3	44.2	6.8	92	WSW			4		10			0.116	2.95		Prof. G. Karsten.
Königsberg, (Prussia)	29.48	748.8	29.56	750.8	35.6	2.0	68	SE										Clear	Prof. E. Luther.
Köslin			29.31	744.4	35.6	2.0		SE			6		4			0	0		H. Müller.
Leipsic, Observatory	28.97	735.9	29.39	746.5	47.8	8.8	98	W			1		10	W		0.043	1.1		Prof. Bruhns.
Memel, Naval School	29.59	751.5	29.63	752.7	34.7	1.5	74	SSE			3		9ks						Reinbrecht von Skalweit.
Neufahrwasser	29.48	748.7	29.49	749.1	35.1	1.7	77	SSE			5		5			0	0		A. Lothes.
Posen	29.16	740.7	29.46	748.3	38.3	3.5	91	SSE			3–4		10					Cloudy	Dr. Magener.
Strassburg Obs., (in Alsace	28.91	734.2	29.45	748.1	48.2	9.0	95	NW			3		10			0.455	11.54	Raining	Dr. Schur.
Stuttgart	28.48	723.5	29.41	747.1	50.9	10.5	94	N			1		10			0.346	8.8	Rainy	Prof. Schoder.
Treves, (Trier)	28.82	732.1	29.34	745.1	48.2	9.0	82	W			4		10			0.018	0.45	Foggy	Prof. Flesch.
Weissenburg, (Bavaria)	27.92	709.2	29.40	746.8	51.6	10.9	85	WSW	4	2			10		W	0.264	6.7	Light rain	Dr. Von Bebber.
Wustrow, Naval School	29.27	743.4	29.31	744.5	41.2	5.1	92	SE			2		8					Cloudy	E. F. Schütz.
German Naval Series.																			

NOTE.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet: Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4, Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens

Athens	29.49	749.0	29.88	759.0	55.9	13.3		NE										½ Clear	Dr. J. F. J. Schmidt.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and wind-force; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.94	760.4	29.99	761.7	76.9	24.9	69	WSW	13.0?	5.8?			0			0	0	Blue sky	
Deesa	29.51	749.6	29.99	761.8	79.3	26.3	29	NNW					1	W		0	0	D. clouds	
Bombay	29.86	758.3	29.89	759.3	82.3	27.9	77	NNW	16.0	7.2			0			0	0	Blue sky	
Poona	27.88	708.2	29.87	758.7	82.4	28.0	59	W					7	SW	S			Thunder-storm	
Lahore	29.30	744.1	30.07	763.8	61.6	16.4	80	Calm	0.6	0.3			0			0	0	Blue sky	
Belgaum	27.39	695.6	29.91	759.8	79.7	26.5	60	Calm					3		SE	0	0	D. clouds	
Bangalore																			
Roorkee	29.06	738.2	29.99	761.8	64.2	17.9	63	NW	3.4	1.5			0			0	0		
Agra	29.40	746.8	29.98	761.6	69.7	20.9	66	NW								0	0		
Trichinopoly																			
Nagpur	28.88	733.6	29.93	760.1	79.9	26.6	58	Calm	2.3	1.0			0			0	0	Blue sky	
Madras																			
Lucknow	29.60	751.7	29.98	761.5	69.4	20.8	47	NW	2.6	1.2			0			0	0	Blue sky	
Allahabad	29.64	752.9	29.96	761.0	68.9	20.5	71	Calm	1.6	0.7			0			0	0	Blue sky	
Patna	29.77	756.1	29.95	760.8	76.1	24.5	53	W	1.2	0.5			0			0	0	Blue sky	
Hazaribagh	27.92	709.0	29.96	761.2	70.6	21.4	56	W	6.7	3.0			1			0	0	Blue sky	
Cuttack	29.89	759.1	29.97	761.2	79.5	26.4	68	S	1.8	0.8			0			0	0	Blue sky	
Calcutta (Alipore)	29.93	760 1	29.95	760.6	76.6	24.8	78	WNW	2.0	0.9			0			0	0	Blue sky	
Goalpara	29.51	749.6	29.91	759.7	71.6	22.0	84	S	1.0	0.4			5		SW	0	0	D. clouds	
Chittagong	29.89	759.2	29.99	761.6	74.8	23.8	88	W	2.9	1.3			0			0	0	Blue sky	
Sibsagar	29.64	753.0	29.99	761.8	64.2	17.9	96	ENE	2.6	1.2			10			0.91	23.1	Raining	
Rangoon																			
Jubbulpore	28.60	726.3	29.98	761.4	75.8	24.3	65	NW	0.8	0.4			0			0	0	Blue sky	

NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.8 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	21.75	552.5	29.71	754.5	30.4	— 0.9	100	NE			2		10			0	0		Ab. Dom. Mongini.
Stelvio	21.75	552.5	29.72	755.0	27.7	— 2.4		WNW			1		0			0.059	1.5		Signora Ernesta Manfredi.
Udine	29.22	742.1	29.63	752.7	45.7	7.6	75	NW	0.7	0 3			10			0.063	1.6		Prof. Giovanni Clodig.
Padua	29.53	750.0	29.64	752.8	43.7	6.5	66	NW	4.3	1.9			10			0.028	0.7		Prof. Dott. Lorenzoni.
Vicenza	29.45	748.1	29.65	753.1	41.0	5.0	90	WSW	0	0			9			0	0		Conte Alm. Da Schio.
Verona	29.45	748.0	29.67	753.7	45.9	7.7	77	W	0	0			10			0	0		Dott. B. Bertoncelli.
Bergamo	28.82	719.3	29.66	753.4	39.6	4.2	71	S			1		10			0.102	2.6		Prof. Trionfini Carlo.
Domodossola	28.63	727.1	29.67	753.7	41.0	5.0	76	N			2		10			0	0		Prof. Giuseppe Calza.
Milan	29.15	740.4	29.68	753.9	38.8	3.8		NNE			1		10	NNW		0.091	2.3		Ab. Gio. Capelli.
Pavia	29.32	744.7	29.67	753.7	39.2	4.0	91	NE			2		10			0.059	1.5		Prof. Gio. Cantoni.
Moncalieri	28.76	730.4	29.68	753.8	37.6	3.1	78	NNW	0.7	0.3			10			0.118	3.0		Prof. P. F. Denza.
Mondovi	27.72	704.1	29.65	753.2	35.2	1.8	69	NW			2		10			0	0		Prof. D. C. Bruno.
Porto Maurizio	29.33	744.9	29.55	750.6	49.1	9.5	85	N			2		10			0.217	5.5		Prof. L. Vassallo.
Genoa	29.40	746.8	29.57	751.1	46.4	8.0	78	N	8.1	3.6			10	SE		0.709	18.0		Prof. G. M. Garibaldi.
Placenza	29.41	747.1	29.67	753.7	37.2	2.9	93	E	1.8	0.8			10			0	0		Dott. G. Manzi.
Parma	29.34	745.3	29.67	753.6	39.4	4.1	93	NW			2		10			0.059	1.5		Prof. P. Pigorini.
Florence	29.29	744.0	29.55	750 6	46.8	8.2	97	W			2		10			0.524	13.3		Cav. F Meucci.
Leghorn	29.47	748.6	29.56	750.8	52.7	11.5	96	NE	9.4	4.2			10			0.646	16.4		Prof. P. Monte.
Siena	28.35	720.0	29.57	751.0	51.8	11.0	99	SSE	0.7	0.3			10			1.315	33.4		Prof. L. Toscani.
Urbino	29.10	713.8	29.67	753.7	40.3	4.6	97	NE			2		10			0.220	5.6		Prof. P. Serpieri.
Pesaro	29.61	752.2	29.67	753 5	43.0	6.1	92	W	6.3	2.8			10	W		0.701	17.8		Prof. Luigi Guidi.
Ancona	29.54	750.4	29.65	753.1	46.8	8.2	87	W			4		10			0.260	6.6		Prof. F. DeBosis.
Grosseto	29.48	748.9	29.60	751.8	57.2	14.0	95	ESE			2		10	S		0.256	6.5		Avv. P. Ponticelli.
Rome	29.47	748.4	29.64	752.9	57.6	14.2	92	S	11.2	5.0			10			0.591	15.0		Prof. P. A Secchi.
Naples, O. U	29.56	750.7	29.76	755.8	61.9	16.6	75	SSW			4		10	W		0.185	4.7		Prof. L. Palmieri.
Lecce					55.8	13.2	71	S	15.4	6.9			9			0.024	0.6		Prof. C. De Giorgi.
Cosenza					56.8	13.8	75	SE	0.7	0.3			10			0	0		Prof. F. D. Conti.
Cagliari																			Prof. A. Pacinotti.
Riposto, (Sicily)					59.0	15.0	73	NW			2		3			0	0		Prof. F. Cafiero.
Palermo	29.47	748.4	29.72	754.9	64.6	18.1	48	SW	22.4	10.0			7			0	0		Prof. G. Cacciatore.
Caltanissetta	27.85	707.4	29.80	757.0	56.3	13.5	71	SSW			4		5			0.016	0.4		Prof. A. Pagani.
Syracuse	29.70	754.3	29.77	756.2	58.1	14.5	79	SW			4		8	SW		0	0		Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.20	741.7	29.76	755.8	58.3	14.6	84	SW	6.3	2.8			10			0.622	15.8		Prof. F. Brioschi.

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,543.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Siena, 348.5 m., or 1,143.3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Tokei (Yeddo)																			The Observatory.
Tokei (Yeddo) University	29.99	761.7	30.09	764.3	45	7.2	46	N	12	5.4			4s			0	0	Fair	Prof P. V. Veeder.

MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Aguascalientes																			I. N. Marin, M. D.
Córdoba																			C. Peña, M. D.
Cuernavaca																			L. Castillo, A. E.
Guadalajara																			Prof. L. Perez.
Guanajuato																			Prof. V. Fernandez.
Leon																			Prof. M. Leal.
Mexico	23.06	585.8	30.15	765.8	51.8	11.0	83	Calm	0	0			10ks			1.05	26.2	Covered	Central Observatory.
Orizaba																			N. N.
Orizaba																			I. Orozco, M. D.
Pabellon, (Aguascalts)																			M. V. de Leon, M. E.
Puebla																			Prof. B. Gonzalez.
Toluca																			Prof. C. Velazquez.
Tlacotalpam																			Prof. F. R. Bayly.
San Luis Potosi																			G. Barroeta, M. D.
Vera-Cruz																			Prof. J. Rossell.
Zacatecas																			J. A. Bonilla, M. E.
Puebla, (Catholic Institute)																			P. Spina. [M. M. D. D.
Morelia																			M. Tena, F. L. Páramo

Note.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,300 m., or 7,512.9 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,921.4 m., or 6,303.8 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m,, or 8,611.8 ft.; San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	29.35	745.4	29.35	745.4	47.1	8.4		SSW			4					0.122	3.1		
Groningen	29.23	742.5	29.29	743.9	45.0	7.2		WSW			2					0.028	0.7		
Helder	29.25	743.0	29.25	743.0	47.1	8.4		SW			4					0	0		
Hellevoetsluis			29.32	744.8	47.5	8.6	83	SW			3								
Utrecht	29.28	743.8	29.33	745.0	47.7	8.7	75	SSW			4		2			0.035	0.9	Light cloudy	H. v d Brink.

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	28.80	731.6	28.86	733.0	34.5	1.4	100	Calm	0	0	.....	.....	7	.....	.....	0.161	4.1	.....	
Brönö	29.13	740.0	29.17	741.0	32.2	0.1	79	E	13	6	.....	.....	10	.....	.....	0.091	2.3	Snowing.....	
Christiania	28.88	733.6	29.03	737.4	34.9	1.6	93	E	7	3	.....	.....	10	.....	.....	0.047	1.2	Rain & snow	
Tromsö	29.29	743.9	29.33	745.0	24.1	— 4.4	81	Calm	0	0	.....	.....	0	.....	.....	0.031	0.8	.....	
.....																			

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	29.97	761.1	30.16	766.0	66.5	13.6	84	NW	1.8	0.8	.....	.....	7	.....	.....	0	0	.....	Dr. J. A. Sampaio.
Campo Major	28.84	732.5	29.86	758.5	63.0	17.2	81	WSW	7.4	3.3	.....	.....	9	WSW	.....	0.378	9.6	.....	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	29.99	761.7	30.08	763.9	73.2	22.9	75	W	8.1	3.6	.....	.....	10	...	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.47	748.5	29.82	757.5	64.6	18.1	90	SW	19.9	8.9	.....	.....	10	.....	.....	1.193	30.3	.....	The Staff.
Ponta Delgada, (Azores)	30.07	763.6	30.13	765.4	64.4	18.0	55	N	1.8	0.8	.....	.....	4	.....	.....	0.031	0.8	.....	
.....																			
.....																			

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

Naval Series. Vessels.	Sea or swell. Height scale 0–9	Sea or swell. Direction from—		
S. S. India.				{ A. D. Pedroso, Com'd't. Lt. S. A. P. de Miranda
.....				
.....				

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.15	740.5	29.59	751.6	34.5	1.4	74	SE	16	7	.....	.....	3	.....	.....	.....	.....	.....	Astronomical Obs.
Wilna	29.26	743.3	29.69	754.2	37.9	3.3	93	E	2	1	.....	.....	10	.....	.....	.....	.....	Raining.....	Astronomical Obs.
Dorpat	29.57	751.0	29.82	757.4	35.4	1.9	78	SE	2	1	.....	.....	10	.....	.....	.....	.....	.....	Prof. Dr. Weihrauch.
St. Petersburg	29.82	757.5	29.84	757.9	37.8	3.2	76	SSW	7	3	.....	.....	10	.....	.....	.....	.....	.....	Central Physical Obs.
Kuopio	29.35	745.6	29.69	754.0	32.9	0.5	94	WSW	7	3	.....	.....	10	.....	.....	Blank	Blank	.....	Ch. Forsten.
Kieff	29.02	737.1	29.66	753.4	39.9	4.4	97	SE	9	4	.....	.....	10	.....	.....	Blank	Blank	.....	Physical Cabinet.
Nikolaiev	29.69	754.0	29.76	755 8	45.7	7.6	91	NW	0	0	.....	.....	10	.....	.....	.....	.....	Light rain....	Kurdakof.
Kertch	29.72	754.8	29.74	755.3	48.7	9.3	92	NW	7	3	.....	.....	10	.....	.....	.....	.....	.....	Lagorio.
Moscow	29.48	748.8	30.06	763.4	31.1	— 0.5	100	S	7	3	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Lugan	29.65	753.0	29.86	758.4	37.0	2.8	80	ESE	18	8	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Archangel	29.63	752.7	29.65	753.2	35.6	2.0	96	SSW	18	8	.....	.....	10	.....	.....	.....	.....	.....	Ogorodnikof.
Tiflis	28.45	722.6	29.89	759.1	47.1	8.4	74	Calm	0	0	.....	.....	8	.....	.....	.....	.....	.....	Physical Observatory.
Astrakhan	30.14	765.6	30.06	763.5	36.7	2.6	75	ESE	16	7	.....	.....	0	.....	.....	.....	.....	.....	Sebastianof.
Kasan	29.99	761.7	30.28	769.0	25.2	— 3.8	69	Calm	0	0	.....	.....	6	.....	.....	.....	.....	.....	Physical Cabinet.
Orenburg																			Tschernischef.
Ekaterinburg	29.33	744.9	30.33	770.4	30.0	— 1.1	31	W	4	2	.....	.....	2	.....	.....	.....	.....	.....	Meteorological Obs.
Nukuss	29.86	758.4	30.10	764.5	37.0	2.8	80	NE	2	1	.....	.....	1	.....	.....	.....	.....	.....	
Kasaly																			Bobrof.
Tashkend	28.56	725.4	30.33	770.3	42.1	5.6	79	Calm	0	0	.....	.....	8	.....	.....	.....	.....	.....	Michelson.
Barnaul	29.67	753.5	30.23	767.9	16.3	— 8.7	69	SW	4	2	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Yeniseisk	29.67	753.7	30.41	772.3	20.5	— 6.4	92	W	9	4	.....	.....	10	.....	.....	.....	.....	Snowing ...	Marks.
Irkutsk																			Usolzef.
Oorga																			Mossin.
Peking, (China)	30.32	770.2	30.47	773.8	27.0	— 2.8	64	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Physical Observatory.
Nertchinsk																			Meteorological Obs.
Vladivostock																			
Nikolaievsk, on the Amoor					—20.2	—29.0		Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	
.....																			
.....																			

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Rave, Director.
Bilbao, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Manuel de Naveran.
Burgos, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Domingo Martin y Perez.
Madrid, Royal Observatory	27.56	700.1	29.80	756.9	58.3	14.6	81	SW	14.9	6.67	.....	0	8	.....	.....	0.429	10.9	Almost cov'd	The Staff.
Murcia, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Olayo Diaz, Director.
Santiago, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.91	759.7	29.98	761.4	72.5	22.6	91	Calm	0	0	.....	5ck	2R	W	.....	0	0	Fair	Benito Vines, S. J.
San Fernando, Naval Obs'y.	29.87	758.6	29.97	761.1	62.4	16.9	98	WNW	18.0	8.1	.....	0	10	.....	WNW	0.526	13.4	Light rain....	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.	.....	.....	29.92	759.9	77.4	25.2	92	S	7.1	8.17	.....	7kn	3kn	E	E	0.315	8.00	Raining.....	Leonardo de Tejeda, Chief of Engineers.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the cöoperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Low'r 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.54	750.3	29.58	751.3	15.1	— 9.4	.....	W	.....	.....	2	.....	10	.....	.....	0.276	7.0	.....	
Umea	29.47	748.6	29.52	749.9	26.6	— 3.0	100	Calm	.....	.....	0	.....	10	.....	.....	0.059	1.5	Snowing	
Hernosand	29.37	746.0	29.42	747.3	36.3	2.4	84	SSE	.....	.....	4	.....	10	.....	.....	0.016	0.4	.....	
Stockholm	29.24	742.6	29.41	747.1	38.1	3.4	68	SE	.....	.....	6	.....	8	.....	.....	0.016	0.4	.....	
Wisby	29.41	746.9	29.47	748.4	36.7	2.6	72	S	.....	.....	8	.....	5	.....	.....	0	0	.....	
Sub-Series.																			
Upsala	29.33	744.9	29.40	746.8	34.5	1.4	85	SE	11.6	5.2	.....	.....	10	.....	SSE	0.222	5.64	.....	Dr. Hildebrandsson.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the cooperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	26.12	714.1	29.55	750.6	50.4	10.2	94	NW	.....	.....	1	.....	10	.....	.....	0.673	17.1	Raining	The Observatory.
Zurich	27.89	708.5	29.55	750.5	49.6	9.8	91	W	.....	.....	2	.....	10	.....	.....	0.472	12.0	Raining	The Observatory.

Note.—For Geneva the corresponding departures from the normal values are: Barometer, —12.7 mm; Thermometer, +5.5 cent.; Relative Humidity, +16 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	29.88	759.0	47.1	8.4	75	S	4.5	2.0	.....	.....	6	.....	N	0	0	.....	The Observatory.
Fao, (Persian Gulf)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salonica	.....	.....	.....	.....	59.7	15.4	.....	N	.....	.....	1	.....	0	.....	.....	.....	.....	.....	B. Stefanidès.
Valona	.....	.....	29.85	758.2	56.1	13.4	.....	SW	.....	.....	1	.....	10	.....	.....	0	0	Covered	A. Bertrand.
Varna	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Imperial Observatory.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.74	755.4	29.85	758.3	63.9	17.7	63	WSW	.....	.....	4	.....	10n	.....	SW	0.72	18.3	Squally	Prof. C. V. A. Van Dyck

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	29.82	757.4	29.89	759.2	44.0	6.7	97	SW	15.0	6.7	.....	10	.....	.....	.....	.....	.....	.....	Hon. J. Ferguson.
Brockville, Ontario	29.55	750.6	29.86	758 4	37	2.8	.....	SW	3	1.3	.....	.....	10s	.....	W	0.16	4.1	Light rain	W. R. Bigg.
*Chatham, N. B	.....	.....	29.91	759.7	46	7.8	96	S	4	1.8	.....	.....	10s	.....	S	0.26	6.3	Cloudy	G. A. Blair.
Charlottetown, P. E. Island.	.....	.....	30.02	762.5	51	10.6	97	S	12	5.4	.....	.....	10n	.....	Calm	0.180	4.57	Cloudy	H. J. Cundall, C. E.
Cornwall, Ontario	29.61	752.1	29.80	756.9	38.9	3.8	91	SW	.....	.....	3	.....	10n	.....	.....	0.240	6.10	Raining	James Smith, M. A.
Dalhousie, N. B	29.82	757.4	29.85	758.2	39.0	3.9	98	E	.....	.....	1	.....	.....	.....	.....	0.59	15.0	Gloomy	H. A. Johnson.
Esquimault, B. C	30.28	769.1	30.33	770.4	39.6	4.2	69	N	.....	.....	.....	0	0	.....	.....	0	0	Clear	W. H. Bevis.
*Father Point, Quebec	.....	.....	29.79	756.7	38	3.3	100	W	7	3.1	.....	.....	10n	.....	SW	0.20	5.1	Light rain	J. McWilliams.
Fredericton, N. B	29.90	759.4	29.97	761.2	42.8	6.0	94	SE	6	2.7	.....	.....	10n	.....	.....	0.740	18.80	Raining	Prof. Harrison.
*Fort Garry, Manitoba	29.39	746.5	30.33	770.4	— 4	—20.0	80	NW	17	7.6	.....	2c	2s	N	N	0	0	Fair	James Stewart.
Goderich, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	H. J. Strang, M. A
Granton, Ontario	28.68	728.5	29.81	757.2	31.1	— 0.5	99	SW	.....	.....	2	.....	10n	.....	.....	Inap.	Inap.	Cloudy	James Grant.
*Halifax, N. S	29.91	759.7	30.04	763.0	51	10.6	99	SW	13	5.8	.....	.....	10n	.....	S	0.612	15.54	Light rain	F. Allison, M. A.
Hamilton, Ontario	29.48	748.8	29.86	758.4	36.7	2.6	76	SW	.....	.....	2	10cs	.....	SW	.....	0	0	Cloudy	Geo. Dickson, M. A
Heart's Content, N. F	30.36	771.1	30.38	771.6	39	3.9	34	SW	.....	.....	1	.....	2s	.....	.....	0	0	Cloudy	E. Weedon.
*Kingston, Ontario	29.50	749.3	29.85	758.2	41	5.0	94	SW	9	4.0	.....	.....	10ks	.....	SW	0.14	3.6	Cloudy	S. Woods, M. A.
Little Glace Bay, N. S	30.15	765.8	30.19	766.8	48.3	9.1	98	S	7	3.1	.....	.....	10n	.....	.....	0	0	Misty	C. H. Rigby.
*Montreal, Quebec	29.59	751.6	29.79	756.7	42	5.6	90	W	8	3.6	.....	.....	10n	.....	.....	0.26	6.6	Light rain	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.90	736.6	29.71	754.6	36	2.2	76	SW	12	5.4	.....	2ck	5ks	SW	SW	0.09	2.3	Fair	Rev. R. Mosley.
Peterboro, Ontario	29.06	738.1	29.82	757.4	37.7	3.2	80	Calm	.....	.....	0	8ck	0	.....	.....	0	0	.....	J. F. Jeffers, B. A.
Port Dover, Ontario	29.15	740.4	29.86	758.4	34	1.1	89	SW	5	2.2	.....	.....	10n	.....	SW	0.18	4.6	Threatening	H. Morgan.
Port Hastings, N. S	30.12	765.0	30.17	766.3	52	11.1	.....	SE	4	1.8	.....	.....	.....	.....	.....	0.35	8.9	Dark	Peter Grant.
Port Stanley, Ontario	29.20	741.7	29.87	758.7	35	1.7	79	SW	18	8.0	.....	.....	10n	.....	SW	0.08	2.0	Cloudy	M. Payne.
*Quebec, Quebec	29.49	749.0	29.81	757.2	41	5.0	100	Calm	0	0	.....	.....	10n	.....	Calm	0.51	13.0	Heavy rain	Capt. Ashe, R. N
*Rockliffe, Ontario	29.28	743.7	29.75	755.6	35	1.7	90	E	4	1.8	.....	.....	8s	.....	NW	0.02	0.5	Fair	W. H. McIntyre.
St. John, N. B	29.80	756.9	29.98	761.5	46	7.6	100	Calm	1	0.4	.....	.....	10ks	.....	.....	0.01	0.3	Cloudy	G. Murdock, C. E.
*Saugeen, Ontario	29.00	736.6	29.72	754.9	33	0.6	99	SW	14	6.3	.....	.....	10ks	.....	NW	0.07	1.8	Light snow	K. Stewart.
Stayner, Ontario	28.89	736.3	29.79	756.7	34	1.1	71	W	10	4.5	.....	.....	10n	.....	W	0	0	Threatening	R. J. Cole.
Stratford, Ontario	28.80	723.9	29.84	757.9	31.0	— 0.6	88	SW	16.0	7.2	.....	.....	10n;s	.....	.....	Inap.	Inap.	Cloudy	C. J. MacGregor, M. A.
*Sydney, C. B	30.19	766.8	30.21	767.3	48	8.9	94	S	9	4.0	.....	.....	10n	.....	.....	0.04	1.0	Light rain	T. C. Hill.
*Toronto, Ontario	29.46	748.3	29.85	758.2	37	2.8	79	W	10	4.5	.....	.....	10ks	.....	W	Inap.	Inap.	Cloudy	Magnetic Observatory.
Windsor, N. S	29.91	759.7	30.01	762.2	53.0	11.7	90	E	4	1.8	.....	.....	10n	.....	.....	0.22	5.6	Raining	Prof. John E. Oram.
Woodstock, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Montgomery.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	42.0	5.6	41	S	.....	.....	.....	0	0	.....	.....	0	0	Fair	John Delany

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.69	754.1	29.91	759.7	45	7.2	85	S	4	1.8	.....	.....	10ks	.....	S	0	0	Cloudy	
Alpena, Michigan	28.97	735.8	29.62	752.3	32	0.0	79	SW	12	5.4	.....	0	8s	.....	SW	0.02	0.5	Fair	
Atlantic City, New Jersey	30.07	763.8	30.09	764.3	44	6.7	91	W	4	1.8	.....	0	0	.....	.....	0.02	0.5	Clear	
Augusta, Georgia	29.96	761.0	30.15	765.8	42	5.6	100	Calm	0	0	.....	2c	Fog	SW	Calm	0.17	4.3	Foggy	
Baltimore, Maryland	30.04	763.0	30.08	764.0	45	7.2	68	Calm	0	0	.....	5ck	2s; fg	W	Calm	0	0	Cloudy	
Barnegat, New Jersey	30.04	763.0	30.06	763.5	45	7.2	84	W	10	4.5	.....	5ck	0	W	.....	0.02	0.5	Fair	
Bismarck, Dakota	28.46	722.9	30.46	773.7	3	—16.1	73	NW	14	6.3	.....	0	8s	.....	NW	0.01	0.3	Fair	
Boise City, Idaho	27.61	701.3	30.47	773.9	21	— 6.1	78	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Boston, Massachusetts	29.78	756.4	29.94	760.5	51	10.6	79	SW	12	5.4	.....	5c	1s; hz	SW	SW	Inap.	Inap.	Fair	
Brackettville, Texas	29.16	740.7	30.13	765.3	41	5.0	64	NW	7	3.1	.....	.....	10s	.....	Calm	0	0	Cloudy	
Breckenridge, Minnesota	29.18	741.2	30.30	769.6	3	—16.1	87	NW	23	10.3	.....	0	0	.....	.....	Inap.	Inap.	Clear	
Brownsville, Texas	30.10	764.5	30.16	766.1	51	10.6	64	N	12	5.4	.....	.....	10s	.....	Calm	0	0	Cloudy	
Buffalo, New York	29.13	739.9	29.83	757.7	40	4.4	73	SW	16	7.2	.....	5k	8s	SW	SW	0.12	4.6	Threatening	
Burlington, Vermont	29.55	750.6	29.81	757.2	47	8.3	77	S	12	5.4	.....	.....	10s	.....	S	0.03	0.8	Cloudy	
Cairo, Illinois	29.77	756.1	30.18	766.6	38	3.3	54	W	13	5.8	.....	.....	10s	.....	Calm	0.03	0.8	Cloudy	
Camp Grant, Arizona	25.26	641.6	30.06	763.5	33	0.6	.....	NE	.....	.....	1	0	0	.....	.....	0	0	Clear	
Camp Verde, Arizona	26.98	685.3	30.46	773.7	33	0.6	32	N	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Campo, California	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Cape Hatteras, N. Carolina	30.07	763.8	30.08	764.0	54	12.2	79	NE	10	4.5	.....	5c	2s	SW	SW	0	0	Fair	
Cape Henry, Virginia	30.09	764.3	30.12	765.0	47	8.3	85	SW	6	2.7	.....	.....	10s	.....	SW	0	0	Cloudy	
Cape Lookout, N. Carolina	30.10	764.5	30.12	765.0	54	12.2	86	N	18	8.0	.....	8c	0	W	.....	0	0	Cloudy	
Cape May, New Jersey	30.05	763.3	30.08	764.0	48	8.9	77	W	12	5.4	.....	2ck	0	SW	.....	0.03	0.8	Fair	
Charleston, South Carolina	30.04	763.0	30.11	764.8	56	13.3	93	SW	1	0.4	.....	.....	10s	.....	W	0	0	Cloudy	
Cheyenne, Wyoming	24.11	612.4	30.05	763.3	7	—13.9	77	NW	8	3.6	.....	2ck	0	NW	.....	0	0	Fair	
Chicago, Illinois	29.12	739.6	29.84	757.9	29	— 1.7	78	W	12	5.4	.....	.....	10s	.....	W	0.07	1.8	Cloudy	
Cincinnati, Ohio	29.33	745.0	29.98	761.5	39	3.9	55	W	8	3.6	.....	.....	10ks	.....	W	0.04	1.0	Threatening	
Cleveland, Ohio	29.21	741.9	29.95	760.7	37	2.8	54	S	16	7.2	.....	.....	10s	.....	S	0.04	1.0	Cloudy	
Concho, Texas	28.44	722.4	30.22	767.6	33	0.6	59	N	16	7.2	.....	8cs	0	N	.....	0	0	Clear	
Corsicana, Texas	29.86	758.4	30.36	771.1	37	2.8	62	N	12	5.4	.....	5cs	0	W	.....	0	0	Fair	
Davenport, Iowa	29.33	745.0	30.01	762.2	20	— 6.7	85	W	18	8.0	.....	.....	10s	.....	W	0.01	0.3	Cloudy	
Denison, Texas	29.56	750.8	30.43	772.9	28	— 2.2	88	NW	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Denver, Colorado	24.96	634.0	30.18	766.6	— 4	—20.0	82	W	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Detroit, Michigan	29.14	740.1	29.82	757.4	34	1.1	69	SW	22	9.8	.....	.....	10s	.....	SW	Inap.	Inap.	Cloudy	
Dodge City, Kansas	27.73	704.3	30.26	768.6	14	—10.0	65	N	24	10.7	.....	0	2s	.....	N	0	0	Clear	
Dubuque, Iowa	29.19	741.4	29.93	760.2	21	— 6.1	85	NW	12	5.4	.....	.....	10n	.....	Calm	0.15	3.8	Light snow	
Duluth, Minnesota	29.19	741.4	29.91	759.7	17	— 8.3	83	NW	7	3.1	.....	.....	10s	.....	NW	0.05	1.3	Cloudy	
Eagle Pass, Texas	29.54	750.3	30.32	770.1	44	6.7	45	NW	9	4.0	.....	.....	10s	.....	NW	0	0	Cloudy	
Eastport, Maine	29.91	759.7	29.98	761.5	48	8.9	92	S	4	1.8	.....	.....	10n	.....	.....	0.91	23.1	Light rain	
Erie, Pennsylvania	29.14	740.1	29.86	758.4	39	3.9	71	SW	20	8.9	.....	2k	8ks	SW	SW	0.01	0.3	Cloudy	
Escanaba, Michigan	29.00	736.6	29.67	753.6	29	— 1.7	77	W	7	3.1	.....	.....	10s	.....	W	0.37	9.4	Cloudy	
Florence, Arizona	28.54	724.9	30.14	765.5	35	1.7	52	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Fort Bayard, New Mexico	24.08	611.6	30.08	764.0	15	— 9.4	47	NW	2	0.9	.....	5c	0	SW	.....	0	0	Fair	
Fort Craig, New Mexico	25.76	654.3	.....	.....	22	— 5.6	61	NW	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Fort Gibson, Indian Ter	29.78	756.4	30.37	771.4	26	— 3.3	76	NW	14	6.3	.....	0	0	.....	.....	0	0	Clear	
Fort Griffin, Texas	29.14	740.1	30.21	767.3	30	— 1.1	57	NW	10	4.5	.....	0	5s	.....	Calm	0	0	Fair	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	29.17	740.9	30.38	771.6	25	— 3.9	75	NW	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Galveston, Texas	30.17	766.3	30.21	767.3	46	7.8	61	NE	22	9.8	.....	.....	10s	.....	Calm	0	0	Threatening	
Grand Haven, Michigan	29.09	738.9	29.74	755.4	35	1.7	80	NW	14	6.3	.....	.....	10s	.....	NW	0.11	2.8	Cloudy	
Indianapolis, Indiana	29.19	741.4	30.00	762.0	34	1.1	79	SW	6	2.7	.....	.....	10n	.....	SW	Inap.	Inap.	Light snow	
Indianola, Texas	30.25	768.3	30.28	769.1	46	7.8	54	N	33	14.8	.....	.....	10ks	.....	Calm	0	0	Cloudy	
Jacksboro, Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Jacksonville, Florida	30.03	762.7	30.06	763.5	62	16.7	88	NW	4	1.8	.....	.....	10s	.....	Calm	Inap.	Inap.	Cloudy	
Keokuk, Iowa	29.42	747.3	30.04	763.0	21	— 6.1	72	NW	16	7.2	.....	0	4s	.....	Calm	0.02	0.5	Fair	
Key West, Florida	29.95	760.7	29.99	761.7	73.5	23.1	92	SE	14	6.3	.....	.....	10n	.....	SE	0.02	0.5	Light rain	
Kityhawk, North Carolina	30.13	765.3	30.15	765.8	49	9.4	93	W	4	1.8	.....	10cs	0	W	.....	0	0	Cloudy	
Knoxville, Tennessee	29.11	739.4	30.16	766.1	35	1.7	90	SE	2	0.9	.....	5k	Sm'e	SW	.....	0.17	4.3	Smoky	
La Crosse, Wisconsin	29.13	739.9	29.91	759.7	20	— 6.7	100	W	12	5.4	.....	.....	10n	.....	W	0.10	2.5	Light rain	
La Mesilla, New Mexico	26.30	668.0	30.45	773.4	23	— 5.0	60	Calm	0	0	.....	0	5s	.....	Calm	0	0	Fair	
Laredo, Texas	.....	.....	.....	.....	47	8.3	41	NW	12	5.4	.....	.....	10s	.....	Calm	0	0	Cloudy	
Leavenworth, Kansas	29.38	746.2	30.30	769.6	18	— 7.8	84	NW	19	8.5	.....	5k	0	NW	.....	0.01	0.3	Fair	
Los Angeles, California	29.69	754.1	30.03	762.7	52	11.1	32	N	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Lonisville, Kentucky	29.47	748.5	30.04	763.0	41	5.0	64	SW	10	4.5	.....	.....	10s	.....	SW	Inap.	Inap	Cloudy	
Lynchburg, Virginia	29.42	747.3	30.11	764.8	44	6.7	68	Calm	0	0	.....	1c	Haze	S	Calm	0	0	Fair	
Maricopa Wells, Arizona	.....	.....	.....	.....	44	6.7	9	N	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Marquette, Michigan	28.92	734.6	29.64	752.8	27	— 2.8	77	W	12	5.4	.....	.....	10n	.....	Calm	0.44	11.2	Light snow	
Mason, Texas	28.66	728.0	30.52	775.2	38	3.3	46	N	12	5.4	.....	.....	10s	.....	.....	0	0	Cloudy	
Memphis, Tennessee	29.88	758.9	30.22	767.6	37	2.8	71	W	6	2.7	.....	2c	2s	SW	SW	0	0	Fair	
Milwaukee, Wisconsin	29.00	736.6	29.81	757.2	26	— 3.3	100	W	17	7.6	.....	.....	10n	.....	.....	0.09	2.3	Light snow	
Mobile, Alabama	30.09	764.3	30.14	765.5	49	9.4	67	N	12	5.4	.....	2k	8s	W	W	0	0	Cloudy	
Montgomery, Alabama	29.91	759.7	30.15	765.8	43.5	6.4	71	N	4	1.8	.....	10cs	Haze	SW	Calm	0	0	Cloudy	
Morgantown, West Virginia	28.94	735.1	30.02	762.5	41	5.0	73	SW	9	4.0	.....	.....	10s	.....	SW	0.05	1.3	Cloudy	
Mt. Washington, N. H.	23.52	597.4	29.88	758.9	25	— 3.9	100	W	30	13.4	.....	.....	10n	.....	W	0.28	7.1	Light snow	
Nashville, Tennessee	29.60	751.8	30.16	766.1	38	3.3	71	SW	4	1.8	.....	.....	10s	.....	SW	0.02	0.5	Cloudy	
New Haven, Connecticut	29.89	759.2	30.00	762.0	49	9.4	85	SW	8	3.6	.....	0	2s	.....	.....	Inap.	Inap.	Clear	
New London, Connecticut	29.95	760.7	30.00	762.0	52	11.1	86	SW	4	1.8	.....	2cs	2s	SW	SW	0.06	1.5	Fair	
New Orleans, Louisiana	30.05	763.3	30.11	764.8	53	11.7	42	N	14	6.3	.....	0	8ks	.....	SW	0	0	Fair	
Newport, Rhode Island	29.93	760.2	29.98	761.5	51	10.6	86	S	7	3.1	.....	0	2s	.....	SW	0	0	Clear	
New York, New York	29.86	758.4	30.04	763.0	46	7.8	77	SW	14	6.3	.....	1cs	Haze	Calm	.....	Inap.	Inap.	Clear	
Norfolk, Virginia	30.08	764.0	30.14	765.5	48	8.9	93	S	5	2.2	.....	5c	Haze	Calm	Calm	0	0	Fair	
North Platte, Nebraska	27.37	695.2	30.27	768.8	2	—16.7	86	NW	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Olympia, Washington Ter.	30.22	767.6	30.26	768.6	31	— 0.6	89	S	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Omaha, Nebraska	29.12	739.6	30.31	769.9	11	—11.7	79	N	20	8.9	.....	0	2s	.....	N	0.02	0.5	Clear	
Oswego, New York	28.57	751.1	29.89	759.2	42	5.6	65	S	7	3.1	.....	0	8s	.....	W	0.16	4.1	Fair	
Pembina, Dakota	29.41	747.0	30.35	770.9	— 1.5	—18.6	84	NW	24	10.7	.....	0	0	.....	.....	0.03	0.8	Clear	
Philadelphia, Pennsylvania	30.02	762.5	30.07	763.8	45	7.2	68	W	6	2.7	.....	8cs	0	SW	.....	0	0	Fair	
Phœnix, Arizona	.....	.....	.....	.....	32	0.0	32	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Pike's Peak, Colorado	17.40	442.0	29.61	752.1	—24	—31.1	54	NW	30	13.4	.....	0	0	.....	.....	0	0	Clear	
Pioche, Nevada	24.21	614.9	29.98	761.5	14	—10.0	63	NW	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Pittsburg, Pennsylvania	29.15	740.4	29.98	761.5	39	3.9	81	SW	9	4.0	.....	.....	10ks	.....	SW	0.05	1.3	Cloudy	
Port Huron, Michigan	29.12	739.6	29.80	756.9	33	0.6	70	SW	18	8.0	.....	.....	10ks	.....	S	0	0	Threatening	
Portland, Maine	29.83	757.7	29.88	758.9	51	10.6	86	S	9	4.0	.....	5k	5s	W	S	0.02	0.5	Cloudy	
Portland, Oregon	30.24	768.1	30.34	770.6	42	5.6	49	E	12	5.4	.....	2c	0	Calm	.....	0	0	Clear	
Prescott, Arizona	24.90	632.4	30.26	768.6	21	— 6.1	71	NE	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Punta Rassa, Florida	30.00	762.0	30.01	762.2	70	21.1	84	E	10	4.5	.....	.....	8ks	.....	S	0	0	Cloudy	
Red Bluff, California	29.73	755.1	30.10	764.5	49	9.4	71	N	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Rochester, New York	29.24	742.7	29.86	758.4	38	3.3	71	SW	7	3.1	.....	2c	5s	SW	SW	0.21	5.3	Fair	
Roseburg, Oregon	29.65	753.1	30.24	768.1	35.5	1.9	100	Calm	0	0	.....	.....	Fog	.....	Calm	0	0	Foggy	

UNITED STATES SERIES.—Continued.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Sacramento, California	29.99	761.7	30.08	764.0	46	7.8	69	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
St. Louis, Missouri	29.53	750.0	30.13	765.3	30	—1.1	78	W	12	5.4	.....	.....	10s	.....	Calm	0.01	0.3	Cloudy	
St. Marks, Florida	30.02	762.5	30.04	763.0	69	15.0	94	N	5	2.2	.....	.....	10n	.....	Calm	1.50	38.1	Light rain	
St. Paul, Minnesota	29.06	738.1	29.96	761.0	12	—11.1	80	NW	16	7.2	.....	5c	5s	N	N	0.04	1.0	Cloudy	
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salt Lake City, Utah	25.96	659.4	30.29	769.4	20	—6.7	85	NE	2	0.9	.....	0	0	.....	.....	0	0	Clear	
San Antonio, Texas	29.58	751.3	30.19	766.8	43	6 1	43	N	12	5.4	.....	0	10ks	.....	N	0	0	Cloudy	
San Diego, California	29.97	761.2	30.04	763.0	57	13.9	10	NE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Sandusky, Ohio	29.22	742.2	29.91	759.7	36	2.2	80	SW	16	7.2	.....	.....	10n	.....	SW	0.01	0.3	Light snow	
Sandy Hook, New Jersey	30.03	762.7	30.05	763.3	48	8.9	85	W	14	6.3	.....	2ck	0	W	.....	0.05	1.3	Fair	
San Francisco, California	29.96	761.0	30.02	762.5	59	15.0	33	N	14	6.3	.....	0	0	.....	.....	0	0	Clear	
Santa Fé, New Mexico	28.84	592.8	29.88	758.9	7	—13.9	54	Calm	0	0	.....	0	0	.....	.....	Inap.	Inap.	Clear	
Savannah, Georgia	30.02	762.5	30.12	765.0	53	11.7	93	NW	4	1.8	.....	10s	Fog	W	.....	0	0	Foggy	
Shreveport, Louisiana	30.08	764.0	30.31	769.9	40	4.4	56	N	8	3.6	.....	10cs	0	S	.....	0	0	Cloudy	
Smithville, North Carolina	30.09	764.3	30.13	765 3	54	12.2	87	NW	6	2.7	.....	0	8ks	.....	SW	0	0	Cloudy	
Springfield, Massachusetts	29.76	755.9	29.89	759.2	47	8.3	85	S	3	1.3	.....	2c	2ck	SW	S	0.03	0.8	Fair	
Stanwix, Arizona	.....	.....	.....	.....	43	6.1	21	N	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Stockton, Texas	27.28	692.9	30.28	769.1	32	0.0	69	NW	8	3.6	.....	.....	10s	.....	W	0	0	Cloudy	
Thatcher's Island, Mass	29.89	759.2	29.94	760.5	49	9.4	93	S	16	7.2	.....	5cs	0	W	.....	0.05	1.3	Clearing	
Toledo, Ohio	29.18	741.2	29.87	758.7	38	3.3	63	SW	12	5.4	.....	.....	10s	.....	SW	Inap.	Inap.	Cloudy	
Tucson, Arizona	27.61	701.3	30.16	766.1	38	3.3	45	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Tybee Island, Georgia	30.08	764.0	30.11	764.8	57	13.9	93	N	4	1.8	.....	10cs	Fog	Calm	Calm	0	0	Cloudy	
Umatilla, Oregon	30.24	768.1	.....	.....	21	—6.1	69	SE	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Vicksburg, Mississippi	29.99	761.7	30.27	768.8	39	3.9	73	N	4	1.8	.....	5k	0	SW	.....	0	0	Fair	
Virginia City, Montana	24.52	622.8	30.00	762.0	—3	—19.4	83	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Visalia, California	29.72	754.9	30.11	764.8	40	4.4	91	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Washington, D. C.	29.97	761.2	30.09	764.3	40	4.4	100	Calm	0	0	.....	10ck	Fog	SW	S	0	0	Cloudy	
Wickenburg, Arizona	.....	.....	.....	.....	31	—0.6	38	NW	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Wilmington, N. Carolina	30.04	763.0	30.12	765.0	52	11.1	93	Calm	0	0	.....	0	Fog	.....	Calm	0	0	Clear	
Winnemucca, Nevada	25.93	658.6	30.29	769.4	18	—7.8	68	NE	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Wood's Holl, Mass	29.96	761.0	30.01	762.2	50	10.0	86	SW	8	3.6	.....	Haze	5s	.....	S	0.03	0.8	Fair	
Yankton, Dakota	29.02	737.1	30.47	773.9	5	—15.0	75	NW	20	8.9	.....	0	0	.....	.....	0.05	1.3	Clear	
Yuma, Arizona	30.04	763.0	30.21	767.3	52	11.1	23	W	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Sub-Series.																			
York Factory, B. A.	30.10	764.5	30.15	765.8	21.0	—6.1	93	N	28	12.5	.....	.....	9s	.....	.....	0.12	3.0	Cloudy	J. Fortescue, W. Wood.
Havana, Cuba, W. I.	29.90	759.4	29.92	760 0	75	23.9	85	E	1.2	0.5	.....	8ck;c	0	W	.....	0	0	Cloudy	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.13	765.3	30.14	765.5	78	25.6	82	N	2	0.9	.....	10c	5s	Calm	SE	6	0	.....	James Gall.
Navassa, W. I.	29.87	758.7	29.95	760.7	82.5	28.1	.....	NE	10	4.5	.....	.....	.....	.....	.....	0	0	Cloudy	F. M Everett.
St. Thomas, W. I.	.....	.....	.....	.....	82	27.8	78	NE	3	1.3	.....	2c	2k	E	.....	0	0	.....	G. O. Gellich.
Paramaribo, D. Guiana, S. A.	.....	.....	29.99	761.7	83	28.3	83	E	.....	.....	2	.....	8ks	.....	.....	0.020	0.51	Cloudy	C. J. Hering.
Batavia, Dutch Guiana, S. A	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Dr. H. Groot.
Medellin, Colombia, S. A.	25.24	641.1	.....	.....	65.0	18.3	84	S	.....	.....	1	8cs	2n;s	.....	.....	0	0	Cloudy	Thomas Herran.
Honolulu, Oahu, H. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Daniel Smith.
Makawao, Maui, H. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. L. Clarke.

Note.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,883 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573,4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Ploche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,680 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.67 in.; Cheyenne, 5.94 in.; Denver, 5,22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Ploche, 5.77 in.; Prescott, 5.86 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
NavyYard Mare Island, Cal.	30.02	762.5	51	10.6	51	10.6	40	ESE	5	2.2	....	.....	0	.....	.....	0	0	.....	.....	Clear.	
Navy Yard, Pensacola, Fla.	30.15	765.8	.....	.....	54	12.2	74	N	7	3.1	....	.....	10	.....	NW	0	0	.....	.....	D. clouds....	
NavyYard, Portsmouth, N.H	29.95	760.7	62	16.7	47	8.3	85	SW	2	0.9	.....	.....	.....	.....	.....	0	0	.....	.....	Clear	
Naval Hospital, Yokohama, Japan.....	29.94	760.5	53	11.7	45	7.2	53	NNE	.....	.....	5	.....	7k	.....	NW	0	0	.....	.....	Cloudy.....	
Adams, Punta Arenas, Patagonia.	29.32	744.7	50	10.0	50	10.0	72	Calm	.....	.....	0	.....	10	.....	.....	Light	Light	Light	SE	D. clouds.....	
Alert, Yokohama, Japan.....	30.10†	764.5†	48	8.9	48	8.9	63	NNW	.....	.....	4	.....	8	.....	NNW	.....	.....	.....	.....	D. clouds.....	
Alliance, Constantinople, Turkey.	29.98	761.5	62	16.7	50	10.0	64	SSW	.....	.....	1–2	.....	7	.....	SSW	.....	.....	.....	.....	Cloudy.....	
Ashuelot. Shanghai, China.....	30.50	774.7	54	12.2	45	7.2	61	NE	.....	.....	1	.....	10	.....	Calm	.....	.....	.....	.....	D. clouds.....	
Canonicus, New Orleans, La.....	30.07	763.5	43	6.1	53	11.7	93	N	.....	.....	3	.....	10	.....	.....	.....	.....	.....	.....	Cloudy.....	
Colorado, New York, N. Y.....	30.05	763.3	48	8.9	47	8.3	85	WSW	10	4.5	.....	.....	2	.....	WSW	0	0	.....	.....	Light fog.....	
Despatch, Constantinople, Turkey.	30.00	762.0	74	23.3	51	10.6	65	SW	.....	...	1	.....	6	.....	SW	.....	.....	.....	.....	Cloudy.....	
Essex, Gaboon River, Africa.....	29.84	757.9	83	28.3	83	28.3	91	S	.....	.....	1	.....	8	.....	.....	.....	.....	.....	.....	D. clouds.....	
Franklin, Norfolk, Va.....	30.21	767.3	45	7.2	49	9.4	85	SW	2.5	1.1	.....	.....	8	.....	SW	0	0	.....	.....	Clear?.....	
Guard, N. 39° 22, W. 15° 10'.....	29.84	757.9	67	19.4	64	17.8	78	NW	.....	.....	4–5	.....	8	.....	N&W	.....	.....	Moderate.	N&W	Showery.....	
Lackawana, San Francisco, Cal.....	30.07	763.8	.....	.....	60	15.6	71	NNE	.....	.....	3–4	.....	0	.....	.....	.....	.....	.....	.....	Blue sky.....	
Marion, Smyrna, Turkey.....	29.93	760.2	57	13.9	54	12.2	67	WSW	.....	.....	1	.....	8	.....	Calm	0	0	Smooth	E	D. clouds.....	
Michigan, Erie, Pa.....	29.39	746.5	70	21.1	41	5.0	49	W.	.....	.....	5	.....	10	.....	W	.....	.....	.....	.....	Cloudy.....	
Monongahela, Alexandria, Egypt.....	30.03	762.7	65	18.3	66	18.9	89	NW	.....	.....	3–4	.....	kn	.....	.....	Light	Light	Smooth	.....	Squally.....	
New Hampshire, Port Royal, S.C.....	30.24	768.1	.....	.....	56	13.3	100	Calm	0	0	.....	.....	8	.....	N	0.01	0.3	.....	.....	D. clouds.. ...	
Omaha, Callao, Peru.....	30.10	764.5	72.5	22.5	71	21.7	95	SE	4	1.8	.....	.....	10	.....	SE	0	0	Smooth	.....	Cloudy.....	
Onward, Callao, Peru.....	30.08†	764 0†	72	22.2	70	21.1	95	ESE	.....	.....	3	.....	10	.....	.....	.....	.....	Long	W	D. clouds.....	
Ossipee, Norfolk, Va.....	30.17	766.3	63	17.2	50	10.0	86	SW	.....	.....	2	.....	6	.....	W	.....	.....	.....	.....	D. clouds.....	
Palos, Shanghai, China.....	30.52	775.2	53	11.7	45	7.2	68	NE	.....	....	2	.....	10	.....	.....	.....	.....	.....	.....	Overcast.....	
Plymouth, N. 30° 49', W. 68° 51'.....	30.32	770.1	75	23.9	69	20.6	??	SW	.....	.....	1	.....	6	.....	SW	.....	.....	.....	SE	Pleasant.....	
Powhatan, Hampton Roads, Va.....	.....	.....	.....	.....	50	10.0	??	WSW	7.2	3.2	.....	.....	3	.....	.....	0	0	.....	WSW	Clear	
Ranger, Shanghai, China.....	30.59	777.0	64	17.8	48	8.9	70	N	.....	.....	1	.....	10	.....	N	.....	.....	.....	.....	Cloudy..	
Rio Bravo, Brownsville, Texas.....	30.06	763.5	.....	.....	52	11.1	86	NNW	.....	.....	4–5	.....	10	.....	.....	.....	.....	.....	.....	Squally.....	
Santee, Annapolis, Md.....	30.18	766.6	73	22.8	44	6.7	84	SW	.....	.....	2	.....	8	.....	SW	0	0	.....	.....	Hazy.....	
Saratoga, Hampton Roads, Va.....	.....	.....	.....	.....	57	13.9	81	S	.....	.....	2	.....	4	.....	S	Light	Light	.....	.....	Clear	
St. Louis, League Island, Pa	29.95	760.7	45	7.2	46	7.8	84	W	9	4.0	.....	.....	5	.....	NW	0	0	.....	.....	Fair.....	
Swatara, Norfolk, Va.....	30.22	767.6	.....	.....	57	13.9	75	S	.....	.....	1	.....	2	.....	S	.....	.....	.....	.....	D. clouds.....	
Tennessee, Yokohama, Japan.....	30.07	763.8	63	17.2	47	8 3	48	N	20	8.9	.....	.....	9	.....	N&W	0	0	Moderate.	N	D. clouds.....	
Trenton, Villefranche, France.....	29.62	752.3	.. ..	.....	53	11.7	93	E	4	1.8	.....	.....	10	.....	Calm	1.0	25.	.....	.....	Raining.....	
Vandalia, Villefranche, France.,...	29.57	751.1	59	15.0	57	13.9	81	SSE	.....	.....	1	.....	10	.....	NW	.....	.....	Long smooth	SW	D clouds....	
Wabash, Boston, Mass.....	29.98	761.5	55	12.8	51	10.6	79	SW	16	7.2	.....	.....	6	.....	SW	0	0	.....	.....	D. clouds.....	
Wyoming, Washington, D. C.....	30.38†	771.6†	.....	.....	42	5.6	.....	W	.....	.....	1	.....	5	.....	.....	.....	.....	.....	.....	Hazy..	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. The position given for the Plymouth is that at noon, local time, instead of that at 7:35 a. m., Washington time.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.	Character.	Direction from—		
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—				
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska, Ulsaladdy, W. T.			30.46†	773.7†	40	4.4		S			1		0					Clear	Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama, N. 10° 41′ 36″, W. 88° 37′ 30″			29.73	755.1	82	27.8	83	NW			2		2		N	Light	NNW	D. clouds	Capt. Howard.
S. S. City of Peking																			Lt. Z. L. Tanner, U.S.N.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio, N. 27° 16′, E. 123° 23′			30.34	770.6	64	17.8		NNE			6		10		NE	Mod'ate	NNE	Overcast	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

NOTE.—The originals give the wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. † Aneroid; corrected for elevation, instrumental error not known.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.

S. S. Belgic																			Capt. John Metcalf.
S. S. Gaelic, N. 30° 00′, W. 166° 25′			30.02*	762.5*	69	20.6	??	W			6		k		W	Very heavy.	W	Overcast	Capt. W. H. Kidley
S. S. Oceanic, N. 44° 38′, W. 157° 3′			29.63	752.6	40	4.4	91	WSW			3–4		6		W	Heavy	N	Showery	Capt. H. Parsell.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. *Aneriod.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig, N. 39° 43′, W. 68° 31′	S62W	12.0	30.04	763.0	66.0	18.9	79	SW			4		ck		S	Smooth		D. clouds	Capt. K. Undütsch.
S. S. Nürnberg, N. 47° 27′, W. 10° 49′			29.42	747.3	57.5	14.2	91	WSW			7		c		W	Rough	W	D. clouds	Capt. A. Jaeger.
S. S. Ohio, Baltimore, Md			29.91	759.7	45.0	7.2	88	SE			1		ks		SE			Blue sky	Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, nor distinguish between upper and lower clouds.

UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Lo'wr	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second	0—10.	0—10.	0—10.	From—	From—	Character.	Direction From—		
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, Liverpool			29.09*	738.9*	46	7.8	77	SW			5		4		SW				Captain Sargent.
S. S. Ohio. N. 46° 51′, W. 52° 31′			30.36	771.1	44	6.7	92	SW			1		0			Light	None	Fair	Captain Morrison.
S. S. Pennsylvania, N. 46° 15′, W. 43° 09′			30.37†	771.4†	58	14.4	86	N			5		7		NNE	Light	NNE	Cloudy	Captain Harris.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. *Aneroid; correction for elevation applied, instrumental error not known.
† Corrected for temperature and elevation, instrumental error not known.

RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

S. S. Nederland																			Capt. Randle.
S. S. Switzerland, N. 39° 10′, W. 74° 03′			30.24*	768.1*				W	20	8.9			8?		WNW	Light	S	Clear?	Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

*Aneroid; regulated to standard at Antwerp.

ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

S. S. Hibernian																			
S. S. Scandinavian N. 52° 2′, W. 6° 5′			29.13	739.9	48.5	9.2		WSW			6		4		WSW	Smooth		D. clouds	Capt. W. Richardson.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller Kennebunk, Maine			29.92	760.0	52	11.1	??	S	2	0.9			0					Clear	Capt. James Jorgensen.

NOTE.—The originals for the schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer. U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON NOVEMBER 29, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSÉ mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.

1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.

1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours	.....	.....	29.96	761.0	70.2	21.2	72	SSW	.....	.....	1	.....	4	.....	.....	0	0	Cloudy	Michel.
Algiers	.....	.....	29.77	756.1	71.6	22.0	42	NW	.....	.....	2	.....	6	.....	.....	0.031	0.8	Cloudy	Peter.
La Calle	.....	.....	29.78	756.4	71.6	22.0	64	NW	.....	.....	2	.....	0	.....	.....	0	0	Clear	Fleury.
Tunis	.....	.....	29.80	756.9	68.9	20.5	61	W	.....	.....	2	.....	7	.....	.....	0.012	0.3	Very cloudy	Jacques.
Sfax	.....	.....	29.83	757.7	60.8	16.0	.....	SW	.....	.....	2	.....	9	.....	.....	0	0	Covered	Husson.
Saida	.....	.....	29.98	761.4	63.3	17.4	50	WSW	.....	.....	2	.....	2	.....	.....	0	0	Fair	Millot.
Tebessa	.....	.....	29.87	758.6	.....	.....	.....	W	.....	.....	1	.....	2	.....	.....	.....	.....	Fair	Bourgeois.
Geriville	.....	.....	30.00	762.0	54.7	12.6	83	WNW	.....	.....	4	.....	3	.....	.....	0	0	Pretty fair	Lemaillot.
Laghouat	.....	.....	29.97	761.1	69.8	21.0	27	E	.....	.....	6	.....	6	.....	.....	0	0	Cloudy	Guyot.
Biskra	.....	.....	29.88	758.9	70.5	21.4	51	Calm	.....	.....	0	.....	6	.....	.....	0	0	Cloudy	Kuntz.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890 ? meters, or 2,919.9 ? feet; Tebessa, 1,088 ? m., or 3,569.4 ? ft.; Geriville, 1,360 ? m.; or 4,461.7 ? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

Agram	29.00	736.6	29.56	750.7	44.6	7.0	88	NE	.....	.....	1	.....	10	.....	.....	0.134	3.4	Raining	Prof. Ivan Stozir
Cracow, I. R. Observatory	28.89	733.8	29.67	753.5	42.1	5.6	91	NE	.....	.....	1	.....	10	.....	.....	0.043	1.1	.....	Dr. Wierzbiski.
Eperies	28.81	731.8	29.71	754.7	37.4	3.0	76	Calm	.....	.....	0	.....	5;8	.....	.....	0	0	.....	Julius Mikolik.
Gratz	28.37	720.5	29.63	752.6	42.3	5.7	91	NW	.....	.....	2	.....	10	.....	.....	0.130	3.3	.....	Andreas Rospini.
Hermannstadt	28.26	717.7	29.74	755.4	29.8	—1.2	76	SE	.....	.....	2	.....	3	.....	.....	0	0	.....	Prof. Reissenberger.
Kremsmünster	28.13	714.6	29.49	749.1	39.2	4.0	97	ENE	.....	.....	2	.....	10	.....	.....	0	0	.....	Prof. C. Wagner.
Lemberg	28.69	728.8	29.70	754.3	38.5	3.6	87	S	.....	.....	1	.....	7	.....	.....	0	0	.....	Dr. T. Stanecki.
Pola	29.40	746.7	29.51	749.5	54.1	12.3	94	WNW	.....	.....	2	.....	10s	.....	.....	0.956	24.28	Foggy	I.R.HydrographicOffice
Szathmar	29.28	743.6	29.75	755.6	43.9	6.6	49	E	.....	.....	2	.....	4	.....	.....	0	0	.....	Johann Tamas, S. J.
Szegedin	29.34	745.1	29.61	752.2	48.2	9.0	61	SE	.....	.....	2	.....	6	.....	.....	0.035	0.90	.....	Karl Stancel.
Trieste	29.44	747.7	29.54	750.3	52.9	11.6	73	ENE	.....	.....	2	.....	10	.....	.....	0.472	12.0	Raining	P. Busin.
Vienna	28.91	734.4	29.63	752.5	38.5	3.6	95	S	.....	.....	2	.....	.....	.....	.....	0.157	4.0	.....	I.R. Central Met.Obs'y
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time, and at Trieste at 7 a. m. of the following day. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

Arlon	27.78	705.7	29.29	744.0	42.1	5.6	90	SSE	.....	.....	2	.....	10	.....	.....	0.154	3.9	Raining	Prof. M. Passau.
Brussels	28.87	733.3	29.07	738.3	48.2	9.0	82	S	.....	.....	5	.....	9	.....	SSW	0.071	1.80	.....	Royal Observatory.
Furnes	28.95	735.2	28.97	735.8	47.7	8.7	97	SW	.....	.....	6	.....	10	.....	.....	0.008	0.2	.....	M. E. de Cae.
Maeseyck	29.04	737.5	29.17	740.8	48.4	9.1	75	S	.....	.....	6	.....	10	.....	.....	0.024	0.6	.....	M. Pierrot.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

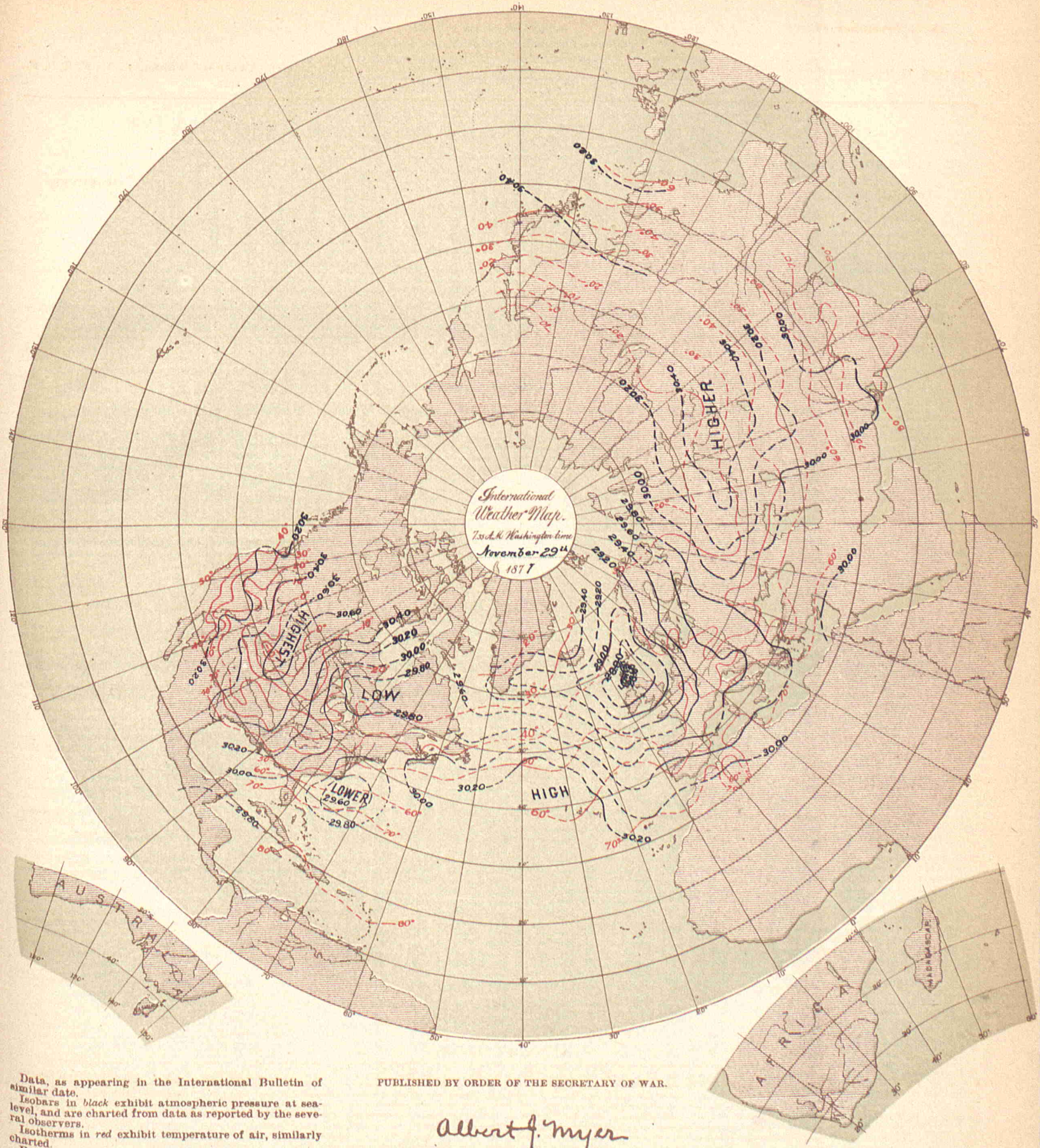
Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	28.52	724.4	28.62	726.9	43.0	6.1	.....	SSE	11	4.9	.....	.....	10	.....	.....	0.555	14.10	Raining.....	W. Boswell.
Ardrossan	28.59	726.2	28.61	726.7	43	6.1	.....	WNW	.....	.....	3	.....	7	.....	.....	.....	.....	Raining.....	William McNeil.
Armagh, Observatory	.....	.....	28.72	729.5	39.2	4.0	.....	SSW	12	5.4	.....	.....	10	.....	.....	.....	.....	Overcast.....	S. Call, for Dr. Robinson
Bidston, (Liverpool Obs.)	.....	.....	28.75	730.2	44.0	6.7	.....	WSW	24	10.7	.....	.....	5	.....	.....	.....	.....	D. clouds.....	John Hartnup.
Birr Castle, (Parsonstown)	.....	.....	28.75	730.2	40.7	4.8	.....	SW	.....	.....	1	.....	10	.....	.....	.....	.....	Drizzling.....	J. L. E. Dreyer.
Bradford, Yorkshire	28.33	719.6	28.73	729.7	42.1	5.6	.....	W	.....	.....	3	.....	10	.....	.....	0.21	5.3	Overcast.....	J. McLandsborough.
Bridgetown, (Barbados)	29.88	758.9	29.91	759.7	82.0	27.8	.....	NE	.....	.....	1	.....	3	.....	.....	.....	.....	D. clouds.....	Pvt. G. W. Roberts, A.
Cambridge, Observatory	.....	.....	28.85	732.8	45.0	7.2	.....	SW	.....	.....	2	.....	7	.....	.....	.....	.....	D. clouds....	H. Todd. [H. O.
Cardington	.....	.....	28.86	733.0	44.0	6.7	.....	SW	.....	.....	2	.....	6	.....	.....	.....	.....	D. clouds.....	John McLaren.
Chatham, School M. E	28.75	730.2	28.88	733.5	43.2	6.2	.....	SE	.....	.....	2	.....	9	.....	.....	Blank	Blank	Overcast.....	Lt. W. G. Morris, R. E.
Dartmoor	27.67	700.3	29.02	737.1	42.0	5.6	.....	W	.....	.....	5	.....	3	.....	.....	.....	.....	Showery.....	Alexander Watt.
Davos Platz (Switzerland)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Francis Redford, M. A.
Donaghadee	28.66	728.0	28.68	728.5	39	3.9	.....	W	.....	.....	2	.....	0	.....	.....	.....	.....	Blue sky.....	J. Mac Gowan.
Dover	28.99	736.3	29.01	736.8	45	7.2	.....	WSW	.....	.....	5	.....	5	.....	.....	.....	.....	Squally.....	J. Costello.
Eccles, (near Manchester)	.....	.....	28.73	729.7	44.0	6.7	.....	SW	1.4	0.6	.....	.....	10	.....	.....	.....	.....	Gloomy.....	Thomas Mackereth.
Falmouth, Observatory	28.78	731.0	29.00	736.6	46.7	8.2	.....	W	.....	.....	3	.....	8	.....	.....	.....	.....	Overcast.....	The Staff.
Fort Napier, (Natal)	27.63	701.8	29.84	757.0	76.2	24.6	.....	E	.....	.....	2	.....	10	.....	.....	.....	.....	Overcast	Pvt. G. Salmon, A.H. C.
Free Town, (Sierra Leone)	.....	.....	29.85	758.2	87.0	30.6	.....	Calm	.....	.....	0	.....	3	.....	.....	.....	.....	D. clouds.....	
Galway, Queen's College	.....	.....	.....	.....	43	6.1	.....	WSW	.....	.....	2	.....	7	.....	.....	.....	.....	Raining.....	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	29.86	758.4	29.91	759.7	64.2	17.9	.....	NW	.....	.....	6	.....	6	.....	.....	.....	.....	Clouds	Corpl. C. Aitken, A.H.C.
Glasgow, Observatory	28.40	721.3	28 61	726.7	40.8	4.9	.....	SW	.....	.....	1	.....	10	.....	.....	.....	.....	Drizzling.....	D. G. Maclean.
Great Yarmouth	28.84	732.5	28.85	732.8	47	8.3	.....	SSW	.....	.....	6	.....	8	.....	.....	.....	.....	Raining.....	G. T. Watson.
Greenwich, Royal Obs'y	28.73	729.7	28.90	734.0	43.8	6.6	.....	W	.....	.....	3	.....	10	.....	.....	.....	.....	Overcast.....	The Staff, for G. B. Airy.
Guernsey	28.84	732.5	29.05	737.9	45.5	7.5	.....	SW	.....	.....	4	.....	8	.....	.....	.....	.....	Rain & hail..	Dr. S. E. Hoskins, F.R.S.
Helston	.....	.....	28.99	736.3	49	9.4	.....	W	.....	.....	4	.....	3	.....	.....	0.32	8.1	D. clouds.....	M. P. Moyle.
Holyhead	28.72	729.5	28.77	730.7	44	6.7	.....	WSW	.....	.....	4	.....	3	.....	.....	.....	.....	D. clouds.....	John Tilston.
Jersey	28.78	731.0	29.07	738.4	46.5	8.1	.....	W	.....	.....	6	.....	8	.....	.....	.....	.....	Hail-squalls	J. Fisher.
Kew, Observatory	.....	.....	28.90	734.0	44.8	7.1	.....	SW	14	6.3	.....	.....	9	.....	.....	.....	.....	Misty.....	The Staff.
Kingstown	28.72	729.5	28.75	730.2	42	5.6	.....	W	.....	.....	4	.....	5	.....	.....	.....	.....	D. clouds.....	George Mitchell.
Leicester, Museum	.....	.....	29.82*	757.4*	44.0	6.7	.....	W	.....	.....	1	.....	2	.....	.....	.....	.....	D. clouds.....	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.69	754.1	29.77	756.1	68.0	20.0	.....	W	.....	.....	5	.....	8	.....	.....	.....	.....	D. clouds.....	Sgt. C. Arbeiter, A.H.C.
Nairn	28.48	723.4	28.67	725.7	38	3.3	.....	NW	.....	.....	1	.....	10	.....	.....	.....	.....	Overcast.....	W. D. Penny.
Nassau, (Bahamas)	.....	.....	29.88	758.9	76.5	24.7	.....	SW	.....	.....	1	.....	9	.....	.....	Blank	Blank	Overcast.....	C. S. Duncombe.
Nottingham, Observatory	28.64	727.4	28.82	732.0	45.2	7.3	.....	SW	.....	.....	2	.....	7c;k	.....	SW	0.120	3.0	D. clouds.....	F. J. Lowe, F. R. S.
Oscott, St. Mary's College	28.29	718.6	28.80	731.5	44.7	7.1	.....	SW	.....	.....	3	.....	2	.....	.....	.....	.....	D. clouds.....	Rev. Stephen Whitty
Oxford, Radcliffe Obs'y	.....	.....	28.89	733.8	45	7.2	.....	W	.....	.....	2	.....	6	.....	.....	.....	.....	D. clouds.....	F. Lucas
Plymouth	28.90	734.0	28.97	735.8	46.6	8.1	.....	WSW	.....	.....	4	.....	3	.....	.....	.....	.....	D. clouds.....	John Merrifield.
Roche's Point	28.81	731.8	28.85	732.8	46	7 8	.....	WSW	.....	.....	4	.....	5	.....	.....	.....	.....	Showery.....	W. Kennedy.
Saint Ann's Head	28.71	729.2	28.87	733.3	47	8.3	.....	SW	.....	.....	4	.....	7	.....	.....	.....	.....	Squally.....	John C. Walker.
Sandwick Manse, (Orkneys.)	.....	.....	28.65	727.7	44	6.7	.....	SE	31	13.9	.....	.....	10	.....	.....	.....	.....	Rain & hail..	Rev. C. Clouston, LL. D
Scutari, Cemetery, (Turkey	.....	.....	29.86	758.4	51.0	10.6	.....	S	.....	.....	2	.....	10	.....	.....	.....	.....	Threatening	Sergt. W. H. Lyne.
Sheffield	28.50	723.9	28.73	729.7	42.5	5.8	.....	SW	.....	.....	3	.....	10	.....	.....	0.08	2.0	Gloomy.....	W. F. Cooper.
Silloth Rectory	28.64	727.4	28.67	728.2	44.1	6.7	84	W	.....	.....	1	.....	5	.....	.....	0.140	3.6	D. clouds..	Rev. F. Redford, M. A.
Stonyhurst, Observatory	.....	.....	.....	.....	42.8	6.0	.....	W	.....	.....	2	.....	10	.....	.....	.....	.....	Gloomy.....	Rev. S. J. Perry.
Stornoway, Lewis C., (Hebr.)	.....	.....	28.62	726.9	40	4.4	.....	WNW	.....	.....	2	.....	2	.....	.....	.....	.....	D. clouds.....	John Smith.
Stratfield Turgiss	28.68	728.5	28.89	733.8	43.9	6.6	.....	SW	.....	.....	1	.....	8	.....	.....	.....	.....	D. clouds.....	Rev. C. H. Griffith, F.M.S.
Thurso	.....	.....	28.58	726.9	44	6.7	.....	SE	.....	.....	5	.....	10	.....	.....	.....	.....	Raining.....	John Trotter.
Truro, Royal Institution	.....	.....	29.02	737.1	49	9.4	.....	W	.....	.....	7	.....	10	.....	.....	.....	.....	Raining.....	W. Newcombe.
Valencia, Observatory	.....	.....	28.86	733.0	45.9	7.7	.....	W	25	11.2	.....	.....	7	.....	.....	.....	.....	D. clouds.....	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Henry Mercer.
Cape Good Hope, Obs'y	30.06	763.5	30.10	764.5	68.3	20.2	44	SSW	35	15.6	.....	0	1	.....	.....	.....	.....	.....	The Staff, for E. J. Stone.
Hobart Town, (Tasmania)	.....	.....	29.97	761.2	51.5	10.8	70	SE	.....	.....	3	.....	4k	.....	.....	0	0	.....	Francis Abbott, F.R.A.S.
Leith, Restalrig Park	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Andrew Gibb.
Mauritius, Observatory	29.81	757.2	30.06	762.0	78.1	25.6	66	ENE	11.5	5.1	.....	0	5	.....	ESE	0	0	Fine.....	C. Meldrum.
Melbourne, Observatory	29.94	760.5	30.03	762.7	53.4	11.9	77	SE	8	3.6	.....	.....	4	.....	.....	0.08	2.0	Fine.....	R. L. J. Ellery.
Monach L't-house, (Hebrides)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Youngclause.
North Unst, (Shetland Is.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Robert Burnet.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.07 m.; Fort Napier, 2,200 ft., or 670.6 m. *Evidently 1 inch or 25.4 mm. too high.

Marine Series. Vessels.	Sea or swell. Height scale 0—9	Sea or swell. Direction from—	Weather	Observer
S. S. Algeria	.....	.....	.....	Capt. W. Watson.
S. S. Batavia, N. 45° 25′, W. 41° 50′	2	NNE	D. clouds.....	Capt. J. E. Mouland.
Ship Camperdown	.....	.....	.....	Capt. A. T. Miller.
Brig Catherine	.....	.....	.....	Capt. Adam Smith.
Barque Celeste	.....	.....	.....	Capt. D. F. McKechnie.
S. S. Hibernia	.....	.....	.....	Capt. W. R. Cato
Barque Maroon	.....	.....	.....	Capt. A. T. Brown.
Ship Mikado	.....	.....	.....	Capt. C. C. Prehn.
S. S. Seine	.....	.....	.....	Capt. H. Manning.
Barque Sorata	.....	.....	.....	Capt. Jas. J. Price.
Schooner Traveller	.....	.....	.....	Capt. Alex Simpson.
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

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COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
San José	26.22	666.0			64.8	18.2	92	SE			1	2c	1k		E	Blank	Blank		Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.38	746.2	29.43	747.4	41.9	5.5	88	S			4		10						
Faröe	29.23	742.4	29.25	742.9	39.9	4.4	96	SSE			6		9						
Godthaab, (Greenland)	29.41	747.1	29.46	748.2	14.7	— 9.6	91	NNE			4		1						
Stykkisholm, (Iceland)	29.43	747.5	29.47	748.6	31.5	— 0.3	94	SE			6		5						
Thorshavn, (Faröe)	29.02	737.1	29.06	738.0	40.1	4.5	79	ENE			6		7						Raining
Vestervig	29.06	738.2	29.23	742.5	38.5	3.6	93	SE			6		6						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

Alençon, Normal School	28.03	727.2	29.18	741.2	50.0	10	81	W			2		5		NW	0.04	1.	Cloudy	Collignon, Director.
Amiens, Normal School	28.92	734.6	29.03	737.4	47.5	8.6		WSW			3		5		W	0	0	Cloudy	Bonvarne, Director.
Avignon, Normal School	29.39	746.6	29.47	748.6	48.0	8.9	81	NNE			1		10		SSE	0	0	Covered	Mr. Giraud, Director.
Bar-sur-Seine	28.07	728.2	29.23	742.4	51.4	10.8	73	S			2		8kn		W	0	0	Very cloudy	C. Saillard.
Beaumette Obs'y (Angers)	29.00	736.6	29 16	740.6	50.0	10.0	74	SW	13.4	6.0			10		SW	0.260	7.1	Raining	Albert Cheux.
Beauvais	28.83	732.2	29.11	739.3	47.7	8.7	79	SW			4		10		W	0	0	Covered	Normal School.
Besançon	28.52	724.3	29.40	746.8	47 8	8.8	86	SSW			2		8		SW	0 811	20.6	Very cloudy	Normal School.
Bourg-en-Bresse	28.54	725.0	29.44	747.8	51.6	10.9	70	S			6		10n		S	0.31	8.	Covered	Normal School.
Bourges, Normal School	28.80	731.6	29.34	745.3	47.5	8.6	94	SW			4		2		SE	0.087	2.2	Slightly cl'dy	A. Wagner, Director.
Brest, Naval Observatory	28.87	733.4	29.10	739.0	46.9	8.3	80	WSW			4		9n		WSW	0.226	5.75		The Staff.
Carcassonne, Normal School	29.10	739.0	29.31	749.5	50.7	10.4	97	SW			2		10		SW	0.08	2.	Covered	Vateau, Director.
Caen	28.98	736.2	29.08	738.7	49.5	9.7	76	NE			2		8		NE	0	0	Very cloudy	Normal School.
Chartres, Normal School	28.75	730.2	29.31	744.4	49.6	9.8	74	SW			6		9		E	0	0		Lequin, Director.
Châlons-sur-Marne, N. Sch'l	28.89	733.9	29.21	741.8	54.5	12.5	72	S			6		8ck		S	0	0	Very cloudy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.01	711.4	29.33	745.0	53.4	11.9	70	SW			3		8		W	0.012	0.3	Very cloudy	Alluard, Director.
Commercy, Normal School	28.48	723.5	29.37	746.0	46.0	7.8	94	WSW			2		5		WSW	0	0	Cloudy	Dr. Goulet, Director.
Commune de Gréasque*	28.40	721.4	29.54	750.4	50.9	10.5	80	NE			2		10		SE	0.177	4.5	Covered	V. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	29.04	737.6	29.25	742.9	52.2	11.2	77	W			6		5		W	0.213	5.4	Cloudy	Mouillot, Director.
Le Mans, Normal School	28.88	733.5	29.18	741.2	48.6	9.2	63	W			4		2		W	0.173	4.4	Slightly cl'dy	Poirrier, Director.
Lons-Le-Saulnier, N.School	28.45	722.5	29.35	745.5	50.9	10.5	80	S			2		10		NE	0.022	0.4	Raining	Pin, Director.
Lorient, Naval Observatory	29.08	738.6	29.18	741.1	50.0	10.0	62	WSW			3		10		W	0.331	8.4	Covered	T. Carré, Director.
Mâcon, Normal School	28.73	729.8	29.42	747.3	45.1	7.3	89	Calm			0		10			0	0	Covered	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	28.26	717.7	29.30	744.1	45.0	7.2	83	SSE					10		NNW	0	0	Covered	Normal School.
Nismes, Normal School	29.27	743.5	29.48	748.7	50.4	10.2	82	N			2		5		S	0	0	Cloudy	Boyer, Director.
Orleans, Normal School	28.87	733.3	29.24	742.8	48.7	9.4	81	SW			4		5			0.004	0.1	Cloudy	Bernard, Director.
Paris, Observatory	28.93	734.1	29.14	740.1	48.2	9.0	78	SSW			2		9k		SW	0.004	0.09	Almost cov.	National Observatory.
Privas	28.42	721.8	29.46	748.3	57.2	14	73	S			2		10		S	0	0	Covered	Normal School
Rochefort, Naval Obs'y	29.15	740.3	29.18	741.1	48.2	9.0	86	SW			6		10		SW	0.28	7.	Covered	Lt. Decante, Director.
Rouen, Normal School	28.97	735.8	29.06	738.0	49.5	9.7	70	S			2		10		S	0.012	0.3	Covered	F. Lucard, Director.
Tarbes, Normal School																			T. Hugues, Director.
Villefranche	28.08	728.4	29.38	746.2	52.9	11.6	84	SE			6		5		W	0.110	2.8	Cloudy	Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.80	756.9	29.83	757.6	77.0	25										0.04	1.		L'Abbé Marchési.
Marseilles, Observatory			29.48	748.7	57.2	14.0	67	E			1		9			0.013	1.10	Rainy	The Staff.
Mont-Louis	24.39	619.6	29.71	754.6	43.9	6.6	57	SSW	33.0	14.17			3		SW	0	0		Mr. Falguère.
Nice			29.53	750.0	56.3	13.5	77	SW					10		SW			Raining	Dr. A. Niepce.
Paris, Montsouris Obs'y	28.85	732.9	29.13	739.9	47.7	8.7	78	SW			4		10		SW	0.031	0.8		Marié Davy, Director.
Perpignan			29.42	747.3	56.7	13.7	78	NE	14.9	6.66			8		NW	0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.																			M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.06	560.2			32.2	0.1		SW			6–8		10			0.161	4.1	Snowy	Gen'l de Nansouty.
Saint Maur, (near Paris)	28.98	736.1	29.15	740.3	47.5	8.6	81	SSW			3		10	SSW		0.047	1.2	Rainy	E. Renou.
Toulouse, Observatory	28.78	730.9	29.48	748.9	55.8	13.2	87	S			2		3			0.225	5.73	Raining	The Staff.
Tours	29.04	737.5	29.23	742.5	47.8	8.8	80	W			4		8		W	0.142	3.6		C. Marquet.
Versailles, (near Paris)			29.15	740 3	48.2	9.0	78	SW			3		10			0.090	2.28	Showery	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.30	769.5	30.32	770.1	46.9	8.3	90	E	5.6	2.5			10n			0.110	2.8	Raining	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; for Montsouris, the barometer reduced to freezing but not to sea-level. At Mirecourt the cloud direction is apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg																			Prof. Dr. Hoh.
Berlin	29.34	745.2	29.52	749.8	41.4	5.2	74	S			1		5						Prof. Arndt.
Breslau	29.09	738.8	29.61	752.1	43.3	6.3	91	SSE			2		10			0	0		Prof. Arndt.
Carlsruhe	28.93	734.9	29.35	745.5	50.5	10.3	74	ESE			1		0			0.019	0.47	Foggy	Royal University Obs'y.
Cassel	28.82	732.0	29.41	747.1	45.7	7.6	77	SSE			2		4	SSW		0.063	1.6		Albert Senz.
Crefeld	29.03	737.4	29.19	741.4	47.5	8.6	74	SE			4		8cs;s			0.100	2.53		Dr. H. Möhl.
Emden	29.22	742.2	29.26	743.1	43.7	6.5	89	SSE			3		1	SW		0	0		Director Lose.
Frankfort on the Main	29.04	737.7	29.41	746.9	47.3	8.5		SE			1		4			0	0		Prof. Prestel.
Friedrichshafen	28.03	712.0	29.46	748.2	47.1	8.4	82	W			1		3	WNW		0.295	7.5		Physical Society.
Hamburg	29.30	744.2	29.37	746.0	41.4	5.2	90	SSE			2		2cs	SW		0.008	0.2	Clear	M. Wilhelm.
Kiel	29.33	745.0	29.35	745.4	41.0	5.0	84	S			2		6			0	0		Captain F. Hegemann.
Königsberg, (Prussia)	29.60	751.8	29.68	753.9	37.0	2.8	100	S										Covered	Prof. G. Karsten.
Köslin			29.56	750.9	37.2	2.9		S			2		4			0.035	0.9		Prof. E. Luther.
Leipsic, Observatory	29.07	738.4	29.50	749.2	43.2	6.2	88	SSE			1		4	SW		0.043	1.1		H. Müller.
Memel, Naval School	29.64	752.9	29.69	754.1	38.3	3.5	100	SSE			1		10					Foggy	Prof. Bruhns.
Neufahrwasser	29.65	753.2	29.67	753.6	35.1	1.7	98	SSW			2		10			0.030	1.0	Foggy	Reinbrecht von Skalweit.
Posen	29.35	745.5	29.65	753.1	40.6	4.8	96	SE			3-4		10					Covered	A. Lothes.
Strassburg Obs., (in Alsace	28.83	732.3	29.38	746.2	47.3	8.5	76	S			3		6	SW		0.101	2.57	Raining	Dr. Magener.
Stuttgart	28.64	727.4	29.57	751.1	50.0	10.0	72	S			1		1	S		0.236	6.0		Dr. Schur.
Treves, (Trier)	28.66	728.0	29.17	741.0	48.9	9.4	67	SE			6		7			0.044	1.13	Dense fog	Prof. Schoder.
Weissenburg, (Bavaria)	27.96	710.1	29.47	748.5	42.4	5.8	93	SSW	6	2.5			10			0.425	10.8	Foggy	Prof. Flesch.
Wustrow, Naval School	29.49	749.0	29.52	749.8	39.0	3.9	92	SE			2		10					Covered	Dr. Von Bebber.
German Naval Series.																			E. F. Schütz.

NOTE.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet: Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4, Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.39	746.5	29.78	756.5	59.0	15.0		SE										Cloudy	Dr. J. F. J. Schmidt.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and wind-force; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.97	761.2	30.02	762.5	78.0	25.6	52	S	12.0?	5.4?			0			0	0	Blue sky	
Deesa	29.51	749.5	29.99	761.7	78.5	25.8	27	NW					0			0	0	Blue sky	
Bombay	29.87	758.6	29.90	759.6	82.0	27.8	73	NNW	15.0	6.7			3	S	WSW	0	6	D. clouds	
Poona	27.88	708.2	29.89	759.1	79.1	26.2	76	S					9		W	1.90	48.3	D. clouds	
Lahore	29.27	743.4	30.05	763.2	61.9	16.6	77	Calm	1.5	0.7			0			0	0	Blue sky	
Belgaum	27.38	695.5	29.91	759.7	79.6	26.4	54	Calm					1			0	0	D. clouds	
Bangalore																			
Roorkee	29.05	737.9	29.98	761.5	64.8	18.2	58	NW	2.8	1.2			0			0	0		
Agra	29.40	746.7	29.98	761.4	70.7	21.5	66	N								0	0		
Trichinopoly																			
Nagpur	28.87	733.3	29.92	759.9	79.6	26.4	57	S	2.6	1.2			9			0	0	Gloomy	
Madras																			
Lucknow	29.58	751.3	29.96	761.1	67.4	19.7	55	NW	2.2	1.0			0			0	0	Blue sky	
Allahabad	29.64	752.9	29.96	761.0	67.8	19.9	65	Calm	1.4	0.6			0			0	0	Blue sky	
Patna	29.75	755.6	29.93	760.3	76.7	24.8	47	W	1.1	0.5			4	W	W	0	0	D. clouds	
Hazaribagh	27.91	708.9	29.97	761.1	68.8	20.4	51	W	7.7	3.4			3			0	0	Blue sky	
Cuttack	29.86	758.6	29.95	760.6	79.8	26.6	55	Calm	0.5	0.2			0			0	0	Blue sky	
Calcutta (Alipore)	29.93	760.2	29.95	760.7	74.2	23.4	76	WNW	3.0	1.3			0			0	0	Blue sky	
Goalpara	29.51	749.5	29.91	759.6	70.0	21.1	61	WSW	1.1	0.5			0			0	0	Blue sky	
Chittagong																			
Sibsagar	29.61	752.1	29.96	760.9	64.7	18.2	95	ENE	3.1	1.4			10			0.92	23.4	Overcast	
Rangoon																			
Jubbulpore	28.58	726.0	29.96	761.1	75.0	23.9	91	NW	3.1	1.4			0			0	0	Blue sky	

NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 1—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	21.74	552.3	29.70	754.3	24.6	— 4.1	68	E	.....	.....	2	.....	6	W	.....	*4.725	*120.0	.....	Ab. Dom. Mongini.
Stelvio	21.73	551.9	29.70	754.4	24.6	— 4.1	.....	SSW	.....	.....	2	.....	4	W	.....	0.004	0.1	.....	Signora Ernesta Manfredi.
Udine	29.10	739.2	29.52	749.8	52.3	11.3	78	N	3.1	1.4	.....	.....	10	.....	.....	0.445	11.3	.....	Prof. Giovanni Clodig.
Padua	29.43	747.4	29.54	750.2	48.0	8.9	82	NW	6.9	3.1	.....	.....	10	W	.....	0.248	6.3	.....	Prof. Dott. Lorenzoni.
Vicenza	29.36	745.7	29.56	750.7	47.7	8.7	81	SW	3.8	1.7	.....	.....	5	.....	.....	0.213	5.4	.....	Conte Alm. Da Schio.
Verona	29.28	743.6	29.50	749.3	53.6	12.0	83	NE	0	0	.....	.....	10	.....	.....	0.228	5.8	.....	Dott. B. Bertoncelli.
Bergamo	28.24	717.3	29.58	751.4	46.4	8.0	72	SSW	.....	.....	1	.....	9	.....	.....	0	0	.....	Prof. Trionfini Carlo.
Domodossola	28.54	725.0	29.59	751.6	44.6	7.0	77	E	.....	.....	1	.....	8	.....	.....	0	0	.....	Prof. Giuseppe Calza.
Milan	29.06	738.2	29.60	751.7	44.2	6.8	.....	NNW	.....	.....	4	.....	9	WSW	.....	0.406	10.3	.....	Ab. Gio. Capelli.
Pavia	29.24	742.6	29.59	751.6	42.3	5.7	67	W	.....	.....	1	.....	10	.....	.....	0.126	3.2	.....	Prof. Gio. Cantoni.
Moncalieri	28.67	728.2	29.59	751.6	45.5	7.5	54	SSE	4.3	1.9	.....	.....	1	.....	.....	0.039	1.0	.....	Prof. P. F. Denza.
Mondovi	27.65	702.2	29.58	751.3	43.3	6.3	59	NNW	.....	.....	2	.....	0	.....	.....	0	0	.....	Prof. D. C. Bruno.
Porto Maurizio	29.35	745.4	29.57	751.0	55.0	12.8	68	E	.....	.....	2	.....	5	W	.....	0.020	0.5	.....	Prof. L. Vassallo.
Genoa	29.30	746.6	29.56	750.9	53.4	11.9	70	E	0.7	0.3	.....	.....	10	SE	.....	0.165	4.2	.....	Prof. G. M. Garibaldi.
Piacenza	29.32	744.8	29.58	751.3	45.3	7.4	71	NW	6.3	2.8	.....	.....	8	SW	.....	0.260	6.6	.....	Dott. G. Manzi.
Parma	29.27	743.4	29.59	751.6	46.4	8.0	78	WSW	.....	.....	2	.....	4	.....	.....	0.441	11.2	.....	Prof. P. Pigorini.
Florence	29.34	745.1	29.60	751.7	52.3	11.3	78	NE	.....	.....	2	.....	7	WSW	.....	0.709	18.0	.....	Cav. F. Meucci.
Leghorn	29.50	749.2	29.58	751.4	57.6	14.2	88	W	1.3	0.6	.....	.....	10	W	.....	0	0	.....	Prof. P. Monte.
Siena	28.40	721.3	29.02	752.3	49.3	9.6	68	W	0.7	0.3	.....	.....	9	W	.....	0.008	0.2	.....	Prof. L. Toscani.
Urbino	28.04	712.1	29.61	762.0	48.9	9.4	85	SW	.....	.....	2	.....	10	.....	.....	1.024	26.0	.....	Prof. P. Serpieri.
Pesaro	29.54	750.2	29.59	751.5	49.8	9.9	82	NW	0	0	.....	.....	10	NW	.....	0.079	2.0	.....	Prof. Luigi Guidi.
Ancona	29.47	748.4	29.57	751.1	50.7	10.4	84	NW	.....	.....	4	.....	10	.....	.....	0.937	23.8	.....	Prof. F. DeBosis.
Grosseto	29.51	749.5	29.62	752.4	56.6	14.8	75	SSE	.....	.....	2	.....	3	SE	.....	0.665	16.9	.....	Avv. P. Ponticelli.
Rome	29.47	748.5	29.65	753.0	61.3	16.3	65	W	5.6	2.5	.....	.....	4	.....	.....	0.236	6.0	.....	Prof. P. A. Secchi.
Naples, O. U.	29.44	747.7	29.64	752.8	63.7	17.6	63	WSW	.....	.....	4	.....	6	WSW	.....	0.779	20.3	.....	Prof. L. Palmieri.
Lecce	.....	.....	.....	.....	63.1	17.3	66	W	12.5	5.6	.....	.....	6	.....	.....	0.142	3.6	.....	Prof. C. De Giorgi.
Cosenza	28.82	732.0	29.72	754.8	60.8	16.0	75	SE	1.3	0.6	.....	.....	8	.....	.....	0.063	1.6	.....	Prof. F. D. Conti.
Cagliari	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. A. Pacinotti.
Riposto, (Sicily)	.....	.....	.....	.....	64.9	18.3	80	NE	.....	.....	2	.....	8	S	.....	0	0	.....	Prof. F. Cafiero.
Palermo	29.41	747.1	29.67*	753.6	65.8	18.8	59	WSW	9.4	4.2	.....	.....	3	.....	.....	0	0	.....	Prof. G. Cacciatore.
Caltanissetta	27.77	705.4	29.72	755.0	58.3	14.6	74	WNW	.....	.....	4	.....	3	S	.....	0	0	.....	Prof. A. Pagani.
Syracuse	29.67	753.7	29.71	754.6	67.5	19.7	58	SW	.....	.....	4	.....	8	SW	.....	0	0	.....	Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.13	739.9	29.69	754.0	60.1	15.6	70	NW	13.7	6.1	.....	.....	3	.....	.....	0.063	1.6	.....	Prof. F. Brioschi.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,543.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Siena, 348.5 m., or 1,143.3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft *Unmelted snow.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Tokei (Yeddo)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	The Observatory.
Tokei (Yeddo) University	30.37	771.3	30.48	773.4	38	3.3	72	N	1	0.4	.....	.....	.....	.....	.....	0	0	Clear	Prof. P. V. Veeder.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Aguascalientes	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	I. N. Marin, M. D.
Córdoba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	C. Peña, M. D.
Cuernavaca	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	L. Castillo, A. E.
Guadalajara	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. L. Perez.
Guanajuato	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. V. Fernandez.
Leon	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. M. Leal.
Mexico	23.09	586.6	30.19	766.7	58.1	11.7	81	Calm	0	0	.....	0	Haze	.....	.....	0.05	1.3	Hazy	Central Observatory.
Orizaba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	N. N.
Orizaba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	I. Orozco, M. D.
Pabellon, (Aguascalts)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. V. de Leon, M. E.
Puebla	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. B. Gonzalez.
Toluca	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. C. Velazquez.
Tlacotalpam	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. F. R. Bayly.
San Luis Potosi	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	G. Barreda, M. D.
Vera-Cruz	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. J. Rossell.
Zacatecas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. A. Bonilla, M. E.
Puebla, (Catholic Institute)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	P. Spina. [M. M. D. D.
Morelia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Tena, F. L. Páramo

NOTE.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,299 m., or 7,542.9 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m,, or 8,611.8 ft.; San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	29.00	736.5	29.00	736.5	47.3	8.5	.....	SSE	.....	.....	5	.....	.....	.....	.....	0	0	.....	
Groningen	29.11	739.4	29.17	740.8	44.2	6.8	.....	S	.....	.....	4	.....	.....	.....	.....	0.012	0.3	.....	
Helder	29.03	737.4	29.03	737.4	45.5	7.5	.....	SE	.....	.....	5	.....	.....	.....	.....	0.047	1.2	.....	
Hellevoetsluis	.....	.....	29.03	737.3	46.8	8.2	86	SE	.....	.....	7	.....	.....	.....	.....	.....	.....	.....	
Utrecht	29.05	737.9	29.10	739.1	46.8	8.2	78	SSE	.....	.....	5	.....	8	.....	.....	0.079	2.0	Very cloudy	H. v d Brink.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer, corrected for instrum'tal error and temperature. Inches.	Barometer, corrected for instrum'tal error and temperature. Millimeters.	Barometer, reduced to sea-level. Inches.	Barometer, reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	29.09	738.9	29.15	740.3	42.1	5.6	75	S	14.1	6.3	.....	.....	4	.....	.....	0	0	.....	
Brönö	29.05	737.8	29.09	738.8	39.2	4.0	58	S	9	4	.....	.....	8	.....	.....	0	0	.....	
Christiania	29.22	742.1	29.37	745.9	34.5	1.4	98	NW	0	0	.....	.....	10	.....	.....	0.484	12.3	Foggy	
Tromsö	29.08	738.5	29.12	739.6	34.5	1.4	92	Calm	0	0	.....	.....	10	.....	.....	0.236	6.0	Snowing.....	
.....																			

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	30.00	762.0	30.19	766.9	58.5	14.7	80	ENE	6.3	2.8	.....	.....	6	.....	.....	0	0	.....	Dr. J. A. Sampaio.
Campo Major	28.82	732.1	29.86	758.4	57.7	14.3	68	SW	15.0	6.7	.....	.....	10	WSW	.....	0.126	3.2	.....	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.00	762.0	30.09	764.2	70.0	21.1	81	Calm	0	0	.....	.....	10	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.54	750.3	29.90	759.5	57.7	14.3	92	W	18.6	8.3	.....	.....	10	.....	.....	0.303	7.7	Raining.....	The Staff.
Ponta Delgada, (Azores)	30.12	765.0	30.19	766.8	60.4	15.8	61	NE	1.8	0.8	.....	.....	10	.....	.....	0	0	.....	
.....																			
.....																			

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

Naval Series. Vessels.	Sea or swell. Height scale 0–9	Sea or swell. Direction from—		
S. S. India.				A. D. Pedroso, Com'd't. Lt. S. A. P. de Mirando
.....				
.....				

Note.—The originals give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.24	742.8	29.68	753.8	38.1	3.4	98	Calm	0	0	.....	.....	10	.....	.....	.....	.....	Foggy	Astronomical Obs.
Wilna	29.31	744.5	29.74	755.4	37.8	3.2	85	S	4	2	.....	.....	10	.....	.....	.....	.....	Heavy clouds	Astronomical Obs.
Dorpat	29.43	747.5	29.68	753.8	35.4	1.9	98	S	9	4	.....	.....	10	.....	.....	.....	.....	.....	Prof. Dr. Weihrauch.
St. Petersburg	29.68	753.9	29.70	754.3	37.9	3.3	92	SSE	13	6	.....	.....	10	.....	.....	.....	.....	.....	Central Physical Obs.
Kuopio	29.17	740.8	29.49	749.1	36.5	2.5	100	S	22	10	.....	.....	10	.....	.....	Blank	Blank	.....	Ch. Forsten.
Kieff	29.17	740.9	29.82	757.3	40.8	4.9	86	S	7	3	.....	.....	10	.....	.....	.....	.....	.....	Physical Cabinet.
Nikolaiev	29.87	758.7	29.94	760.5	44.4	6.9	67	S	0	0	.....	.....	0	.....	.....	.....	.....	.....	Kurdakof.
Kertch	29.92	759.9	29.94	760.4	47.1	8.4	92	NNW	2	1	.....	.....	10	.....	.....	.....	.....	.....	Lagorio.
Moscow	29.51	749.6	30.10	764.6	33.1	0.6	83	S	6	4	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Lugan	29.76	756.0	29.98	761.4	33.4	0.8	71	ESE	13	6	.....	.....	10	.....	.....	Blank	Blank	.....	Meteorological Obs.
Archangel	29.75	755.7	29.77	756.2	33.4	0.8	100	SSE	18	8	.....	.....	10	.....	.....	.....	.....	Raining.....	Ogorodnikof.
Tiflis	28.43	722.1	29.85	758.2	51.8	11.0	60	NW	4	2	.....	.....	8	.....	.....	.....	.....	.....	Physical Observatory.
Astrakhan	30.17	766.4	30.09	764.3	35.6	2.0	84	E	13	6	.....	.....	10	.....	.....	.....	.....	.....	Sebastianof.
Kasan	30.05	763.3	30.34	770.6	23.7	— 4.6	77	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Physical Cabinet.
Orenburg																			Tschernischef.
Ekaterinburg	29.37	746.1	30.37	771.5	27.9	— 2.3	49	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Meteorological Obs.
Nukuss	29.75	755.7	29.99	761.8	40.5	4.7	70	NNE	4	2	.....	.....	3	.....	.....	.....	.....	.....	
Kasaly																			Bobrof.
Tashkend	28.50	724.0	30.24	768.0	49.6	9.8	42	NW	7	3	.....	.....	8	.....	.....	.....	.....	.....	Michelson.
Barnaul	29.88	758.9	30.45	773.4	16.2	— 8.8	91	SW	0	0	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Yeniseisk	29.86	758.4	30.21	767.2	18.7	— 7.4	88	W	4	2	.....	.....	10	.....	.....	.....	.....	Snowing.....	Marks.
Irkutsk																			Usolzef.
Oorga																			Mossin.
Peking, (China)	30.20	767.1	30.34	770.7	26.8	— 2.9	74	Calm	0	0	.....	.....	2	.....	.....	.....	.....	.....	Physical Observatory.
Nertchinsk																			Meteorological Obs.
Vladivostock																			
Nikolaievsk, on the Amoor					—15.2	—26.2		Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	
.....																			
.....																			

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Rave, Director.
Bilbao, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Manuel de Naveran
Burgos, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Domingo Martin y Perez.
Madrid, Royal Observatory	27.47	697.7	29.69	754.2	52.2	11.2	74	SW	5.0	2.22	.....	0	7	.....	.....	0.059	1.5	Almost cov.	The Staff.
Murcia, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Olayo Diaz, Director.
Santiago, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I	29.84	757.8	29.90	759.5	74.6	23.7	86	WSW	2.9	1.3	.....	0	2k	.....	.....	0	0	Clear.....	Benito Vines, S. J.
San Fernando, Naval Obs'y	29.89	759.2	29.99	761.7	63.3	17.4	70	SW	15.9	7.1	.....	0	8	.....	WNW	0.044	1.1	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I	.....	.....	29.91	759.6	76.3	24.6	92	S	0	0	.....	3cs	3k	E	E	0.157	4.00	D. clouds.....	Leonardo de Tejeda, Chief of Engineers.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the cöoperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.32	744.8	29.36	745.8	33.8	1.0	.....	S	.....	.....	4	.....	10	.....	.....	0.276	7.0	.....	
Umea	29.24	742.6	29.29	743.9	35.6	2.0	100	S	.....	.....	2	.....	10	.....	.....	0.425	10.8	Snowing	
Hernosand	29.23	742.5	29.28	743.8	34.2	1.2	92	SSW	.....	.....	4	.....	7	.....	.....	0.224	5.7	.....	
Stockholm	29.28	743.8	29.46	748.3	38.1	3.4	87	SSW	.....	.....	2	.....	5	.....	.....	0.142	3.6	.....	
Wisby	29.48	748.9	29.54	750.4	39.2	4.0	87	SW	.....	.....	4	.....	3	.....	.....	0.165	4.2	.....	
Sub-Series.																			
Upsala	29.38	746.2	29.45	748.1	37.2	2.9	97	S	7.2	3.2	.....	.....	10	.....	SW	0.010	0.25	.....	Dr. Hildebrandsson.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.02	711.8	29.47	748.6	46.6	8.1	79	E	.....	.....	1	.....	9	.....	.....	0.122	3.1	Covered	The Observatory.
Zurich	27.84	707.0	29.49	749.1	48.2	9.0	85	W	.....	.....	1	.....	8	.....	.....	0.315	8.0	Bright	The Observatory.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—For Geneva the corresponding departures from the normal values are: Barometer, —15.0 mm; Thermometer, +3.6 cent.; Relative Humidity, +1 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	29.89	759.2	51.1	10.6	69	ESE	7	3.0	.....	.....	8	.....	SE	0	0	.....	The Observatory.
Fao, (Persian Gulf)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salonica	.....	.....	.....	.....	50.9	10.5	.....	SE	.....	.....	1	.....	10	.....	.....	.....	.....	Light rain	B. Stefanides.
Valona	.....	.....	29.95	753.2	63.1	17.3	.....	S	.....	.....	2	.....	10	.....	.....	0.39	10.	Rainy	A. Bertrand.
Varna	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Imperial Observatory.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.89	759.2	30.01	762.2	65.5	18.6	50	W	.....	.....	2	.....	8n	.....	W	0.58	14.7	D. clouds	Prof. C. V. A. Van Dyck

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second); the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	29.83	757.7	29.90	759.4	33.7	0.9	92	Calm	0	0	.....	7	.....	.....	.....	.....	.....	.....	Hon. J. Ferguson.
Brockville, Ontario	29.58	751.3	29.89	759.2	33	0.6	.....	Calm	0	0	.....	.....	10s	.....	SW	0.06	1.5	Cloudy	W. R. Bigg.
*Chatham, N. B	.....	.....	29.92	760.0	32	0.0	91	S	1	0.4	.....	.....	10ks	.....	S	0.10	2.5	Cloudy	G. A. Blair.
Charlottetown, P. E. Island	.....	.....	29.98	761.5	40	4.4	84	SW	8	3.6	.....	.....	10s *	.....	Calm	0.070	1.78	Cloudy	H. J. Cundall, C. E.
Cornwall, Ontario	29.64	752.8	29.83	757.7	34.7	1.5	97	S	.....	.....	1	.....	10s	.....	.....	0.232	5.89	Cloudy	James Smith, M. A.
Dalhousie, N. B	29.85	758.2	29.88	758.9	32	0.0	98	W	.....	.....	1	.....	.....	.....	.....	0.27	6.9	Clear	H. A. Johnson.
Esquimault, B. C	30.17	766.3	30.22	767.6	36.1	2.3	83	N	.....	.....	.....	0	0	.....	.....	0	0	Clear	W. H. Bevis.
*Father Point, Quebec	.....	.....	29.84	757.9	34	1.1	88	S	16	7.2	.....	2k	5s	SW	SW	0.20	6.6	Clearing	J. McWilliams.
Fredericton, N. B	29.92	760.0	29.99	761.7	33.0	0.6	92	Calm	0	0	.....	.....	10s	.....	.....	0.130	3.30	Foggy	Prof. Harrison.
*Fort Garry, Manitoba	29.48	748.8	30.39	771.9	10	—12.2	89	N	16	7.2	.....	5k	5n	N	N	0.080	2.03	Light snow	James Stewart.
Goderich, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	H. J. Strang, M. A.
Granton, Ontario	28.73	729.7	29.90	759.4	21.3	— 5.9	100	SW	.....	.....	2	.....	10n	.....	.....	Inap.	Inap.	Cloudy	James Grant.
*Halifax, N. S	29.85	758.2	29.99	761.7	42	5.6	96	Calm	0	0	.....	.....	Fog	.....	.....	0.382	9.70	Foggy	F. Allison, M. A.
Hamilton, Ontario	29.31	744.5	29.90	759.4	29.2	— 1.6	68	SW	.....	.....	1	6cs	.....	SW	.....	0	0	Cloudy	Geo. Dickson, M. A
Heart's Content, N. F	29.87	758.7	29.90	759.4	43	6.1	83	SW	.....	.....	1	.....	10	.....	.....	0.29	7.4	Overcast	E. Weedon.
*Kingston, Ontario	29.55	750.6	29.90	759.4	33	0.6	85	Calm	0	0	.....	.....	10ks	.....	W	0.02	0.5	Cloudy	S. Woods, M. A.
Little Glace Bay, N. S	29.94	760.5	29.98	761.5	42.4	5.8	95	S	4	1.8	.....	.....	10n	.....	.....	0.28	7.1	Overcast	C. H. Rigby.
*Montreal, Quebec	29.66	753.4	29.87	758.7	36	2.2	85	W	8	1.3	.....	.....	10n	.....	.....	0.05	1.3	Cloudy	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.66	738.1	29.78	756.4	31	— 0.6	95	SW	.....	.....	.....	.....	10n	.....	SW	0.28	7.1	Light snow	Rev. R. Mosley.
Peterboro, Ontario	29.69	738.9	29.86	758.4	30.9	— 0.6	85	SW	.....	.....	1	.....	10ks	.....	.....	0	0	Dull	J. F. Jeffers, B. A.
Port Dover, Ontario	29.19	741.4	29.92	760.0	25	— 3.9	87	W	10	4.5	.....	5k	5n	SW	SW	0.25	6.3	Cloudy	H. Morgan.
Port Hastings, N. S	29.95	760.7	30.00	762.0	48	8.9	.....	W	2	0.9	.....	.....	.....	.....	.....	1.00	25.4	Fine	Peter Grant.
Port Stanley, Ontario	29.25	742.9	29.93	760.2	24	— 4.4	85	W	14	6.3	.....	.....	10ks	.....	SW	Inap.	Inap.	Cloudy	M. Payne.
*Quebec, Quebec	29.57	751.1	29.90	759.4	35	1.7	90	Calm	0	0	.....	.....	10n	.....	Calm	0.22	5.6	Heavy rain	Capt. Ashe, R. N
*Rockliffe, Ontario	29.34	745.2	29.82	757.4	30	— 1.1	80	E	4	1.8	.....	.....	8s	.....	W	0.04	1.0	Cloudy	W. H. McIntyre.
St. John, N. B	29.80	756.9	29.97	761.2	38	3.3	95	Calm	0	0	.....	.....	10s	.....	.....	0.445	11.31	Cloudy	G. Murdock, C. E.
*Saugeen, Ontario	29.07	738.4	29.80	756.9	28	— 2.2	95	SW	7	3.1	.....	.....	10s	.....	.....	0.08	2.0	Light snow	K. Stewart.
Stayner, Ontario	29.04	737.6	29.86	758.4	28	— 2.2	84	SE	5	2.2	.....	.....	10ks	.....	SE	0	0	Cloudy	R. J. Cole.
Stratford, Ontario	28.55	725.2	29.90	759.4	22.4	— 5.3	90	W	10.0	4.5	.....	.....	10s	.....	.....	0.03	0.8	Cloudy	C. J. MacGregor, M. A.
*Sydney, C. B	29.97	761.2	30.00	762.0	43	6.1	91	SW	6	2.7	.....	.....	10n	.....	.....	0.23	5.8	Cloudy	T. C. Hill.
*Toronto, Ontario	29.48	748.8	29.88	758.9	30	— 1.1	78	SW	4	1.8	.....	.....	8ks	.....	SW	0	0	Cloudy	Magnetic Observatory.
Windsor, N. S	29.89	759.2	29.99	761.7	40.0	4.4	91	E	2	0.9	.....	.....	10n	.....	.....	0	0	Fair	Prof. John E. Oram.
Woodstock, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Montgomery.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	44.0	6.7	96	SW	.....	.....	.....	ks	10s; n	.....	.....	0.07	1.8	Fair	John Delany.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.66	753.4	29.89	759.2	41	5.0	82	Calm	0	0	.....	.....	10n	.....	Calm	Inap.	Inap.	Light rain...	
Alpena, Michigan	29.11	739.4	29.78	756.4	26	— 3.3	88	SW	4	1.8	.....	.....	10s	.....	Calm	0.07	1.8	Cloudy.....	
Atlantic City, New Jersey	29.75	755.6	29.77	756.1	46	7.8	92	N	12	5.4	.....	.....	10n	.....	NE	0.50	12.7	Light rain...	
Augusta, Georgia	29.77	756.1	29.96	761.0	43	6.1	76	NW	6	2.7	.....	2c	Haze	SW	Calm	0.10	2.5	Hazy	
Baltimore, Maryland	29.80	756.9	29.85	758.2	42	5.6	74	NW	10	4.5	.....	.....	10n	.....	NW	Inap.	Inap.	Light rain...	
Barnegat, New Jersey	29.76	755.9	29.78	756.4	46	7.8	92	NE	16	7.2	.....	.....	10n	.....	E	0.45	11.4	Light rain...	
Bismarck, Dakota	28.58	725.9	30.48	774.2	1	—17.2	71	NW	20	8.9	.....	.....	10s	.....	NW	Inap.	Inap.	Cloudy.....	
Boise City, Idaho	27.54	699.5	30.34	770.6	26	— 3.3	88	S	4	1.8	.....	5c	2k	Calm	Calm	0	0	Fair	
Boston, Massachusetts	29.72	754.9	29.88	758.9	41	5.0	82	NE	4	1.8	.....	.....	10n;fg	.....	.....	0.13	3.3	Light rain...	
Brackettville, Texas	29.21	741.9	30.30	769.6	30	— 1.1	59	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Breckenridge, Minnesota	29.22	742.2	30.34	770.6	3	—16.1	87	NW	20	8.9	.....	0	8ks	.....	Ca'm	0	0	Cloudy.....	
Brownsville, Texas	30.34	770.6	30.41	772.4	42	5.6	57	N	8	3.6	.....	.....	10s	.....	Calm	0	0	Cloudy.....	
Buffalo, New York	29.14	740.1	29.86	758.4	27	— 2.8	88	W	1	0.4	.....	.....	10n	.....	W	0.07	1.8	Heavy snow	
Burlington, Vermont	29.61	752.1	29.88	758.9	41	5.0	82	Calm	0	0	.....	.....	10s	.....	Calm	0.03	0.8	Cloudy.....	
Cairo, Illinois	29.90	759.4	30.33	770.4	23	— 5.0	60	NW	13	5.8	.....	0	0	.....	.....	0	0	Clear.....	
Camp Grant, Arizona	25.24	641.1	30.04	763.0	26	— 3.3	40	NW	.....	.....	1	0	0	.....	.....	0	0	Clear	
Camp Verde, Arizona	26.92	683.8	30.41	772.4	22	— 5.6	58	NW	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Campo, California	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Cape Hatteras, N. Carolina	29.60	751.8	29.61	752.1	53	11.7	93	NE	20	8.9	.....	.....	10s	.....	NE	1.40	35.6	Cloudy.....	
Cape Henry, Virginia	29.77	756.1	29.79	756.7	51	10.6	93	N	10	4.5	.....	.....	10n	.....	Calm	1.30	33.0	Light rain...	
Cape Lookout, N. Carolina	29.73	755.1	29.74	755.4	52	11.1	93	N	15	6.7	.....	.....	10s	.....	N	1.48	37.6	Cloudy.....	
Cape May, New Jersey	29.73	755.1	29.76	755.9	47	8.3	92	E	9	4.0	.....	.....	10s	.....	SW	0.05	1.3	Cloudy.....	
Charleston, South Carolina	29.83	757.7	29.89	759.2	50	10.0	86	NW	7	3.1	.....	.....	10s	.....	W	0.35	8.9	Cloudy.....	
Cheyenne, Wyoming	24.14	613.1	30.08	764.0	1	—17.2	85	NW	28	12.5	.....	0	0	.....	.....	0	0	Clear.....	
Chicago, Illinois	29.24	742 7	29.99	761.7	15	— 9.4	82	W	10	4.5	.....	.....	10s	.....	Calm	0.05	1.3	Cloudy.....	
Cincinnati, Ohio	29.38	746.2	30.06	763.5	28	— 2.2	77	W	8	3.6	.....	.....	10n	.....	W	0.01	0.3	Light snow..	
Cleveland, Ohio	29.26	743.2	30.03	762.7	22	— 5.6	72	SW	7	3.1	.....	.....	10s	.....	SW	0.02	0.5	Cloudy.....	
Concho, Texas	28.42	721.9	30.26	768.6	20	— 6.7	27	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.....	
Corsicana, Texas	29.97	761.2	30.50	774.7	21	— 6.1	56	N	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Davenport, Iowa	29.50	749.3	30.21	767.3	7	—13.9	88	NW	20	8.9	.....	Haze	4s	.....	Calm	0.01	0.3	Fair	
Denison, Texas	29.63	752.6	30.51	774.9	24	— 4.4	74	N	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Denver, Colorado	25.00	635.0	30.22	767.6	—12	—24.4	75	W	4	1.8	.....	0	0	.....	.....	0.02	0.5	Clear.....	
Detroit, Michigan	29.22	742.2	29.93	760.2	17	— 8.3	67	W	12	5.4	.....	0	8s	.....	W	0.02	0.5	Fair.....	
Dodge City, Kansas	27.84	707.1	30.47	773.9	0	—17.8	85	N	28	12.5	.....	0	2s	.....	N	Inap.	Inap.	Fair	
Dubuque, Iowa	29.38	746.2	30.15	765.8	7	—13.9	77	NW	11	4.9	.....	.....	10s	.....	Calm	0.05	1.3	Cloudy.....	
Duluth, Minnesota	29.28	743.7	30.02	762.5	10	—12.2	89	N	12	5.4	.....	.....	10s	.....	N	0	0	Cloudy.....	
Eagle Pass, Texas	29.62	752.3	30.42	772.7	32	0.0	50	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.....	
Eastport, Maine	29.87	758.7	29.94	760.5	44	6.7	75	SE	4	1.8	.....	.....	10s	.....	Calm	0.13	3.3	Threatening	
Erie, Pennsylvania	29.16	740.7	29.90	759.4	30	— 1.1	78	W	8	3.6	.....	2k	5ks	SW	SW	0	0	Cloudy.....	
Escanaba, Michigan	29.17	740.9	29.86	758.4	18	— 7.8	84	W	12	5.4	.....	.....	10s	.....	W	0.02	0.5	Cloudy.....	
Florence, Arizona	29.51	749.5	30.11	764.8	42	5.6	20	E	.....	.....	.....	0	0	.....	.....	0	0	Clear.....	
Fort Bayard, New Mexico	24.06	611.1	30.06	763.5	14	—10.0	46	NW	6	2.7	.....	0	0	.....	.....	0	0	Clear.....	
Fort Craig, New Mexico	25.69	652.5	.....	.....	16	— 8.9	53	Ca'm	0	0	.....	0	0	.....	.....	0	0	Clear.....	
Fort Gibson, Indian Ter	29.87	758.7	30.47	773.9	17	— 8.3	83	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Fort Griffin, Texas	29.14	740.1	30.54	775.7	21	— 6.1	86	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.....	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	29.15	740.4	30.36	771.1	25	— 3.9	75	SW	5	2.2	.....	.....	10s	.....	NW	0	0	Cloudy.....	
Galveston, Texas	30.36	771.1	30.40	772.1	36	2.2	53	NE	21	9.4	.....	0	0	.....	.....	0	0	Clear.....	
Grand Haven, Michigan	29.21	741.9	29.88	758.9	27	— 2.8	88	W	9	4.0	.....	.....	10n	.....	Calm	0.24	6.1	Light snow..	
Indianapolis, Indiana	29.26	743.2	30.10	764.5	19	— 7.2	84	W	6	2.7	.....	.....	10n	.....	W	0.04	1.0	Light snow..	
Indianola, Texas	30.44	773.2	30.47	773.9	33	0.6	51	N	26	11.6	.....	0	0	.....	.....	0	0	Clear.....	
Jacksboro, Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Jacksonville, Florida	29.92	760.0	29.95	760.7	50	10.0	71	NW	8	3.6	.....	.....	10s	.....	NW	0.57	14.5	Cloudy.....	
Keokuk, Iowa	29.58	751.3	30.27	768.8	10	—12.2	68	NW	14	6.3	.....	0	4s	.....	Calm	0.02	0.5	Fair	
Key West, Florida	29.85	758.2	29.89	759.2	74.5	23.6	85	NW	5	2.2	.....	.....	10n	.....	NW	1.18	30.0	Light rain...	
Kityhawk, North Carolina	29.68	753.9	29.71	754.6	52	11.1	100	NE	28	12.5	.....	.....	10n	.....	NE	1.56	39.6	Light rain...	
Knoxville, Tennessee	29.05	737.9	30.10	764.5	31	— 0.6	60	NW	12	5.4	.....	.....	10ks	.....	NW	0	0	Cloudy.....	
La Crosse, Wisconsin	29.29	744.0	30.09	764.3	9	—12.8	100	NW	11	4.9	.....	.....	10n	.....	NW	0.10	2.5	Light snow..	
La Mesilla, New Mexico	26.25	666.7	30.40	772.1	16	— 8.9	66	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Laredo, Texas	.....	.....	.....	.....	31	— 0.6	68	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.....	
Leavenworth, Kansas	29.54	750.3	30.49	774.4	9	—12.8	78	NW	14	6.3	.....	0	0	.....	.....	0	0	Clear.....	
Los Angeles, California	29.62	752.3	30.06	763.5	48	8.9	10	N	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Louisville, Kentucky	29.53	750.0	30.12	765.0	28	— 2.2	88	W	15	6.7	.....	.....	10s	.....	W	Inap.	Inap.	Cloudy.....	
Lynchburg, Virginia	29.14	740.1	29.82	757.4	47	8.3	48	NW	6	2.7	.....	.....	10s	.....	W	0	0	Cloudy.....	
Maricopa Wells, Arizona	.....	.....	.....	.....	24	— 4.4	33	N	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Marquette, Michigan	29.07	738.4	29.80	756.9	20	— 6.7	69	W	8	3.6	.....	.....	10s	.....	Calm	0.18	4.6	Cloudy.....	
Mason, Texas	28.73	729.7	30.70	779.8	15	— 9.4	16	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Memphis, Tennessee	30.04	763.0	30.38	771.6	23	— 5.0	72	NW	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Milwaukee, Wisconsin	29.24	742.7	29.99	761.7	11	—11.7	100	NW	15	6.7	.....	.....	10n	.....	.....	0.06	1.5	Light snow..	
Mobile, Alabama	30.19	766.8	30.24	768.1	36	2.2	62	N	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Montgomery, Alabama	29.93	760.2	30.18	766.6	34.5	1.4	74	NW	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Morgantown, West Virginia	28.87	733.3	29.96	761.0	34	1.1	61	W	14	6.3	.....	.....	10s	.....	W	0.03	0.8	Cloudy.....	
Mt. Washington, N. H.	23.49	596.6	29.85	758.2	17	— 8.3	100	SE	12	5.4	.....	.....	10n	.....	SE	0.03	0.8	Light snow..	
Nashville, Tennessee	29.63	752.6	30.20	767.1	29	— 1.7	67	NW	8	3.6	.....	5k	0	NW	.....	0	0	Cloudy.....	
New Haven, Connecticut	29.73	755.1	29.85	758.2	42	5.6	83	NE	6	2.7	.....	.....	10n	.....	.....	0.48	12.2	Light rain...	
New London, Connecticut	29.82	757.4	29.87	758.7	44	6.7	92	NE	4	1.8	.....	.....	10n	.....	E	0.16	4.1	Light rain...	
New Orleans, Louisiana	30.22	767.6	30.28	769.1	40	4.4	56	NW	14	6.3	.....	0	2s	.....	NW	0	0	Clear	
Newport, Rhode Island	29.82	757.4	29.87	758.7	45	7.2	84	E	4	1.8	.....	.....	10n	.....	E	0.12	3.0	Light rain...	
New York, New York	29.64	752.8	29.82	757.4	44	6.7	84	E	13	5.8	.....	.....	10n	.....	E	0.12	3.0	Light rain...	
Norfolk, Virginia	29.70	754.4	29.76	755.9	50	10.0	100	NW	9	4.0	.....	.....	10n	.....	NW	1.00	25.4	Light rain...	
North Platte, Nebraska	27.45	697.2	30.45	773.4	—9	—22.8	56	NW	20	8.9	.....	0	0	.....	.....	Inap.	Inap.	Clear	
Olympia, Washington Ter.	30.13	765.3	30.17	766.3	28	— 2.2	88	S	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Omaha, Nebraska	29.28	743.7	30.51	774.9	0	—17.8	100	NW	18	8.0	.....	0	2s	.....	Calm	0	0	Clear	
Oswego, New York	29.53	750.0	29.86	758.4	40	4.4	56	SW	7	3.1	.....	.....	10s	.....	W	0	0	Cloudy.....	
Pembina, Dakota	29.48	748.8	30.38	771.6	12	—11.1	100	NW	22	9.8	.....	.....	10n	.....	NW	0.02	0.5	Light snow..	
Philadelphia, Pennsylvania	29.76	755.9	29.82	757.4	42	5.6	83	N	11	4.9	.....	.....	10s	.....	NE	0.01	0.3	Cloudy.....	
Phœnix, Arizona	.....	.....	.....	.....	29	— 1.7	78	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Pike's Peak, Colorado	17.46	443.5	29.67	753.6	—15	—26.1	42	NE	52	23.2	.....	0	0	.....	.....	0	0	Clear	
Pioche, Nevada	24.20	614.7	29.97	761.2	22	— 5.6	52	NW	7	3.1	.....	0	0	.....	.....	0	0	Clear	
Pittsburg, Pennsylvania	29.07	738.4	29.91	759.7	30	— 1.1	68	NW	5	2.2	.....	.....	10s	.....	NW	0	0	Cloudy.....	
Port Huron, Michigan	29.20	741.7	29.90	759.4	20	— 6.7	70	SW	14	6.3	.....	.....	10s	.....	Calm	Inap.	Inap.	Cloudy.....	
Portland, Maine	29.82	757.4	29.87	758.7	44	6.7	84	Calm	0	0	.....	.....	Fog	.....	Calm	Inap.	Inap.	Foggy	
Portland, Oregon	30.20	767.1	30.30	769.6	41	5.0	64	SE	3	1.3	.....	0	2ks	.....	SE	0	0	Clear	
Prescott, Arizona	24.86	631.4	30.22	767.6	17	— 8.3	83	NE	.....	.....	.....	2cs	0	Calm	.....	0	0	Fair	
Punta Rassa, Florida	29.90	759.4	29.91	759.7	71	21.7	95	NW	4	1.8	.....	0	10n	.....	NW	2.70	68.6	Cloudy.....	
Red Bluff, California	29.77	756.1	30.14	765.5	42	5.6	83	N	4	1.8	.....	1c	0	Calm	.....	0	0	Clear	
Rochester, New York	29.23	742.4	29.86	758.4	34	1.1	69	W	6	2.7	.....	10k	0	W	.....	0	0	Cloudy.....	
Roseburg, Oregon	29.63	752.6	30.23	767.8	36	2.2	100	N	1	0.4	.....	.....	Fog	Calm	.....	0	0	Cloudy.....	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Sacramento, California	30.05	763.3	30.14	765.5	44	6.7	84	Calm	0	0	.....	0	Haze	.....	Calm	0	0	Clear.	
St. Louis, Missouri	29.66	753.4	30.29	769.4	15	−9.4	65	W	20	8.9	.....	0	0	.....	.....	Inap.	Inap.	Clear.....	
St. Marks, Florida	30.02	762.5	30.04	763.0	42	5.6	65	N	12	5.4	.....	0	0	.....	.....	.....	.....	Clear.....	
St. Paul, Minnesota	29.20	741.7	30.11	764.8	7	13.9	54	NW	9	4.0	.....	.....	10s	.....	N	0.01	0.3	Cloudy.....	
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salt Lake City, Utah	25.96	659.4	30.29	769.4	20	−6.7	70	E	4	1.8	.....	0	0	.....	.....	0	0	Clear.....	
San Antonio, Texas	29.73	755.1	30.37	771.4	28	−2.2	77	N	6	2.7	.....	0	0	.....	.....	0	0	Clear.....	
San Diego, California	29.99	761.7	30.06	763.5	49	9.4	30	NE	2	0.9	.....	0	0	.....	.....	0	0	Clear.....	
Sandusky, Ohio	29.29	744.0	30.00	762.0	25	−3.9	88	SW	16	7.2	.....	.....	10n	.....	SW	0.01	0.3	Light snow.	
Sandy Hook, New Jersey	29.78	756.4	29.80	756.9	46	7.8	85	E	11	4.9	.....	.....	10n	.....	E	0.18	4.6	Light rain...	
San Francisco, California	30.07	763.8	30.14	765.5	53	11.7	80	N	4	1.8	.....	0	0	.....	.....	0	0	Clear.....	
Santa Fé, New Mexico	23.29	591.6	29.83	757.7	18	−10.6	44	NE	5	2.2	.....	0	0	.....	.....	0	0	Clear.....	
Savannah, Georgia	29.82	757.4	29.92	760.0	50	10.0	71	NW	7	3.1	.....	.....	10s	.....	SW	0.14	3.6	Clearing.....	
Shreveport, Louisiana	30.25	768.3	30.48	774.2	28	−2.2	77	N	6	2.7	.....	0	0	.....	.....	0	0	Clear.....	
Smithville, North Carolina	29.78	756.4	29.82	757.4	50	10.0	93	NW	5	2.2	.....	.....	10s	.....	NW	0.59	15.0	Cloudy.....	
Springfield, Massachusetts	29.66	753.4	29.79	756.7	43	6.1	88	SE	2	0.9	.....	.....	10n	.....	SE	0.06	1.5	Light rain...	
Stanwix, Arizona	.....	.....	.....	.....	29	−1.7	78	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Stockton, Texas	27.19	690.6	30.19	766.8	23	−5.0	73	S	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Thatcher's Island, Mass	29.83	757.7	29.88	758.9	43	6.1	100	NE	4	1.8	.....	.....	10n	.....	NE	0.03	0.8	Light rain...	
Toledo, Ohio	29.27	743.4	29.98	761.5	23	−5.0	73	SW	12	5.4	.....	0	5s	.....	SW	0.08	2.0	Fair.....	
Tucson, Arizona	27.64	702.0	30.19	766.8	40	4.4	42	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear.....	
Tybee Island, Georgia	29.87	758.7	29.90	759.4	49	9.4	77	NW	12	5.4	.....	8k	0	NW	.....	0.28	7.1	Clearing.....	
Umatilla, Oregon	30.11	764.8	.....	.....	25	−3.9	75	SE	4	1.8	.....	5	0	.....	.....	0	0	Clear.....	
Vicksburg, Mississippi	30.13	765.3	30.41	772.4	28	−2.2	54	NW	12	5.4	.....	0	0	.....	.....	0	0	Clear.....	
Virginia City, Montana	24.46	621.3	29.04	760 5	3	−16.1	73	SE	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Visalia, California	29.78	756.4	30.16	766.1	41	5.0	82	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.....	
Washington, D. C	29.75	755.6	29.87	758.7	38	3.3	91	NW	20	8.9	.....	.....	10n	.....	NW	0.01	0.3	Light rain...	
Wickenburg, Arizona	.....	.....	.....	.....	20	−6.7	27	S	.....	.....	.....	0	0	.....	.....	0	0	Clear.....	
Wilmington, N. Carolina	29.73	755.1	29.81	757.2	50	10.0	93	N	7	3.1	.....	.....	10s	.....	N	0.59	15.0	Cloudy.....	
Winnemucca, Nevada	25.88	657.3	30.24	768.1	16	−8.9	66	NE	12	5.4	.....	2c	0	W	.....	0	0	Fair	
Wood's Holl, Mass	29.83	757.7	29.89	759.2	44	6.7	84	E	5	2.2	.....	.....	10n	.....	NE	0.15	3.8	Light rain...	
Yankton, Dakota	29.11	739.4	30.59	777.0	−2	−18.9	67	NW	25	11.2	.....	.....	10s	.....	Calm	0	0	Cloudy.....	
Yuma, Arizona	29.90	759.4	30.07	763.8	49	9.4	24	W	2	0.9	.....	0	0	.....	.....	0	0	Clear.....	
SUB-SERIES.																			
York Factory, B. A	30.39	771.9	30.44	773.2	13.0	−10.6	90	NW	19	8.5	.....	5ck	0	W	.....	0.18	4.6	Fair..	J. Fortescue, W. Wood.
Havana, Cuba, W. I	29.53	757.7	29.85	758.2	76	24.4	86	S	2.4	1.1	.....	2ck	0	SW	.....	Inap.	Inap.	Fair.....	Chas. Hasselbrink.
Kingston, Jamaica, W. I	30.11	764.8	30.12	765.0	78	25.6	82	Calm	0	0	.....	2c	2s	Calm	SE	0	0	.....	James Gall.
Navassa, W. I	29.85	758.2	29.93	760.2	81	27.2	.....	E	15	6.7	.....	.....	.....	.....	.....	0.80	20.3	Fair.....	F. M Everett.
St. Thomas, W. I	.....	.....	.....	.....	81	27.2	78	E	2	0.9	.....	2c	2k	NE	.....	0.2	5.	.....	G. O. Gellich.
Paramaribo, D. Guiana, S. A	.....	.....	29.94	760.5	82	27.8	83	E	.....	.....	2	3c	4k	E	.....	0	0	Clear.....	C. J. Hering.
Batavia, Dutch Guiana, S. A	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Dr. H. Groot.
Medellin, Colombia, S. A	25.25	641.3	.....	.....	66.5	19.2	84	Calm	.....	.....	0	7cs	3ks	.....	.....	0	0	Cloudy	Thomas Herran.
Honolulu, Oahu, H. I	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Daniel Smith.
Makawao, Maui, H. I	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters: Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 760 ft., or 533.4 m.; Denver, 5,162 ft., or 1,578,4 m.; Dodge City, 2,436 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,110.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,870 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.57 in.; Cheyenne, 6.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.38 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not certain. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard Mare Island, Cal.	30.02	762.5	50	10.0	48	8.9	70	SE	7	3.1	.....	.....	0	.....	.....	0	0	.....	.....	Clear.	.....
Navy Yard, Pensacola, Fla.	30.20	767.1	.....	.....	41	5.0	82	N	7	3.1	.....	.....	1	.....	.....	0	0	.....	.....	D. clouds.	...
Navy Yard, Portsmouth, N.H	29.91	759.7	58	14.4	40	4 4	91	S	1	0.4	.....	.....	10	.....	.....	0	0	.....	.....	Cloudy.	.....
Naval Hospital, Yokohama, Japan	30.30	769.6	50	10.0	39	3.9	64	N	.....	.....	1	.....	2s;hz	.....	Calm	0	0	.....	.....	Fair	.....
Adams. Port Famine, Patagonia.	29.48	748.8	49	9.4	49	9.4	71	SSE	.....	.....	1	.....	7	.....	SSE	Heavy	Heavy	None	.....	D. clouds.	.....
Alert, Yokohama, Japan	30.46†	773.7†	46	7.8	46	7.8	62	NNW	.....	.....	2	.....	1	.....	N	.....	.....	.....	.....	D. clouds.	....
Alliance, Constantinople, Turkey.	30.03	762.7	70	21.1	54	12.2	55	SSW	.....	.....	2	.....	10	.....	WSW	.....	.....	.....	.....	Overcast.	.....
Ashuelot. Shanghai, China	30.40	772.1	61	16.1	42	5.6	91	E	.....	.....	2	.....	10	.....	Calm	.....	.....	.....	.....	Raining.	.....
Canonicus, New Orleans, La	30.17	766.3	38	3.3	42	5.6	58	NNW	.....	.....	4	.....	2	.....	.....	.....	.....	.....	.....	Pleasant.	.....
Colorado, New York, N. Y.	29.83	757.7	45	7.2	45	7.2	100	ENE	4	1.8	.....	.....	10	.....	ESE	0.1	3.	.....	.....	Raining.	.....
Despatch, Constantinople, Turkey.	30.04	763.0	78	25.6	55	12.8	67	SSE	.....	.	2	.....	10	.....	SW	.....	.....	.....	.....	Cloudy.	.....
Essex, Gaboon River, Africa	29.86	758.4	83	28.3	84	28.9	91	S	.....	.....	1	.....	8	.....	NW	.....	.....	.....	.....	D. clouds.	....
Franklin, Norfolk, Va.	29.90	759.4	51	10.6	51	10.6	86	NW	9.6	4.3	.....	.....	10	.....	NW	0.9	23.	.....	.....	Raining.	.....
Guard, N. 39° 10′, W. 11° 00′	29.87	758.7	64	17.8	66	18.9	89	W	.....	.....	4	.....	8	.....	W	.....	.....	Moderate.	W	Showery.	.....
Lackawana, San Francisco, Cal	30.15	765.8	.....	.....	59	15.0	59	N	.....	.....	1	.....	2	.....	S	.....	.....	.....	.....	D. clouds.	..
Marion, Smyrna, Turkey	29.92	760.0	55	12.8	47	8.3	92	E	.....	.....	2	.....	10	.....	Calm	Moderate.	Moderate.	Smooth	E	D. clouds.	....
Michigan, Erie, Pa.	29.35	745.5	45	7.2	33	0.6	51	W	.....	.....	3	.....	10	.....	W	.....	.....	.....	.....	Cloudy.	.....
Monongahela, Alexandria, Egypt	30.11	764.8	69	20.6	69	20.6	90	W	.....	.....	2-3	.....	ck	.....	.....	Light	Light	Smooth	.....	D. clouds.	....
New Hampshire, Port Royal, S.C.	30.02	762.5	.....	.....	49	9.4	85	NW	10	4.5	.....	.....	6	.....	NW	0.01	0.3	.....	.....	D. clouds.	....
Omaha, Callao, Peru	30.10	764.5	74	23.3	75	23.9	86	ESE	6	2.7	.....	.....	2	.....	SE	0	0	Smooth	.....	Pleasant.	.....
Onward, Callao, Peru	30.08†	764 0†	73	22.8	71	21.7	85	SE	.....	.....	3	.....	3	.....	.....	.....	.....	Long	W	Misty.	.....
Ossipee, Norfolk, Va.	29.81	757.2	65	18.3	51	10.6	93	NNW	.....	.....	2	.....	10	.....	N	.....	.....	.....	.....	Raining.	....
Palos, Shanghai, China	30.37	771.4	56	13.3	52	11.1	86	ENE	.....	....	2	.....	10	.....	.....	.....	.....	.....	.....	Rainy.	.....
Plymouth. N. 29° 22′, W. 70° 01′	30.04	763.0	75	23.9	73	22.8	81	S	.....	.....	6	.....	10	.....	S	.....	.....	Moderate	S	Overcast.	.....
Powhatan, Hampton Roads, Va.	.....	.....	.....	.....	61	16.1	100	NW	4.8	2.1	.....	.....	9	.....	.....	0.43	10.9	.....	.....	Rainy.	.....
Ranger, Shanghai, China	30.38	771 6	63	17.2	54	12.2	87	ENE	.....	.....	2	.....	10	.....	Calm	.....	.....	.....	.....	Rainy.	.....
Rio Bravo, Brownsville, Texas	30.26	768.6	.....	.....	43	6.1	83	NW	.....	.....	4	.....	10	.....	NW	.....	.....	.....	.....	D. clouds.	....
Santee, Annapolis, Md.	29.92	760.0	68	20.0	46	7.8	69	NW	.....	.....	5	.....	10	.....	NW	0	0	.....	.....	Cloudy.	.....
Saratoga, Hampton Roads, Va.	.....	.....	.....	.....	57	13.9	87	NW	.....	.....	2	.....	10	.....	NW	.....	.....	.....	.....	Rainy.	.....
St. Louis, League Island, Pa	29.75	755.6	45	7.2	44	6.7	92	NE	5	2.2	.....	.....	10	.....	NE	.....	.....	.....	.....	Overcast.	.....
Swatara, Norfolk, Va.	29.84	757.9	.....	.....	69	20.6	56	WNW	.....	.....	1	.....	10	.....	N;W	.....	.....	.....	.....	Drizzling.	....
Tennessee, Yokohama, Japan	30.47	773.9	64	17.8	44	6.7	74	NW	6	2.7	.....	.....	2	.....	NW	0	0	Smooth	.....	Hazy.	.....
Trenton, Villefranche, France	29.62	752.3	.....	.....	59	15.0	76	SE	4	1.8	.....	.....	9	.....	S&E	0.5	13.	.....	.....	D. clouds.	....
Vandalia, Villefranche, France.	29.57	751.1	59	15.0	58	14.4	88	SE	.....	.....	1	.....	10	.....	NW	.....	.....	Long smooth	SW	D. clouds.	....
Wabash, Boston, Mass.	29.90	759.4	57	13.9	41	5.0	91	N	2	0.9	.....	.....	10	.....	Calm	0.13	3.3	.....	.....	Raining.	.....
Wyoming, Washington, D. C.	30.31†	769.9†	.....	.....	49	9.4	.....	N	.....	.....	2	.....	10	.....	.....	.....	.....	.....	.....	Raining.	.....

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. The position given for the Plymouth is that at noon, local time, instead of that at 7:35 a. m., Washington time.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.	Character.	Direction from—		
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—				
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska, Port Townsend, W. T.			30.38†	771.6†	40	4.4		NW			2		0					Clear.	Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama, N. 14° 02′, W. 90° 34′ 10″			29.72	754.9	79	26.1	91	N			2		7		NE	Light	WNW	D. clouds	Capt. Howard.
S. S. City of Peking																			Lt. Z. L. Tanner, U.S.N.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio, N. 24° 50′, E. 119° 36′			30.14	765.5	61	16.1		NE			6		10		NE	Short	NNE	Overcast	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

NOTE.—The originals give the wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. † Aneroid; corrected for elevation, instrumental error not known.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.

S. S. Belgic																			Capt. John Metcalf.
S. S. Gaelic, N. 30° 00′, W. 170° 30′			30.22*	767.6*	71	21.7	??	SSW			5		ks		W	Heavy	W	D. clouds	Capt. W. H. Kidley
S. S. Oceanic, N. 44° 14′, W. 150° 20′			29.91	759.7	46	7.8	77	Var.			3–5		4		SW; NW	Confused.		Showery	Capt. H. Parsell.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. *Aneriod.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. O. Pohle.
S. S. Braunschweig, N. 37° 34′, W. 74° 40′	S65W	12.0	29.76	755.9	54.0	12.2	100	ENE			5		8		N	Rough		Drizzling	Capt. K. Undütsch.
S. S. Nürnberg, N. 45° 41′, W. 14° 08′			29.54	750.3	52.0	11.1	83	NW			8		k		WNW	Short	NNW; NW	D. clouds	Capt. A. Jaeger.
S. S. Ohio, Baltimore, Md.			29.75	755.6	40.0	4.4	74	NW			5		10					Threatening	Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, nor distinguish between upper and lower clouds.

UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Lo'wr	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second	0—10.	0—10.	0—10.	From—	From—	Character	Direction from—		
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois.																			Captain Shackelford.
S. S. Indiana, Irish Channel			29.70*	754.4*	42	5.6	100	SW			7		10			Heavy	SW	Overcast	Captain Sargent.
S. S. Ohio. N. 44° 06′, W. 59° 04′			30.05	763.3	44	6.7	92	Var.			1		10		Calm	Moderate.	SW	Fair	Captain Morrison.
S. S. Pennsylvania, N. 47° 00′, W. 36° 15′			30.26†	768.6†	55	12.8	87	WNW			2		3		SW	Large	NW	Clear	Captain Harris.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. *Aneroid; correction for elevation applied, instrumental error not known.
† Corrected for temperature and elevation, instrumental error not known.

RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

S. S. Nederland	Capt. Randle.
S. S. Switzerland	Capt. Jackson.
S. S. Vaderland	Capt. Nichols.

ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

S. S. Hibernian.																				
S. S. Scandinavian. N. 51° 37′, W. 11° 36′			28.97	735.8	49	9.4		W			6		6		W	Short & high.	W	Squally	Capt. W. Richardson.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, Kennebunk, Maine			29.84	757.9	48	8.9	??	Calm	0	0			10ks		E			Overcast	Capt. James Jorgensen.

NOTE.—The originals for the schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^{d},) Chief Signal Officer. U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON NOVEMBER 30, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:48 P. M. GREENWICH mean time.
0:58 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:18 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:28 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours	.....	.....	30.07	763.6	63.7	17.6	61	SSW	.....	.....	3	.....	7	.....	.....	0	0	Very cloudy	Michel.
Algiers	.....	.....	29.87	758.6	61.5	16.4	52	NW	.....	.....	1	.....	1	.....	.....	0.244	6.2	Very fair	Peter.
La Calle	.....	.....	29.86	758.4	56.3	13.5	84	NW	.....	.....	3	.....	10	.....	.....	0.315	8.0	Covered	Fleury.
Tunis	.....	.....	29.70	754.3	67.5	19.7	55	W	.....	.....	3	.....	8	.....	.....	0.303	7.7	Very cloudy	Jacques.
Sfax	.....	.....	29.96	761.0	62.6	17.0	.....	SW	.....	.....	2	.....	10	.....	.....	0	0	Covered	Husson.
Saida	.....	.....	30.03	762.8	51.1	10.6	77	WNW	.....	.....	3	.....	7	.....	.....	0	0	Very cloudy	Millot.
Tebessa	.....	.....	30.03	762.7	.....	.....	.....	W	.....	.....	2	.....	2	.....	.....	.....	.....	Fair	Bourgeois.
Geriville	.....	.....	30.04	763.1	54.0	12.2	76	WSW	.....	.....	3	.....	4	.....	.....	0	0	Cloudy	Lemaillot.
Laghouat	.....	.....	30.02	762.5	62.6	17.0	52	W	.....	.....	6	.....	4	.....	.....	0	0	Cloudy	Guyot.
Biskra	.....	.....	29.97	761.1	70.3	21.3	14	NW	.....	.....	4	.....	6	.....	.....	0	0	Cloudy	Kuntz.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m.; or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Agram	28.96	735.5	29.51	749.5	44.2	6.8	90	NE	.....	.....	1	.....	7	.....	.....	0.933	23.7	Raining	Prof. Ivan Stozir
Cracow, I. R. Observatory	28.76	730.5	29.54	750.2	41.0	5.0	84	NE	.....	.....	1	.....	6	.....	.....	0	0	.....	Dr. Wierzbiski.
Eperies	28.74	730.1	29.64	752.9	37.9	3.3	95	S	.....	.....	1	.....	10	.....	.....	0	0	.....	Julius Mikolik.
Gratz	28.26	717.8	29.53	750.0	41.0	5.0	88	WNW	.....	.....	2	.....	10	.....	.....	0.098	2.5	.....	Andreas Rospini.
Hermannstadt	28.24	717.2	29.67	753.6	43.2	6.2	76	ESE	.....	.....	1	.....	0	.....	.....	0	0	.....	Prof. Reissenberger.
Kremsmünster	28.12	714.1	29.47	748.5	39.6	4.2	93	Calm	.....	.....	0	.....	10	.....	.....	0	0	.....	Prof. C. Wagner.
Lemberg	28.64	727.5	29.66	753.3	35.6	2.0	89	E	.....	.....	2	.....	10	.....	.....	0.004	0.1	.....	Dr. T. Stanecki.
Pola	29.32	744.6	29.43	747.4	59.2	15.1	89	SSE	.....	.....	3	.....	10s	.....	.....	0.298	7.58	.....	I.R.Hydrographic Office
Szathmar	29.24	742.6	29.71	754.5	45.0	7.2	72	E	.....	.....	2	.....	10	.....	.....	0.039	1.0	Rainy	Johann Tamas, S. J.
Szegedin	29.31	744.4	29.59	751.5	52.5	11.4	78	S	.....	.....	2	.....	6	.....	.....	0	0	.....	Karl Stancel.
Trieste	28.96	745.7	29.46	748.3	57.9	14.4	76	Calm	.....	.....	0	.....	10	.....	.....	0.539	13.7	Raining	P. Busin.
Vienna	28.76	730.5	29.47	748.4	41.7	5.4	95	S	.....	.....	1	.....	.....	.....	.....	0	0	.....	I. R. Central Met. Obs'y
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time, and at Trieste at 7 a. m. of the following day. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Arlon	27.91	708.8	29.43	747.5	38.5	3.6	91	SW	.....	.....	2	.....	10	.....	.....	0.098	2.5	.....	Prof. M. Passau.
Brussels	29.06	738.2	29.26	743.3	43.3	6.3	83	SSW	.....	.....	4	.....	10	.....	SSW	0.012	0.30	Light rain	Royal Observatory.
Furnes	29.15	740.3	29.17	740.9	44.4	6.9	100	SW	.....	.....	4	.....	10	.....	.....	0	0	.....	M. E. de Cae.
Maeseyck	29.17	740.8	29.30	744.1	44.4	6.9	83	S	.....	.....	6	.....	3	.....	.....	0	0	.....	M. Pierrot.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	28.85	732.8	28.95	735.3	44.0	6.7	.....	SE	17	7.6	.....	.....	5	.....	.....	0.570	14.48	Blue sky	W. Boswell.
Ardrossan	28.75	730.2	28.77	730.7	41	5.0	.....	ESE	.....	.....	2	.....	10	.....	.....	.....	.....	Raining	William McNeil.
Armagh, Observatory	.....	.....	28.87	733.3	41.7	5.4	.....	WSW	16	7.2	.....	.....	10	.....	.....	.....	.....	Squally	S. Call, for Dr. Robinson
Bidston, (Liverpool Obs.)	.....	.....	28.89	733.8	41.6	5.3	.....	WSW	40	17.9	.....	.....	10	.....	.....	.....	.....	Raining	John Hartnup.
Birr Castle, (Parsonstown)	.....	.....	29.05	737.9	46.1	7.8	.....	WNW	.....	.....	3-4	.....	1	.....	.....	.....	.....	D. clouds	J. L. E. Dreyer.
Bradford, Yorkshire	28.47	723.1	28.86	733.0	41.7	5.4	.....	S	.....	.....	3	.....	10	.....	.....	0.02	0.5	Overcast	J. McLandsborough.
Bridgetown, (Barbados)	29.89	759.2	29.92	760.0	83.0	28.3	.....	NE	.....	.....	1	.....	2	.....	.....	.....	.....	D. clouds	Pvt. G. W. Roberts, A.
Cambridge, Observatory	.....	.....	29.07	738.4	42.8	6.0	.....	SSW	.....	.....	1	.....	5	.....	.....	.....	.....	Raining	H. Todd. [H. C.
Cardington	.....	.....	29.08	738.6	43.0	6.1	.....	SW	.....	.....	3	.....	10	.....	.....	.....	.....	Raining	John McLaren.
Chatham, School M. E	28.99	736.3	29.11	739.4	45.7	7.6	.....	W	.....	.....	2	.....	4	.....	.....	.....	.....	Blue sky	Lt. W. G. Morris, R. E.
Dartmoor	27.90	708.6	29.38	746.2	42.2	5.7	.....	W	.....	.....	4	.....	4	.....	.....	.....	.....	Showery	Alexander Watt.
Davos Platz (Switzerland)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Francis Redford, M. A.
Donaghadee	28.75	730.2	28.78	731.0	43	6.1	.....	W	.....	.....	2	.....	10	.....	.....	.....	.....	Overcast	J. Mac Gowan.
Dover	29.13	739.9	29.15	740.4	46	7.8	.....	W	.....	.....	4	.....	7	.....	.....	.....	.....	¾ clouded	J. Costello.
Eccles, (near Manchester)	.....	.....	28.92	734.6	42.4	5.8	.....	SW	9.8	4.4	.....	.....	10	.....	.....	.....	.....	Raining	Thomas Mackereth.
Falmouth, Observatory	29.06	738.1	29.28	743.7	48.5	9.2	.....	W	.....	.....	5	.....	8	.....	.....	.....	.....	Overcast	The Staff.
Fort Napier, (Natal)	27.72	704.1	29.93	760.2	79.6	26.4	.....	E	.....	.....	2	.....	7	.....	.....	.....	.....	D. clouds	Pvt. G. Salmon, A. H. C.
Free Town, (Sierra Leone)	.....	.....	29.91	759.7	88.0	31.1	.....	W	.....	.....	0	.....	0	.....	.....	.....	.....	Blue sky	
Galway, Queen's College	.....	.....	.....	.....	42	5.6	.....	W	.....	.....	4	.....	8	.....	.....	.....	.....	Gloomy	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	30.07	763.8	30.13	765.3	60.0	15.6	.....	NW	.....	.....	4	.....	0	.....	.....	.....	.....	Blue sky	Corpl. C. Aitken, A. H. C.
Glasgow, Observatory	28.61	726.7	28.82	732.0	38.0	3.3	.....	NNE	.....	.....	4	.....	10	.....	.....	.....	.....	Raining	D. G. Maclean.
Great Yarmouth	29.04	737.6	29.05	737.9	44	6.7	.....	WSW	.....	.....	3	.....	6	.....	.....	.....	.....	Hazy	G. T. Watson.
Greenwich, Royal Obs'y	28.95	735.3	29.12	739.6	45.4	7.4	.....	WSW	.....	.....	4	.....	10	.....	.....	.....	.....	Overcast	The Staff, for G. B. Airy.
Guernsey	29.06	738.1	29.28	743.7	50.5	10.3	.....	WSW	.....	.....	5	.....	8	.....	.....	.....	.....	Squally	Dr. S. E. Hoskins, F. R. S.
Helston	.....	.....	29.28	747.3	55	12.8	.....	W	.....	.....	4	.....	3	.....	.....	0.22	5.6	D. clouds	M. P. Moyle.
Holyhead	28.88	733.5	28.83*	732.3*	46	7.8	.....	W	.....	.....	8	.....	10	.....	.....	.....	.....	Misty	John Tilston.
Jersey	29.05	737.9	29.33	745.0	49.0	9.4	.....	W	.....	.....	6	.....	9	.....	.....	Blank	Blank	Squally	J. Fisher.
Kew, Observatory	.....	.....	29.12	739.6	46.1	7.8	.....	WSW	15	6.7	.....	.....	10	.....	.....	.....	.....	Raining	The Staff.
Kingstown	28.92	734.6	28.95	735.3	47	8.3	.....	WNW	.....	.....	6	.....	7	.....	.....	.....	.....	D. clouds	George Mitchell.
Leicester, Museum	.....	.....	29.01	736.8	43.0	6.1	.....	SW	.....	.....	2	.....	10	.....	.....	.....	.....	Overcast	Wm. J. Harrison, F. G. S.
Malta, (Mediterranean)	29.66	753.4	29.73	755.1	68.0	20.0	.....	SW	.....	.....	3	.....	6	.....	.....	.....	.....	D. clouds	Sgt. C. Arbeiter, A. H. C.
Nairn	28.80	731.5	28.90	734.0	37	2.8	.....	Calm	.....	.....	0	.....	0	.....	.....	.....	.....	Clear	W. D. Penny.
Nassau, (Bahamas)	.....	.....	.....	.....	70.0	21.1	.....	NW	.....	.....	7	.....	10	.....	.....	.....	.....	Squally	C. S. Duncombe.
Nottingham, Observatory	28.80	731.5	28.99	736.3	43.5	6.4	.....	SW	.....	.....	3	.....	10k;d	.....	WSW	0.028	0.71	Overcast	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	28.48	723.4	29.00	736.6	44.1	6.7	.....	SW	.....	.....	4	.....	10	.....	.....	.....	.....	Overcast	Rev. Stephen Whitty
Oxford, Radcliffe Obs'y	.....	.....	29.10	739.1	46	7.8	.....	WSW	.....	.....	2	.....	10	.....	.....	.....	.....	Gloomy	F. Lucas
Plymouth	29.16	740.7	29.24	742.7	47.1	8.4	.....	WSW	.....	.....	4	.....	3	.....	.....	.....	.....	D. clouds	John Merrifield.
Roche's Point	29.13	739.9	29.17	740.9	45	7.2	.....	NW	.....	.....	6	.....	8	.....	.....	.....	.....	Squally	W. Kennedy.
Saint Ann's Head	29.06	738.1	29.12	739.6	49	9.4	.....	W	.....	.....	6	.....	7	.....	.....	.....	.....	Squally	John C. Walker.
Sandwick Manse, (Orkneys.)	.....	.....	29.00	736.6	41	5.0	.....	SE	15	6.7	.....	.....	1	.....	.....	.....	.....	D. clouds	Rev. C. Clouston, LL. D
Scutari, Cemetery, (Turkey)	.....	.....	29.83	757.7	58.8	14.9	.....	SE	.....	.....	1	.....	9	.....	.....	.....	.....	Showery	Sergt. W. H. Lyne.
Sheffield	28.68	728.5	28.91	734.3	43.1	6.2	.....	SW	.....	.....	2	.....	10	.....	.....	0.32	8.1	Drizzling	W. F. Cooper.
Silloth Rectory	28.75	730.2	28.78	731.0	41.1	5.1	92	E	.....	.....	2	.....	10	.....	.....	0.166	4.19	Overcast	Rev. F. Redford, M. A.
Stonyhurst, Observatory	.....	.....	.....	.....	41.9	5.5	.....	SW	.....	.....	2	.....	10	.....	.....	.....	.....	Raining	Rev. S. J. Perry.
Stornoway, Lews C. (Hebr.)	.....	.....	28.65	727.7	37	2.8	.....	E	.....	.....	1	.....	0	.....	.....	.....	.....	Blue sky	John Smith.
Stratfield Turgiss	28.91	734.3	29.13	739.9	44.7	7.1	.....	W	.....	.....	1	.....	2	.....	.....	.....	.....	Blue sky	Rev. C. H. Griffith, F. M. S.
Thurso	.....	.....	28.92	734.6	42	5.6	.....	SE	.....	.....	2	.....	6	.....	.....	.....	.....	D. clouds	John Trotter.
Truro, Royal Institution	.....	.....	29.31	744.5	48	8.9	.....	W	.....	.....	6	.....	10	.....	.....	.....	.....	Raining	W. Newcombe.
Valencia, Observatory	.....	.....	29.21	741.9	46.9	8.3	.....	W	28	12.5	.....	.....	8	.....	.....	.....	.....	D. clouds	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Henry Mercer.
Cape Good Hope, Obs'y	29.93	760.2	29.97	761.2	77.7	25.4	56	SSE	24	10.7	.....	0	1	.....	.....	.....	.....	.....	The Staff, for E. J. Stone
Hobart Town, (Tasmania)	.....	.....	29.78	756.4	59.0	15.0	77	Calm	.....	.....	0	.....	0	.....	.....	0	0	.....	Francis Abbott, F. R. A. S.
Leith, Restalrig Park	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Andrew Gibb.
Mauritius, Observatory	29.78	756.4	29.97	761.2	80.1	26.7	73	E	11.0	4.9	.....	4	6	W	E	0	0	Cloudy; fine	C. Meldrum.
Melbourne, Observatory	29.74	755.4	29.84	757.9	63.9	17.7	74	SW	6	2.7	.....	.....	0	.....	.....	0	0	Lightning	R. L. J. Ellery.
Monach L't-house, (Hebrides)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Youngclause.
North Unst, (Shetland Is.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Robert Burnet.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m. *Probably 28.93 in. and 734.8 mm.

Marine Series. Vessels.	Sea or swell. Height scale 0—9	Sea or swell. Direction from—	Weather	Observer
S. S. Algeria	.....	.....	.....	Capt. W. Watson.
S. S. Batavia, N. 47° 15′, W. 34° 55′	.....	.....	.....	Capt. J. E. Mouland.
Ship Camperdown	4	WNW	D. clouds	Capt. A. T. Miller.
Brig Catherine	.....	.....	.....	Capt. Adam Smith.
Barque Celeste	.....	.....	.....	Capt. D. F. McKechnie.
S. S. Hibernia	.....	.....	.....	Capt. W. R. Cato
Barque Maroon	.....	.....	.....	Capt. A. T. Brown.
Ship Mikado	.....	.....	.....	Capt. C. C. Prehn.
S. S. Seine	.....	.....	.....	Capt. H. Manning.
Barque Sorata	.....	.....	.....	Capt. Jas. J. Price.
Schooner Traveller	.....	.....	.....	Capt. Alex Simpson.
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....

Ship Camperdown	30.07	763.8	57	13.9	.....	WSW	.....	.....	4	.....	8	.....	.....

Note.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	BAROMETER. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	Low'r 0—10.	Direction. Upper. From—	Lower. From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	Millimeters.	WEATHER.	OBSERVER.
San José	26.23	666.2			66.2	19.0	92	NE			1	5c	8ks;s		E	Blank	Blank		Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.36	745.8	29.41	747.0	42.6	5.9	91	S			2		10						
Fanöe	29.29	743.9	29.31	744.4	40.3	4.6	97	SSE			4		5						
Godthaab, (Greenland)	29.45	747.9	29.49	749 0	9.0	—12.8	84	Calm			0		3						
Stykkisholm, (Iceland)	29.33	744.9	29.37	746.0	30.4	— 0.9	96	SE			6		5						
Thorshavn, (Faröe)	29.13	740.0	29.17	740.9	45.1	7.3	85	NE			5		10						
Vestervig	29.12	739.7	29.29	744.0	39.6	4.2	97	SSE			4		4						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

Alençon, Normal School	28.88	733.6	29.43	747.6	50.0	10	86	SW			1		10		SW	0.24	6.	Covered	Collignon, Director.
Amiens, Normal School	29.13	739.9	29.24	742.7	47.8	8.8		WSW			2		5			0	0	Cloudy	Bonvarne, Director.
Avignon, Normal School	29.55	750.5	29.63	752.5	48.9	9.4	69	WSW			1		10			0.322	8.2	Covered	Mr. Giraud, Director.
Bar-sur-Seine	28.89	733.8	29.46	748.2	45.9	7.7	75	SW			3		8		SW	0.067	1.7	Very cloudy	C. Saillard.
Beaumette Obs'y (Angers)	29.27	743.5	29.43	747.5	50.0	10.0	76	SW	8.3	3.7					WSW	0.067	1.7		Albert Cheux.
Beauvais	29.05	737.9	29.34	745.1	46.4	8	75	SW			3		8		W	0.138	3.50	Very cloudy	Normal School.
Besançon	28.63	727.3	29.53	750.1	43.7	6.5	85	SSW			3		8		SW	1.02	26.	Very cloudy	Normal School.
Bourg-en-Bresse	28.71	729.1	29.61	752.0	43.3	6.3	79	S			6		5cn		S	0.12	3.	Cloudy	Normal School.
Bourges, Normal School	28.97	735.7	29.52	749.7	45.1	7.3	94	SW			4		10		E	0.177	4.5	Covered	A. Wagner, Director.
Brest, Naval Observatory	29.16	740.6	29.38	746.2	49.8	9.9	71	W			5		10		W	0.108	2.75	Hail-squalls	The Staff.
Carcassonne, Normal School	29.35	745.6	29.78	756 3	44.6	7	94	W			2		10		W	0.08	2.	Covered	Vateau, Director.
Caen	29.24	742.6	29.31	744.4	40.8	8.2	86	NNE			2		1		E	0.003	1.6	Slightly cl'dy	Normal School.
Chartres, Normal School	28.79	731.3	29.35	745.5	50.7	10.4	74	SSW			3		2		NE	0.08	2.		Lequin, Director.
Châlons-sur-Marne, N. Sch'l	29.06	738.2	29.38	746.3	42.8	6.0	100	S			6		8k		S	0.287	7.3	Very cloudy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.17	715.4	29.52	749.8	46.4	8.0	64	SE			2		8		W	0.197	5.0	Very cloudy	Alluard, Director.
Commercy, Normal School	28.60	726.5	29.50	749.2	40.6	4.8	93	SW			4		8		SW	0	0	Very cloudy	Dr. Goulet, Director.
Commune de Gréasque*	28.50	723.9	29.64	752.9	45.5	7.5	66	NW			4		8		NW	0.181	4.6	¾ covered	V. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	29.32	744.6	29.53	750.1	48.9	9.4	81	W			6		5		W	0.236	6.00	Cloudy	Mouillot, Director.
Le Mans, Normal School	29.11	739.5	29.38	746.3	46.9	8.4	76	W			4		2		W	0.049	1.25	Slightly cl'dy	Poirrier, Director.
Lons-Le-Saulnier, N. School	28.65	727.7	29.57	751.0	43.3	6.3	88	S			2		10		E	0.31	8.	Raining	Pin, Director.
Lorient, Naval Observatory	29.39	746.4	29.48	748.9	50.4	10.2	64	W			3		8		W	0.130	3.3	¾ covered	T. Carré, Director.
Mâcon, Normal School	28.80	731.6	29.50	749.2	45.1	7.3	89	Calm			0		10			0	0	Covered	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	28.39	721.0	29.43	747.6	42.1	5.6	85	SSW					10		NNE	0	0	Covered	Normal School.
Nismes, Normal School	29.41	746.9	29.61	752.1	51.1	10.6	72	N			4		2		S	0	0	Slightly cl'dy	Boyer, Director.
Orleans, Normal School	29.05	737.8	29.43	747.4	46.0	7.8	83	SW			4		8		SW	0	0	Very cloudy	Bernard, Director.
Paris, Observatory	29.13	739.8	29.37	745.9	46.9	8.3	74	SW			1		5ck		SW	0.019	0.49	Cloudy	National Observatory.
Privas	28.49	723.6	29.54	750.3	53.6	12	60	S			2		10		S	0	0	Covered	Normal School
Rochefort, Naval Obs'y	29.54	750.3	29.57	751.1	50.4	10.2	84	W			5		8		W	0.43	11.	¾ covered	Lt. Decante, Director.
Rouen, Normal School	29.22	742.3	29.31	744.5	49.5	9.7	66	WSW			2		10		W	0.067	1.7	Covered	F. Lucard, Director.
Tarbes, Normal School																			T. Hugues, Director.
Villefranche	28.87	733.3	29.59	751.5	49.1	9.5	71	SW			1		8		NW	0.071	1.8	Very cloudy	Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.80	757.0	29.83	757.7	79.5	26.4										1.38	35.		L'Abbé Marchési.
Marseilles, Observatory			29.61	752.0	50.4	10.2	61	NW			4		5			0	0	Partly cl'dy	The Staff.
Mont-Louis	24.52	622.9	29.84	757.9	34.2	1.2	58	SW	16.8	7.50			10		SSW	0.008	0.2		Mr. Falguère.
Nice			29.41	747.0	56.8	13.8	54	W					1		NNW	†0.591	†15.0	Clear	Dr. A. Niepce.
Paris, Montsouris Obs'y	29.08	738.7	29.36	745.7	46.0	8.3	74	SW			3		5		SW	0	0		Marié Davy, Director.
Perpignan			29.71	754.6	52.0	11.1	53	NW	41.0	18.33			6		SW	0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.																			M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.13	562.1			18.5	— 7.5		NW			8–10		10			0.937	23.8	Snowy	Gen'l de Nansouty.
Saint Maur, (near Paris)	29.21	741.9	29.37	746.1	47.5	8.6	75	SW			3		6	WSW	SW	0	0		E. Renou.
Toulouse, Observatory	29.00	736.0	29.77	756.2	42.4	5.8	91	WSW			4		7			0.157	4.0	Raining	The Staff.
Tours	29.26	743.2	29.46	748.2	49.5	9.7	72	W			3		3		WNW	0.067	1.7		C. Marquet.
Versailles, (near Paris)			29.36	745.8	46.8	8.2	75	WSW			2		7			0	0	Fair	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.07	763.8	30.10	764.4	44.6	7.0	93	WNW	21.5	9.6			10n			0.587	14.9	Covered	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; for Montsouris, the barometer reduced to freezing but not to sea-level. At Mirecourt the cloud direction is apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône. †Rain-fall in 48 hours.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10	Clouds. Amount. Up'er 0-10	Clouds. Amount. Low'r 0-10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg																			
Berlin	29.24	742.7	29.42	747.3	41.4	5.2	92	S			1		10			0.018	0.45	Raining	Prof. Dr. Hoh.
Breslau	28.96	735.5	29.48	748.8	41.0	5.0	90	SSE			2		10			0	0	Foggy	Prof. Arndt.
Carlsruhe	29.03	737.4	29.45	748.1	45.3	7.4	83	SW			2		10			0.244	6.2		Royal University Obs'y.
Cassel	28.86	733.0	29.45	748.1	45.3	7.4	86	S			0		8	S		0	0		Albert Senz.
Crefeld	29.16	740.6	29.32	744.6	47.8	8.8	64	SE			5		7			0.12	3.		Dr. H. Möhl.
Emden	29.08	738.5	29.11	739.4	45.3	7.4	80	S			2		0			0	0		Director Lose.
Frankfort on the Main	29.11	739.3	29.47	748.5	45.5	7.5		S			1		9			0.087	2.2		Prof. Prestel.
Friedrichshafen	28.12	714.1	29.56	750.9	41.7	5.4	87	SW			3		10	WSW		0.220	5.6		Physical Society.
Hamburg	29.31	744.4	29.38	746.2	43.2	6.2	97	S			1		10ks			0.024	0.6	Foggy	M. Wilhelm.
Kiel	29.34	745.1	29.35	745.5	42.8	6.0	92				0		10			0.022	0.56		Captain F. Hegemann.
Königsberg, (Prussia)	29.58	751.3	29.66	753.4	55.2	12.9	79	SE											Prof. G. Karsten.
Köslin			29.44	747.8	40.1	4.5		SE			2		4			0	0	Fair	Prof. E. Luther.
Leipsic, Observatory	29.01	736.8	29.43	747.6	40.3	4.6	100	SW			1		10					Rain and fog	H. Müller.
Memel, Naval School	29.67	753.5	29.71	754.7	37.4	3.0	88	ESE			4		10						Prof. Bruhns.
Neufahrwasser	29.57	751.0	29.58	751.4	39.0	3.9	78	SSE			3		9			0	0		Reinbrecht von Skalweit.
Posen	29.24	742.7	29.54	750.3	39.6	4.2	86	S			6-7		10					Covered	A. Lothes.
Strassburg Obs., (in Alsace	28.94	735.1	29.49	749.1	45.9	7.7	80	S			3		7	WSW		0.312	7.92		Dr. Magener.
Stuttgart	28.52	724.3	29.46	748.2	44.2	6.8	81	W			3		9	W		0.024	0.6		Dr. Schur.
Treves, (Trier)	28.80	731.6	29.32	744.6	45.7	7.6	74	SW			6		9			0.021	0.52	Foggy	Prof. Schoder.
Weissenburg, (Bavaria)	27.98	710.6	29.49	749.1	40.3	4.6	90	W	2	1			10		W	0.211	5.35	Raining	Prof. Flesch.
Wustrow, Naval School	29.42	747.3	29.46	748.3	40.3	4.6	96	ESE			2		10					Covered	Dr. Von Hebber.
German Naval Series.																			E. F. Schütz.

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet: Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4, Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.44	747.7	29.82	757.5	65.3	18.5		SE										Clear	Dr. J. F. J. Schmidt.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and wind-force; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.98	761.6	30.03	762.8	77.0	25.0	51	WSW	15.0?	6.7?			1			0	0	D. clouds	
Deesa	29.52	749.9	30.01	762.2	77.8	25.4	30	Calm					3	WSW		0	0	D. clouds	
Bombay	29.86	758.6	29.90	759.5	81.7	27.6	65	NNW	16.0	7.2			3		SW	0	0	D. clouds	
Poona	27.90	708.8	29.91	759.8	79.7	26.5	63	SE					9	E	S	0	0	D. clouds	
Lahore	29.27	743.3	30.04	763.1	60.4	15.8	66	Calm	1.1	0.5			0			0	0	Blue sky	
Belgaum	27.39	695.7	29.92	759.9	79.7	26.5	50	Calm					3		SE	0	0	D. clouds	
Bangalore																			
Roorkee	29.06	738.2	30.00	761.9	62.8	17.1	47	NW	2.0	0.9			0			0	0		
Agra	29.40	746.8	29.99	761.6	65.7	18.7	53	W								0	0		
Trichinopoly																			
Nagpur	28.91	734.4	29.97	761.3	73.6	23.1	77	Calm	3.5	1.6			8			0.10	2.5	Gloomy	
Madras																			
Lucknow	29.60	752.0	29.99	761.8	66.4	19.1	52	NW	2.0	0.9			0			0	0	Blue sky	
Allahabad	29.68	753.8	30.00	761.9	65.9	18.8	64	Calm	1.2	0.5			0			0	0	Blue sky	
Patna	29.80	756.8	29.98	761.6	74.5	22.5	42	W	1.1	0.5			0			0	0	Blue sky	
Hazaribagh	27.94	709.7	30.00	762.0	68.8	20.4	47	Calm	6.1	2.7			1			0	0	Blue sky	
Cuttack	29.91	759.7	29.99	761.8	79.2	26.2	61	Calm	5.0	2.2			0			0	0	Blue sky	
Calcutta (Alipore)	29.96	761.1	29.98	761.6	74.2	23.4	72	NNW	1.0	0.4			0			0	0	Blue sky	
Goalpara	29.57	751.0	29.97	761.2	69.8	21.0	47	Calm	0.3	0.1			0			0	0	Blue sky	
Chittagong	29.90	759.4	29.99	761.8	73.8	23.2	83	WNW	1.7	0.8			0			0	0	Blue sky	
Sibsagar	29.70	754.3	30.05	763.2	63.9	17.7	91	ENE	2.7	1.2			0			0	0		
Rangoon													10	W	W	0	0	Gloomy	
Jubbulpore	28.60	726.5	29.99	761.6	74.9	23.8	77	NE	3.2	1.4			0			0	0	Blue sky	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,361 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Barometer: Corrected for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 1—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	21.61	548.8	29.56	750.8	21.4	— 5.9	78	N			6		7	NW		0	0		Ab. Dom. Morgini.
Stelvio	21.60	548.6	29.57	751.1	25.0	— 3.9		SSW			2		10			0.906	23.0		Signora Ernesta Manfredi.
Udine	29.01	736.9	29.43	747.6	54.3	12.4	89	SE	3.8	1.7			10			0.691	15.6		Prof. Giovanni Clodig.
Padua	29.30	744.3	29.41	747.1	50.7	10.4	87	NE	1.8	0.8			10	W		0.469	11.9		Prof. Dott. Lorenzoni.
Vicenza	29.23	742.4	29.48	747.4	49.5	9.7	88	S	1.3	0.6			10			0.768	19.5		Conte Alm. Da Schio.
Verona	29.20	741.6	29.42	747.3	53.4	11.9	91	W	0	0			10			0.713	18.1		Dott. B. Bertoncelli.
Bergamo	28.13	714.6	29.48	748.7	44.6	7.0	88	E			1		10			0.827	21.0		Prof. Trionfini Carlo.
Domodossola	28.43	722.1	29.48	748.7	45.5	7.5	91	N			2		7			0.394	10.0		Prof. Giuseppe Calza.
Milan	28.94	735.1	29.47	748.4	44.6	7.0		WNW			1		10	SSW		0.283	7.2		Ab. Gio. Capelli.
Pavia	29.11	739.4	29.47	748.4	44.4	6.8	93	N			2		10			0.583	14.8		Prof. Gio. Cantoni.
Moncalieri	28.56	725.4	29.48	748.9	45.7	7.6	81	SSE	0	0			7			0	0		Prof. P. F. Denza.
Mondovi	27.54	699.6	29.48	748.7	42.8	6.0	74	NW			2		0			0.055	1.4		Prof. D. C. Bruno.
Porto Maurizio	29.22	742.1	29.44	747.7	56.7	13.7	54	SSW			2		1	S		0.740	18.8		Prof. L. Vassallo.
Genoa	29.25	743.0	29.42	747.3	57.2	14.0	61	SE	4.3	1.9			8	SW		1.636	41.3		Prof. G. M. Garibaldi.
Piacenza	29.21	741.9	29.47	748.4	45.1	7.3	84	NW	0.7	0.3			10			0.795	20.2		Dott. G. Manzi.
Parma	29.16	740.6	29.48	748.7	45.0	7.2	93	SW			4		10			0.421	10.7		Prof. P. Pigorini.
Florence	29.24	742.6	29.50	749.2	49.5	9.7	84	SW			2		10			0.189	4.8		Cav. F. Meucci.
Leghorn	29.40	746.7	29.48	748.9	56.1	13.4	96	SW	15.4	6.9			10			0.134	3.4		Prof. P. Monte.
Siena	28.30	718.9	29.52	749.9	47.1	8.4	92	NW	1.3	0.6			10			1.587	40.3		Prof. L. Toscani.
Urbino	27.91	709.0	29.48	748.9	51.1	10.6	91	SW			4		10			0.524	13.3		Prof. P. Serpieri.
Pesaro					54.1	12.3	92	S	0	0			10	S		0.472	12.0		Prof. Luigi Guidi.
Ancona	29.45	748.0	29.56	750.7	56.1	13.4	84	SSW			6		10	SE		0.067	1.7		Prof. F. DeBosis.
Grosseto	29.39	746.5	29.50	749.4	51.6	10.9	95	ENE			2		9	SE		0.594	15.1		Avv. P. Ponticelli.
Rome	29.32	744.6	29.49	749.1	62.2	16.8	78	S	13.0	5.8			10			1.063	27.0		Prof. P. A Secchi.
Naples, O. U	29.44	747.7	29.64	752.8	65.7	18.7	77	SW			2		6	SW		0.063	1.6		Prof. L. Palmieri.
Lecce					62.2	16.8	67	SSE	18.6	8.3			3			0	0		Prof. C. De Giorgi.
Cosenza					61.2	16.2	77	SE	1.3	0.6			9			0.067	1.7		Prof. F. D. Conti.
Cagliari																			Prof. A. Pacinotti.
Riposto, (Sicily)					63.0	17.2	75	NE			2		8	E		0.197	5.0		Prof. F. Caflero.
Palermo	29.36	745.8	29.62	752.3	67.5	19.7	63	SW	14.3	6.4			10			0.374	9.5		Prof. G. Cacciatore.
Caltanissetta	27.76	705.2	29.72	754.8	56.8	13.8	89	S			6		10			0.091	2.3		Prof. A. Pagani.
Syracuse	29.64	752.8	29.71	754.7	65.5	18.6	81	SE			2		10	SE		0	0		Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.07	738.3	29.62	752.4	60.1	15.6	87	SW	4.9	2.2			10			0.236	6.0		Prof. F. Brioschi.

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,543.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Siena, 346.5 m., or 1,143.3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Tokei (Yeddo)																			The Observatory.
Tokei (Yeddo) University	30.34	770.5	30.44	773.3	43.7	6.5	70	N	7	3.1			9s			0	0	Cloudy	Prof P. V. Veeder.

MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Aguascallientes																			I. N. Marin, M. D.
Córdoba																			C. Peña, M. D.
Cuernavaca																			L. Castillo, A. E.
Guadalajara																			Prof. L. Perez.
Guanajuato																			Prof. V. Fernandez.
Leon																			Prof. M. Leal.
Mexico	23.12	587.1	30.21	767.4	51.8	11.0	96	Calm	0	0			10n			0.10	2.5	Raining	Central Observatory.
Orizaba																			N. N.
Orizaba																			I. Orozco, M. D.
Pabellon, (Aguascalts)																			M. V. de Leon, M. E.
Puebla																			Prof. B. Gonzalez.
Toluca																			Prof. C. Velazquez.
Tlacotalpam																			Prof. F. R. Bayly.
San Luis Potosi																			G. Barreda, M. D.
Vera-Cruz																			Prof. J. Rossell.
Zacatecas																			J. A. Bonilla, M. E.
Puebla, (Catholic Institute)																			P. Spina. [M. M, D. D.
Morelia																			M. Tena, F. L. P Áramo

Note.—The elevation of Aguascallientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,299 m., or 7,542.9 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabell m, 1,921.4 m., or 6,303.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

Furnished by the cooperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	29.19	741.4	29.19	741.4	44.4	6.9		S			5					0.039	1.0		
Groningen	29.22	742.2	29.28	743.6	43.7	6.5		S			2					0.008	0.2		
Helder	29.20	741.6	29.20	741.6	41.2	5.1		SSE			5					0.098	2.5		
Hellevoetsluis			29.20	741.7	43.0	6.1	90	S			5								
Utrecht	29.20	741.7	29.25	742.9	43.7	6.5	79	S			4		8			0.043	1.1	Very cloudy	H. v d Brink.

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instru'm'tal error and temperature. Inches.	Barometer. Corrected for instru'm'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	29.20	741.7	29.26	743.1	45.7	7.6	68	Calm	0	0	.....	.....	1	.....	.....	0	0	.....	
Brönö	29.51	749.5	29.55	750.5	37.4	3.0	62	E	9	4	.....	.....	9	.....	.....	0	0	.....	
Christiania	29.35	745.4	29.50	749.2	35.8	2.1	91	ENE	4	2	.....	.....	10	.....	.....	0.067	1.7	Raining	
Tromsö	30.15	765.8	30.19	766.9	25.0	— 3.9	75	NE	4	2	.....	.....	8	.....	.....	0	0	.....	

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	30.07	763.6	30.26	768.5	59.5	15.3	70	ENE	6.9	3.1	.....	.....	5	.....	.....	0	0	.....	Dr. J. A. Sampaio.
Campo Major	29.11	739.3	30.14	765.6	54.5	12.5	68	WNW	10.5	4.7	.....	.....	6	WNW	.....	0.031	0.8	.....	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.11	764.7	30.19	766.9	68.2	20.1	61	ESE	9.8	4.4	.....	.....	10	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.81	757.1	30.17	766.2	57.0	13.9	61	W	12.5	5.6	.....	.....	10	.....	.....	0.028	0.7	.....	The Staff.
Ponta Delgada, (Azores)	30.20	767.0	30.27	768.8	64.9	18.3	67	E	5.6	2.5	.....	.....	5	NW	.....	0	0	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

Naval Series. Vessels.	Sea or swell. Height scale 0–9	Sea or swell. Direction from—		
S. S. India.	.....	.....	.....	A. D. Pedroso, Com'd't. Lt. S. A. P. de Mirando
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....

Note.—The originals give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.19	741.4	29.63	752.5	33.4	0.8	87	ESE	18	8	.....	.....	10	.....	.....	.....	.....	.....	Astronomical Obs.
Wilna	29.44	747.7	29.87	758.8	33.8	1.0	90	SE	11	5	.....	.....	10	.....	.....	.....	.....	Heavy clouds	Astronomical Obs.
Dorpat	29.69	754.2	29.95	760.6	36.7	2.6	94	SE	4	2	.....	.....	10	.....	.....	.....	.....	.....	Prof. Dr. Weihrauch.
St. Petersburg	30.01	762.3	30.03	762.7	36.1	2.3	89	SE	7	3	.....	.....	10	.....	.....	.....	.....	.....	Central Physical Obs.
Kuopio	29.57	751.1	29.91	759.6	33.8	1.0	100	S	13	6	.....	.....	10	.....	.....	Blank	Blank	.....	Ch. Forsten.
Kieff	29.27	743.4	29.92	759.9	38.1	3.4	87	SE	9	4	.....	.....	10	.....	.....	.....	.....	Light rain	Physical Cabinet.
Nikolaiev	29.92	760.0	29.99	761.8	43.0	6.1	99	Calm	0	0	.....	.....	10	.....	.....	.....	.....	.....	Kurdakof.
Kertch	30.01	762.3	30.03	762 8	54.1	12.3	86	S	4	2	.....	.....	7	.....	.....	.....	.....	.....	Lagorio.
Moscow	29.62	752.4	30.20	767.0	29.5	— 1.4	94	S	7	3	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Lugan	29.87	758.8	30.09	764.2	35.8	2.1	93	ESE	13	6	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Archangel	29.84	758.0	29.86	758.5	36.0	2.2	82	SW	22	10	.....	.....	9	.....	.....	.....	.....	.....	Ogorodnikof.
Tiflis	28.61	726.8	30.04	763.0	54.0	12.2	60	Calm	0	0	.....	.....	7	.....	.....	.....	.....	.....	Physical Observatory.
Astrakhan	30.28	769.1	30.20	767.0	36.0	2.2	61	NE	2	1	.....	.....	1	.....	.....	.....	.....	.....	Sebastianof.
Kasan	30.06	763.4	30.34	770.7	22.1	— 5.5	79	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Physical Cabinet.
Orenburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Tschernischef.
Ekaterinburg	29.37	746.1	30.38	771.6	26.1	— 3.3	50	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Meteorological Obs.
Nukuss	29.72	754.8	29.96	760.9	39.4	4.1	66	NNE	22	10	.....	.....	2	.....	.....	.....	.....	.....	
Kasaly	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Bobrof.
Tashkend	28.39	721.1	30.10	764.5	54.0	12.2	27	N	4	2	.....	.....	4	.....	.....	.....	.....	.....	Michelson.
Barnaul	29.82	757.5	30.39	772.0	14.5	— 9.7	91	W	0	0	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Yeniseisk	29.96	760.9	30.31	769.8	11.3	—11.5	89	ENE	2	1	.....	.....	6	.....	.....	.....	.....	.....	Marks.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Usolzef.
Oorga	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Mossin.
Peking, (China)	29.95	760.8	30.10	764.4	28.8	— 1.8	60	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Physical Observatory.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nikolaievsk, on the Amoor	.....	.....	.....	.....	— 6.7	—21.5	71	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Rave, Director.
Bilbao, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Manuel de Naveran
Burgos, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Domingo Martin y Perez.
Madrid, Royal Observatory	27.75	704.8	30.01	762.2	44.6	7.0	72	SW	17.2	7.67	.....	0	4	.....	.....	0.205	5.2	Cloudy	The Staff.
Murcia, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Olayo Diaz, Director.
Santiago, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	30.06	763.6	30.13	765.3	67.6	19.8	68	NNE	15.0	6.7	.....	.....	10n	.....	.....	0.189	4.8	Cloudy	Benito Vines, S. J.
San Fernando, Naval Obs'y.	30.10	764.4	30.20	767.0	58.3	14.6	60	WNW	15.8	7.1	.....	0	3	.....	NW	0	0	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.	.....	.....	29.91	759.6	78.4	25.8	89	S	0	0	.....	3cs	2K	.....	.....	0.610	15.50	Clear.	Leonardo de Tejeda, Chief of Engineers.

Note.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8;19 a m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST BOSTON

SWEDISH SERIES.

Furnished by the cöoperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'or 0-10.	Clouds. Amount. Low'r 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.74	755.3	29.78	756.3	28.0	— 2.2	.....	SW	.....	.....	2	.....	10	.....	.....	0.118	3.0	.....	
Umea	29.73	755.1	29.78	756.4	33.4	0.8	100	Calm	.....	.....	0	.....	10	.....	.....	0.146	3.7	.....	
Hernosand	29.71	754.7	29.76	756.0	36.0	2.2	93	SSW	.....	.....	2	.....	10	.....	.....	0	0	.....	
Stockholm	29.50	749.3	29.68	753.8	39.6	4.2	77	SE	.....	.....	6	.....	8	.....	.....	0.004	0.1	.....	
Wisby	29.57	751.0	29.63	752.5	41.0	5.0	94	SSE	.....	.....	4	.....	10	.....	.....	.....	.....	Raining	
Sub-Series.																			
Upsala	29.62	752.3	29.69	754.2	37.9	3.3	86	SE	5.5	3.8	.....	10	.....	.....	SE	0.037	0.94	.....	Dr. Hildebrandsson.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the cooperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.13	714.6	29 58	751.4	46.2	7.9	60	S	.....	.....	2	.....	8	.....	.....	0.559	14.2	Cloudy	The Observatory.
Zurich	27.92	709.2	29.61	752.2	38.7	3.7	92	SE	.....	.....	1	.....	10	.....	.....	0.047	1.2	Covered	The Observatory.

Note.—For Geneva the corresponding departures from the normal values are: Barometer, —12.3 mm; Thermometer, +3.5 cent.; Relative Humidity, —18 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	29.86	758.5	57.6	14.2	71	SE	3	1.5	.....	.....	9	.....	SW	0	0	.....	The Observatory.
Fao, (Persian Gulf)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salonica	.....	.....	.....	.....	53.2	11.8	.....	SE	.....	.....	1	.....	10	.....	.....	.....	.....	Rainy	B. Stefanidès.
Valona	.....	.....	29.78	756.3	65.5	18.6	.....	S	.....	.....	2	.....	2	.....	.....	0	0	Slightly cl'dy	A. Bertrand.
Varna	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Imperial Observatory.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.96	761.0	30.08	763.9	69.0	17.2	95	SW	.....	.....	2	.....	10n	.....	SW	0.67	17.0	Raining	Prof. C. V. A. Van Dyck

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	29.32	744.7	29.39	746.5	29.5	— 1.4	93	NW	2	0.9	.....	0	.....	.....	.....	.....	.....	.....	Hon. J. Ferguson.
Brockville, Ontario	29.31	744.5	29.63	752.0	27	— 2.8	.....	SW	3	1.3	.....	.....	8s	.....	SW	0.04	1.0	Cloudy	W. R. Rigg.
*Chatham, N. B	.....	.....	29.42	747.3	26	— 3.3	94	Calm	0	0	.....	2k	2ks	NW	NW	0.32	8.1	Fair	G. A. Blair.
Charlottetown, P. E. Island	.....	.....	29.41	747.0	34	1.1	88	W	8	3.6	.....	.....	10s	.....	Calm	0.840	21.34	Cloudy	H. J. Cundall, C. E.
Cornwall, Ontario	29.37	746.0	29.57	751.1	28.6	— 2.2	100	NW	.....	.....	1	.....	10s	.....	.....	0.050	1.27	Cloudy	James Smith, M. A.
Dalhousie, N. B	29.34	745.2	29.38	746.2	28	— 2.2	88	W	.....	.....	2	.....	.....	.....	.....	Inap.	Inap.	Clear	H. A. Johnson.
Esquimault, B. C	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.12	3.0	.....	W. H. Bevis.
*Father Point, Quebec	.....	.....	30.38	771.6	32	0.0	82	SW	30	13.4	.....	8k	2s	SW	SW	0	0	Threatening	J. McWilliams.
Fredericton, N. B	29.657	753.17	29.627	752.37	30.6	— 1.1	89	N	6.0	2.7	.....	7ck	0	W	.....	0.33	8.4	Fair	Prof. Harrison.
*Fort Garry, Manitoba	29.47	748.5	30.39	771.9	5	—15.0	95	N	5	2.2	.....	5k	5n	N	N	0	0	Cloudy	James Stewart.
Goderich, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	H. J. Strang, M. A.
Granton, Ontario	28.75	730.2	29.04	760.6	14.5	— 9.7	100	SW	.....	.....	2	.....	10n	.....	.....	Inap.	Inap.	Cloudy	James Grant.
*Halifax, N. S	29.31	744.6	29.44	747.8	35	1.7	91	NW	3	1.3	.....	.....	10ks	.....	.....	1.491	37.86	Cloudy	F. Allison, M. A.
Hamilton, Ontario	29.59	749.3	29.89	759.2	22.7	— 5.2	79	N	.....	.....	1	8cs	.....	NW	.....	0	0	Cloudy	Geo. Dickson, M. A
Heart's Content, N. F	29.31	744.6	29.34	745.2	54	12.2	90	SW	.....	.....	6	.....	10	.....	.....	0.84	21.3	Raining	E. Weedon.
*Kingston, Ontario	29.32	744.7	29.67	753.6	23	— 5.0	91	W	6	2.7	.....	5c	2ks	Calm	Calm	0.01	0.3	Fair	S. Woods, M. A.
Little Glace Bay, N. S	29.30	744.2	29.34	745.2	39.0	3.9	86	SW	10	4.5	.....	7cs	.....	SW	.....	1.03	26.2	Fair	C. H. Rigby.
*Montreal, Quebec	29.38	746.2	29.68	751.3	27	— 3.8	88	W	6	2.7	.....	.....	10s	.....	.....	0.22	5.6	Cloudy	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.00	736.6	29.73	755.1	25	— 3.9	87	NW	.....	.....	.....	2ck	5ks	NW	NW	0.10	2.5	Fair	Rev. R. Mosley.
Peterboro, Ontario	28.95	735.3	29.73	755.1	28.0	— 2.2	66	W	.....	.....	2	.....	10s	.....	.....	0.04	1.0	Snowing	J. F. Jeffers, B. A.
Port Dover, Ontario	29.20	741.7	29.94	760.5	18	— 7.8	84	W	10	4.5	.....	5k	0	W	.....	0	0	Fair	H. Morgan.
Port Hastings, N. S	29.32	744 7	29.37	746.0	43	6.1	.....	W	6	2.7	.....	.....	.....	.....	.....	0.10	2.5	Fine	Peter Grant.
Port Stanley, Ontario	29.27	743.4	29.96	761.0	17	— 8.3	84	W	12	5.4	.....	5k	0	W	.....	Inap.	Inap.	Fair	M. Payne.
*Quebec, Quebec	29.21	741.9	29.54	750.3	30	— 1.1	68	SW	9	4.0	.....	.....	0	.....	.....	0	0	Fair	Capt. Ashe, R. N
*Rockliffe, Ontario	29.17	740 9	29.65	753.1	27	— 2.8	88	NW	8	3.6	.....	.....	10s	.....	NW	0.03	0.8	Cloudy	W. H. McIntyre.
St. John, N. B	29.34	745.2	29.51	749.5	31	— 0.6	100	Calm	0	0	.....	7ck	0	.....	.....	Inap.	Inap.	Fair	G. Murdock, C. E.
*Saugeen, Ontario	29.06	738.1	29.79	756.7	28	— 2.2	98	SW	16	7.2	.....	.....	10n	.....	W	0.23	5.8	Cloudy	K. Stewart.
Stayner, Ontario	28.95	735.3	29.76	755.9	28	— 2.2	73	NW	10	4.5	.....	.....	10ks	.....	W	0	0	Cloudy	R. J. Cole.
Stratford, Ontario	28.55	725.2	29.93	760.2	15.0	— 9.4	95	SW	10.0	4.5	.....	.....	10s	.....	.....	0.05	1.3	Cloudy	C. J. MacGregor, M. A.
*Sydney, C. B	29.30	744.2	29.33	745.0	40	4.4	82	W	9	4.0	.....	2k	8ks	SW	NW	1.14	29.0	Clearing	T. C. Hill.
*Toronto, Ontario	29.42	747.3	29.82	757.4	27	— 2.8	75	W	18	8.0	.....	8cs	2s	W	W	Inap.	Inap.	Cloudy	Magnetic Observatory.
Windsor, N. S	29.36	745.7	29.45	748.0	35.0	1.7	90	NE	0	0	.....	.....	10n	.....	.....	1.35	34.3	Fair	Prof. John E. Oram.
Woodstock, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Montgomery.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	56.0	13.3	87	S	.....	.....	.....	k	10ks	.....	.....	0.60	15.2	Threatening	John Delany

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

By authority of the **SECRETARY OF WAR.** UNITED STATES SERIES.

Furnished by the coöperation of Byt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	BAROMETER. Corrected for instrum'tal error and temperature. Inches.	BAROMETER. Corrected for instrum'tal error and temperature. Millimeters.	BAROMETER. Reduced to sea-level. Inches.	BAROMETER. Reduced to sea-level. Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Upper. From—	CLOUDS. Direction. Lower. From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	WEATHER.	OBSERVER.
Albany, New York	29.47	748.5	29.70	754.4	28	— 2.2	89	N	7	3.1		0	5ks		N	0.21	5.3	Fair	
Alpena, Michigan	29.14	740.1	29.81	757.2	22	— 5.6	86	W	9	4.0			10s		W	0.02	0.5	Cloudy	
Atlantic City, New Jersey	29.82	757.4	29.84	757.9	27	— 2.8	67	W	16	7.2		0	0			0.15	3.8	Clear	
Augusta, Georgia	30.08	764.0	30.28	769.1	27	— 2.8	64	NW	6	2.7		0	Haze		Calm	0	0	Hazy	
Baltimore, Maryland	29.87	758.7	29.92	760.0	27	— 2.8	66	NW	12	5.4		0	Sm'e		NW	0.01	0.3	Clear.	
Barnegat, New Jersey	29.76	755.9	29.78	756.4	27	— 2.8	77	NW	22	9.8		2k	0	NW		0.17	4.3	Clear	
Bismarck, Dakota	28.43	722.1	30.43	772.9	— 1	—18.3	68	W	8	3.6		0	0			0	0	Clear	
Boise City, Idaho	27.36	694.9	30.14	765.5	25	— 3.9	75	NW	1	0.4		5k	0	W		0	0	Fair	
Boston, Massachusetts	29.37	746.0	29.52	749.8	33	0.6	79	NW	16	7.2			9n		NW	0.74	18.8	Light snow.	
Brackettville, Texas	29.21	741.9	30.31	769.9	27	— 2.8	19	Calm	0	0		0	0			0	0	Clear	
Breckenridge, Minnesota	29.24	742.7	30.35	770.9	9	—12.8	89	NW	10	4.5			10s		Calm	Inap.	Inap.	Cloudy	
Brownsville, Texas	30.37	771.4	30.44	773.2	45	7.2	75	N	6	2.7			10s		N	0	0	Cloudy	
Buffalo, New York	29.10	739.1	29.84	757.9	21	— 6.1	85	W	23	10.3			10n		W	0.41	10.4	Heavy snow	
Burlington, Vermont	29.34	745.2	29.60	751.8	33	0.6	89	NW	4	1.8			10s		Calm	0.07	1.8	Cloudy	
Cairo, Illinois	29.96	761.0	30.39	771.9	23	— 5.0	73	N	2	0.9		0	0			0	0	Clear	
Camp Grant, Arizona	25.24	641.1	30.04	763.0	28	— 2.2	32	E			1	0	0			0	0	Clear	
Camp Verde, Arizona	26.90	683.2	30.39	771.9	24	— 4.4	48	NW				0	0			0	0	Clear	
Campo, California																			
Cape Hatteras, N. Carolina	29.91	759.7	29.92	760.0	34	1.1	61	NW	26	11.6		5k	0	NW		0.01	0.3	Fair	
Cape Henry, Virginia	29.92	760.0	29.94	760.5	31	— 0.6	89	NW	28	12.5		0	5s		NW	0.28	7.1	Fair	
Cape Lookout, N. Carolina	30.02	762.5	30.04	763.0	32	0.0	50	NW	33	14.8		0	2ks		SW	0	0	Fair	
Cape May, New Jersey	29.83	757.7	29.86	758.4	30	— 1.1	68	NW	40	17.9		8k	0	NW		Inap	Inap.	Fair	
Charleston, South Carolina	30.17	766.3	30.24	768.1	31	— 0.6	41	W	10	4.5		0	0			0	0	Clear	
Cheyenne, Wyoming	23.98	609.1	29.92	760.0	6	—14.4	52	W	1	0.4		0	0			0	0	Clear	
Chicago, Illinois	29.29	744.0	30.02	762.5	20	— 6.7	85	W	14	6.3			10s		Calm	0.01	0.3	Cloudy	
Cincinnati, Ohio	29.48	748.8	30.18	766.6	17	— 8.3	67	W	8	3.6			10ks		W	0.01	0.3	Cloudy	
Cleveland, Ohio	29.30	744.2	30.08	764.0	11	—11.7	79	S	16	7.2			10s		Calm	Inap.	Inap.	Cloudy	
Concho, Texas	28.46	722.9	30.32	770.1	16	— 8.9	67	Calm	0	0		0	0			0	0	Clear	
Corsicana, Texas	30.04	763.0	30.57	776.5	18	— 7.8	48	N	5	2.2		2cs	0	Calm		0	0	Clear	
Davenport, Iowa	29.52	749.8	30.21	767.3	17	— 8.3	83	W	5	2.2			10s		Calm	0.01	0.3	Cloudy	
Denison, Texas	29.68	753.9	30.58	776.7	17	— 8.3	67	NW	6	2.7		0	0			0	0	Clear	
Denver, Colorado	24.80	629.9	30.02	762.5	— 5	—20.6	63	W	4	1.8		0	0			0	0	Clear	
Detroit, Michigan	29.26	743.2	29.98	761.5	14	—10.0	81	W	12	5.4			10n		Calm	0.02	0.5	Light snow.	
Dodge City, Kansas	27.66	702.6	30.23	767.8	5	—15.0	75	NW	6	2.7		0	Haze		Calm	0	0	Clear	
Dubuque, Iowa	29.40	746.7	30.14	765.5	20	— 6.7	70	NW	7	3.1			10s		Calm	0.02	0.5	Cloudy	
Duluth, Minnesota	29.47	748.5	30.20	767.1	21	— 6.1	85	N	10	4.5			10s		N	0	0	Cloudy	
Eagle Pass, Texas	29.66	753.4	30.47	773.9	28	— 2.2	77	Calm	0	0		0	0			0	0	Clear	
Eastport, Maine	29.42	747 3	29 49	749.0	33	0.6	89	NW	5	2.2		5ck	5s	SW	W	0.46	11.7	Cloudy	
Erie, Pennsylvania	29.19	741.4	29.95	760.7	17	— 8.3	83	W	16	7.2			10n			0.53	13.5	Light snow.	
Escanaba, Michigan	29.25	742.9	29.93	760.2	28	— 2.2	77	N	16	7.2			10s		N	0.16	4.1	Cloudy	
Florence, Arizona	28.51	724.1	30.11	764.8	45	7.2	24	E				0	0			0	0	Clear	
Fort Bayard, New Mexico	24.06	611.1	30.06	763.5	17	— 8.3	35	NW	6	2.7		0	0			0	0	Clear	
Fort Craig, New Mexico	25.66	651.8			11.5	—11.4	51	Calm	0	0		0	0			0	0	Clear	
Fort Gibson, Indian Ter	29.89	759.2	30.50	774.7	11	—11.7	79	Calm	0	0		0	0			Inap.	Inap.	Clear	
Fort Griffin, Texas	29.17	740.9	30.58	776.7	18	— 7.8	68	Calm	0	0		0	0			0	0	Clear	
Fort St. Michael, Alaska																			
Fort Sill, Indian Territory	29.19	741.4	30.43	772.9	14	—10.0	81	Calm	0	0		0	0			Inap.	Inap.	Clear	
Galveston, Texas	30.45	773.4	30.50	774.7	32	0.0	79	NE	16	7.2		0	0			0	0	Clear	
Grand Haven, Michigan	29.20	741.7	29.86	758.4	34	1.1	79	N	10	4.5			10s		Calm	0.14	3.6	Cloudy	
Indianapolis, Indiana	29.34	745.2	30.18	766.6	17	— 8.3	75	W	4	1.8		0	5s		W	0.05	1.3	Fair	
Indianola, Texas	30.52	775.2	30.54	775.7	28	— 2.2	66	N	23	10.3		0	2s		Calm	0	0	Clear	
Jacksboro, Texas																			
Jacksonville, Florida	30.52	770.1	30.35	770.9	33	0.6	43	NW	2	0.9		0	0			0	0	Clear	
Keokuk, Iowa	29.58	751.3	30.25	768.3	14	—10.0	63	W	7	3.1		0	2s		Calm	0	0	Fair	
Key West, Florida	30.14	765.5	30.18	766.6	60.0	15.6	65	N	26	11.6			10s		N	0.02	0.5	Cloudy	
Kittyhawk, North Carolina	29.95	760.7	29.98	761.5	31	— 0.6	68	N	25	11.2			10ks		N	0.14	3.6	Cloudy	
Knoxville, Tennessee	29.24	742.7	30.33	770.4	18	— 7.8	67	SW	8	3.6		0	0			Inap.	Inap.	Clear	
La Crosse, Wisconsin	29.36	745.7	30.14	765.5	23	— 5.0	86	N	8	3.6			10s		N	0.12	3.0	Cloudy	
La Mesilla, New Mexico	26.24	666.5	30.40	772.1	16	— 8.9	57	Calm	6	0		0	0			0	0	Clear	
Laredo, Texas					32	0.0	69	NE	11	4.9			10s		Calm	0	0	Cloudy	
Leavenworth, Kansas	29.47	748.5	30.41	772.4	11	—11.7	79	NW	3	1.3		0	0			0	0	Clear	
Los Angeles, California	29.68	753.9	30.02	762.5	50	10.0	27	NE	5	2.2		0	0			0	0	Clear	
Louisville, Kentucky	29.66	753.4	30.27	768.8	21	— 6.1	85	W	8	3.6		2c	2s	SW	SW	Inap.	Inap.	Fair	
Lynchburg, Virginia	29.34	745.2	30.06	763.5	27	— 2.8	53	NW	8	3.6		0	0			Inap.	Inap.	Clear	
Maricopa Wells, Arizona					32	0.0	2	N				0	0			0	0	Clear	
Marquette, Michigan	29.25	742.9	29.98	761.5	27	— 2.8	78	N	12	5.4			10s		Calm	0.76	19.3	Cloudy	
Mason, Texas	28.77	730.7	30.74	780.8	14	—10.0	66	Calm	0	0		0	0			0	0	Clear	
Memphis, Tennessee	30.08	764.0	30.44	773.2	18	— 7.8	67	NW	6	2.7		0	0			0	0	Clear	
Milwaukee, Wisconsin	29.26	743.2	29.98	761.5	22	— 5.6	72	NW	16	7.2		1c	2s		NW	0.01	0.3	Fair	
Mobile, Alabama	30.40	772.1	30.44	773.2	27	— 2.8	66	NW	4	1.8		0	0			0	0	Clear	
Montgomery, Alabama	30.15	765.8	30.40	772.1	27.5	— 2.5	72	W	4	1.8		0	Sm'e		Calm	0	0	Clear	
Morgantown, West Virginia	28.98	736.1	30.11	764.8	19	— 7.8	68	W	17	7.6			10s		W	0.06	1.5	Cloudy	
Mt. Washington, N. H.	23.14	587.8	29.50	749 3	10	—12.2	100	E	12	5.4			10n		E	0.96	24.4	Heavy snow	
Nashville, Tennessee	29.77	756.1	30.36	771.1	19	— 7.2	69	W	5	2.2		0	Haze		Calm	0	0	Clear	
New Haven, Connecticut	29.55	750.6	29.67	753.6	33	0.6	52	NW	6	2.7		0	5s		W	0.19	4.8	Fair	
New London, Connecticut	29.56	750.8	29 67	752.3	31	— 0.6	58	NW	12	5.4		2k	2ks	W	W	0.45	11.4	Fair	
New Orleans, Louisiana	30.36	771.1	30.42	772.7	38	3.3	52	NW	2	0.9		0	Sm'e		Calm	0	0	Clear	
Newport, Rhode Island	29.50	749.3	29.55	750.6	34	1.1	79	NW	18	8.0		0	1s		NW	0.55	14.0	Clear	
New York, New York	29.58	751.3	29.78	756.4	27	— 2.8	76	W	18	8.0		Haze	0			0.31	7.9	Clear	
Norfolk, Virginia	29.93	760.2	30.06	762.0	29	— 1.7	67	W	12	5.4		0	0			0.28	7.1	Clear	
North Platte, Nebraska	27.27	692.6	30.15	765.8	1	—17.2	85	NW	8	3.6		0	0			0	0	Clear	
Olympia, Washington Ter.	29.94	760.5	29.98	761.5	40	4.4	100	S	2	0.9			10n		Calm	0.20	5.1	Light rain	
Omaha, Nebraska	29.18	740.7	30.36	771.1	9	—12.8	78	W	6	2.7		0	2s		Calm	0	0	Clear	
Oswego, New York	29.36	745.7	29.69	754.1	33	0.6	89	W	22	9.8			10n		NW	0.20	5.1	Light snow.	
Pembina, Dakota	29.51	749.5	30.43	772.9	5	—15.0	88	NW	5	2.2			10s		Calm	0.08	2.0	Cloudy	
Philadelphia, Pennsylvania	29.79	756.7	29.84	757.9	26	— 3.3	88	NW	28	12.5		0	Sm'e		Calm	0.02	0.5	Clear	
Phœnix, Arizona					36	2.2	36	Calm				0	0			0	0	Clear	
Pike's Peak, Colorado	17.51	444.7	29.72	754.9	2	—16.7	72	NE	36	16.1		0	0			0	0	Clear	
Pioche, Nevada	24.11	612.4	29.88	758.9	25	— 3.9	50	NW	1	0.4		0	0			0	0	Clear	
Pittsburg, Pennsylvania	29.20	741.7	30.08	764.0	14	—10.0	81	W	14	6.3		5k	0	W		Inap.	Inap.	Fair	
Port Huron, Michigan	29.22	742.2	29.93	760.2	15	— 9.4	82	SW	12	5.4		0	2ks		SW	Inap.	Inap.	Fair	
Portland, Maine	29.45	748.0	29.50	749.3	38	3.3	91	NE	9	4.0			10n		Calm	0.60	15.2	Heavy snow	
Portland, Oregon	30.05	763.3	30.14	766.1	40	4.4	91	Calm	0	0			10n		Calm	0.13	3.3	Light rain	
Prescott, Arizona	24 84	630.9	30.20	767.1	19	— 7.2	69	N				0	0			0	0	Clear	
Punta Rassa, Florida	30.26	768.6	30.28	769.1	44	6.7	54	N	28	12.5		5cs	2ck	E	NE	0	0	Fair	
Red Bluff, California	29.70	754.4	30.07	763.8	42	5.6	83	N	6	2.7		0	0			0	0	Clear	
Rochester, New York	29.10	739.1	29.74	755.4	25	— 3.9	87	W	16	7.2		2k	2s	W	W	Inap.	Inap.	Fair	
Roseburg, Oregon	29.56	750 8	30.14	765.5	44	6.7	96	Calm	0	0			10s		Calm	0.04	1.0	Cloudy	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	BAROMETER. Corrected for instrum'tal error and temperature. Inches.	Millimeters	Reduced to sea-level. Inches.	Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	Low'r 0—10.	Direction. Upper. From—	Lower. From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	Millimeters.	WEATHER.	OBSERVER.
Sacramento, California	29.97	761.2	30.00	763.5	44	6.7	80	N	4	1.8	.....	1c	Haze	NW	Calm	0	0	Hazy	
St. Louis, Missouri	29.89	754.1	30.31	769.9	15	—9.4	65	W	12	5.4	.....	0	0	.....	.....	0	0	Clear.	
St. Marks, Florida	30.37	771.4	30.39	771.9	27	—2.8	88	N	5	2.2	.....	0	0	.....	.....	0	0	Clear.	
St. Paul, Minnesota	29.26	743.2	30.16	766.1	14	—10.0	63	NW	8	3.6	.....	8ck	0	Calm	.....	Inap.	Inap.	Fair	
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salt Lake City, Utah	25.79	655.0	30.12	765.0	18	—7.8	68	SE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
San Antonio, Texas	29.79	756.7	30.44	773.2	26	—3.3	40	NE	4	1.8	.....	0	0	.....	.....	0	0	Clear.	
San Diego, California	29.97	761.2	30.04	763.0	50	10.0	19	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Sandusky, Ohio	29.33	745.0	30.05	763.3	16	—8.9	83	SW	20	8.9	.....	.....	10s	.....	Calm	Inap.	Inap.	Cloudy	
Sandy Hook, New Jersey	29.72	754.9	29.75	755.6	30	—1.1	68	NW	32	14.3	.....	2k	0	NW	.....	0.40	10.2	Fair	
San Francisco, California	29.98	761.5	30.01	763.0	52	11.1	79	NW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Santa Fé, New Mexico	23.25	590.5	29.79	756.7	10	—12.2	69	NE	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Savannah, Georgia	30.19	766.8	30.29	769.4	30	—1.1	48	NW	16	7.2	.....	0	0	.....	.....	0	0	Clear	
Shreveport, Louisiana	30.30	769.6	30.54	775.7	19	—7.2	84	NW	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Smithville, North Carolina	30.12	765.0	30.16	766.1	29	—1.7	67	NW	8	3.6	.....	0	1ks	.....	Calm	0	0	Clear	
Springfield, Massachusetts	29.43	747.5	29.56	750.8	31	—0.6	60	NW	8	3.6	.....	8ck	0	W	.....	0.33	8.4	Fair	
Stanwix, Arizona	.....	.....	.....	.....	29	—1.7	78	NE	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Stockton, Texas	27.23	691.6	30.23	767.8	18	—7.8	68	SE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Thatcher's Island, Mass	29.48	748.8	29.53	750.0	34	1.1	90	NW	24	10.7	.....	.....	10n	.....	NW	0.95	24.1	Light snow	
Toledo, Ohio	29.30	744.2	30.02	762.5	18	—7.8	84	SW	20	8.9	.....	.....	10s	.....	SW	0.02	0.5	Cloudy	
Tucson, Arizona	27.60	701.0	30.16	766.1	38	3.3	30	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Tybee Island, Georgia	30.24	768.1	30.27	768.8	29	—1.7	67	NW	20	8.9	.....	0	0	.....	.....	0	0	Clear	
Umatilla, Oregon	29.88	758.9	.....	.....	30	—1.1	79	Calm	0	0	.....	.....	10s	.....	Calm	Inap.	Inap.	Cloudy	
Vicksburg, Mississippi	30.18	766.6	30.47	773.9	25	—3.9	62	N	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Virginia City, Montana	24.28	617.7	29.76	755.9	10	—12.2	79	SE	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Visalia, California	29.70	754.4	30.08	764.0	41	5.0	82	Calm	0	0	.....	5c	0	W	.....	0	0	Fair	
Washington, D. C	29.85	758.2	29.97	761.2	24	—4.4	61	NW	24	10.7	.....	0	0	.....	.....	0.01	0.3	Clear	
Wickenburg, Arizona	.....	.....	.....	.....	23	—5.0	8	S	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Wilmington, N. Carolina	30.04	763.0	30.13	765.3	30	—1.1	89	NW	24	10.7	.....	0	0	.....	.....	0	0	Clear	
Winnemucca, Nevada	25.70	652.8	30.06	763.5	20	—6.7	70	NE	5	2.2	.....	5ck	0	SW	.....	0	0	Fair	
Wood's Holl, Mass	29.49	749.0	29.55	750.6	36	2.2	70	NW	20	8.9	.....	5ck	5s	SW	NW	0.58	14.7	Cloudy	
Yankton, Dakota	29.00	736.6	30.44	773.2	5	—15.0	75	NW	5	2.2	.....	8cs	5s	NW	NW	0	0	Cloudy	
Yuma, Arizona	29.95	760.7	30.12	765.0	42	5.6	42	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
SUB-SERIES.																			
York Factory, B. A.	30.30	769.6	30.36	771.1	—5.0	—15.0	82	W	10	4.5	.....	5k	0	W	.....	0	0	Fair	J. Fortescue, W. Wood.
Havana, Cuba, W. I.	30.04	763.0	30.06	763.5	67	19.4	68	NW	14.4	6.4	.....	.....	10n	.....	N	0.12	3.0	Cloudy	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.14	765.5	30.15	765.8	78	25.6	82	Calm	0	0	.....	10c	2s	Calm	.....	0	0	.....	James Gall.
Navassa, W. I.	29.88	758.9	29.96	761.0	82	27.8	.....	SE	2	0.9	.....	.....	.....	.....	.....	0	0	Fair	F. M Everett.
St. Thomas, W. I.	.....	.....	.....	.....	81	27.2	78	E	4	1.8	.....	2c	8ks	E	.....	0.7	18.	Cloudy	G. O. Gellich.
Paramaribo, D. Guiana, S. A.	.....	.....	29.97	761.2	83	28.3	79	E	.....	.....	2	4c	5k	E	.....	0	0	Fair	C. J. Hering.
Batavia, Dutch Guiana, S. A	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Dr. H. Groot.
Medellin, Colombia, S. A.	25.28	642.1	.....	.....	64.5	18.1	84	Calm	.....	.....	0	2cs;k	1ks	.....	.....	0	0	Fair	Thomas Herran.
Honolulu, Oahu, H. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Daniel Smith.
Makawao, Maui, H. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters: Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft.. or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Ploche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,273 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Ploche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard Mare Island, Cal.	30.04	763.0	48	8.9	46	7.8	84	NNW	2	0.9	.....	.....	6cs	.....	Calm	0	0	.....	.....	Fine.....	
Navy Yard, Pensacola, Fla.	30.40	772.1	.....	.....	34	1.1	79	NW	1	0.4	.....	.....	2	.....	.....	0	0	.....	.....	D. clouds.....	
Navy Yard, Portsmouth, N.H	29.56	750.8	50	10.0	33	0.6	100	W	3	1.3	.....	.....	10	.....	.....	0.5	13.	.....	.....	Snowing.....	
Naval Hospital, Yokohama, Japan.....	30.29	769.4	51	10.6	44	6.7	68	NE	.....	.....	2	.....	7ks	.....	SW	Slight	Slight	.....	.....	Cloudy.....	
Adams. [Magellan Port Augosta Straits of	29.57	751.1	46	7.8	45	7.2	84	NW	.....	.....	6-7	.....	10	.....	W	Heavy	Heavy	Light	W	Raining.....	
Alert, Yokohama, Japan.....	30.43†	772.9†	48	8.9	48	8.9	70	NNE	.....	.....	2	.....	9	.....	N	.....	.....	.....	.....	D. clouds....	
Alliance, Constantinople, Turkey.	29.98	761.5	71	21.7	60	15.6	71	SSE	.....	.....	1-2	.....	10	.....	S	.....	.....	.....	.....	Overcast.....	
Ashuelot. Shanghai, China.....	30.13	765.3	56	13.3	47	8.3	92	W	.....	.....	3-5	.....	10	.....	Calm	.....	.....	.....	.....	Squally	
Canonicus, New Orleans, La.....	30.30	769.6	36	2.2	37	2.8	53	NNW	.....	.....	3	.....	1	.....	.....	.....	.....	.....	.....	Clear.....	
Colorado, New York, N. Y.....	29.70	754.4	30	—1.1	29	— 1.7	56	W	24	10.7	.....	.....	3	.....	W	0.17	4.3	.....	.....	Fair	
Despatch, Constantinople, Turkey.	30.00	762.0	74	23.3	60	15.6	65	SSE	.....	.....	1	.....	9	.....	SW	.....	.....	.....	.....	Cloudy.....	
Essex, Gaboon River, Africa.....	29.88	758.9	82	27.8	84	28.9	91	WSW	.....	.....	1	.....	3	.....	.....	.....	.....	.....	.....	D. clouds.....	
Franklin, Norfolk, Va.....	30.10	764.5	32	0.0	30	— 1.1	68	NNW	9	4.0	.....	.....	4	.....	NNW	0.1	3.	.....	.....	D. clouds.....	
Guard, Lisbon, Portugal.....	30.10	764.5	61	16.1	62	16.7	56	WNW	.....	.....	2	.....	7	.....	W	.....	.....	.....	.....	Showery.....	
Lackawana, San Francisco, Cal.....	30.10	764.5	.....	.....	54	12.2	87	N	.....	.....	2-3	.....	6	.....	.....	.....	.....	.....	.....	D. clouds.....	
Marion, Smyrna, Turkey.....	29.96	761.0	58	14.4	56	13.3	94	SE	.....	.....	1	.....	10	.....	Calm	Moderate.	Moderate	Smooth	WNW	Raining.....	
Michigan, Erie, Pa.....	29.38	746.2	55	12.8	19	— 7.2	69	W	.....	.....	4	.....	10	.....	W	.....	.....	.....	.....	Snowing.....	
Monongahela. N. 31° 23′, E. 30° 02′.....	30.13	765.3	67	19.4	68	20.0	95	W	.....	.....	2	.....	ck	.....	.....	.....	.....	Smooth	.....	D. clouds.....	
New Hampshire, Port Royal, S.C.....	30.31	769.9	.....	.....	31	— 0.6	66	NW	20	8.9	.....	.....	.....	.....	.....	.....	.....	.....	.....	Blue sky.....	
Omaha, Callao, Peru.....	30.11	764.8	73	22.8	71	21.7	95	SE	2	0.9	.....	.....	10	.....	SE	0	0	Smooth	.....	Cloudy.....	
Onward, Callao, Peru.....	30.08†	764.0†	72	22.2	70	21.1	90	SE	.....	.....	3	.....	9	.....	.....	.....	.....	Long	W	Misty.....	
Ossinee, Norfolk, Va.....	30.00	762.0	61	16.1	30	— 1.1	78	NW	.....	.....	4	.....	4	.....	NNW	.....	.....	.....	.....	D. clouds.....	
Palos, Shanghai, China.....	30.08	764.0	56	13.3	46	7.8	92	WNW	.....	.....	6	.....	10	.....	N&W	.....	.....	.....	.....	Misty.....	
Plymouth. N. 28° 46′, W. 68° 38′.....	29.93	760.2	73	22.8	72	22.2	100	SW	.....	.....	2	.....	9	.....	.....	.....	.....	Moderate.	SW	Overcast.....	
Powhatan, Hampton Roads, Va.....	.....	.....	.....	.....	31	— 0.6	100	NW	12.0	5.4	.....	.....	4	.....	.....	0.20	5.1	.....	NW	.....	
Ranger, Shanghai, China.....	30.18	766.6	65	18.3	55	12.8	80	WNW	.....	.....	2	.....	10	.....	NW	.....	.....	.....	.....	Cloudy.....	
Rio Bravo, Brownsville, Texas.....	30.29	769.4	.....	.....	45	7.2	76	NNW	.....	.....	4	.....	10	.....	N	.....	.....	.....	.....	D. clouds.....	
Santee, Annapolis, Md.....	29.98	761.5	66	18.9	28	— 2.2	66	NW	.....	.....	6	.....	2	.....	N	0.02	0.5	.....	.....	Clear.	
Saratoga, Hampton Roads, Va.....	.....	.....	.....	.....	29	— 1.7	89	NNW	.....	.....	3	.....	8	.....	NW	Moderate.	Moderate.	.....	.....	Stormy.....	
St. Louis, League Island, Pa	29.75	755.6	32	0.0	28	— 2.2	88	NW	10	4.5	.....	.....	5	.....	SW	0.01	0.3	.....	.....	Fair.....	
Swatara, Norfolk, Va.....	30.07	763.8	.....	.....	41	5.0	57	WNW	.....	.....	5	.....	3	.....	N&W	.....	.....	.....	.....	D. clouds....	
Tennessee, Yokohama, Japan.....	30.42	772.7	60	15.6	47	8.3	100	NE	6	2.7	.....	.....	9	.....	N	0	0	Smooth	.....	Misty.	
Trenton, Villefranche, France.....	29.48	748.8	.....	.....	61	16.1	66	SW	5	2.2	.....	.....	1	.....	S&W	0.5	13.	Ground	.....	D. clouds.....	
Vandalia, Villefranche, France.,...	29.44	747.8	59	15.0	60	15.6	49	SW	.....	.....	2-4	.....	1	.....	.....	.....	.....	Mod'a'e Smooth	SW	D. clouds.....	
Wabash, Boston, Mass.....	29.55	750.6	52	11.1	34	1.1	79	NW	18	8.0	.....	.....	9	.....	NW	0.7	18.	.....	.....	D. clouds. ...	
Wyoming, Washington, D. C.....	30.37†	771.4†	40	4.4	27	— 2.8	.....	NW	.....	.....	3-5	.....	0	.....	.....	.....	.....	.....	.....	Squally.....	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. The position given for the Plymouth is that at noon, local time, instead of that at 7:35 a. m., Washington time.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.	Character.	Direction from—		
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—				
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska, Esquimault, B. C.			30.13†	765.3†	40	4.4		NW			3		10					Raining	Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama, N. 14° 44′ 27″, W. 94° 8′ 2″			29.75	755.6	79	26.1	86	NNW			6		8		NNW	Very rough.	NNW	D. clouds	Capt. Howard.
S. S. City of Peking																			Lt. Z. L. Tanner, U.S.N.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio, N. 22° 38′, E. 116° 14′			30.02	762.5	67	19.4		NW			5		10		NNE	Mod'ate	NE	Overcast	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

NOTE.—The originals give the wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. † Aneroid; corrected for elevation, instrumental error not known.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.

S. S. Belgic																			Capt. John Metcalf.
S. S. Gaelic, N. 30° 00′, W. 176° 46′			30.23*	767.8*	70	21.1	95	SW			4		c		SW	Smooth		D. clouds	Capt. W. H. Kidley
S. S. Oceanic, N. 43° 24′, W. 144° 12′			30.14	765.5	53	11.7	80	NW			0-3		6		Var.	Confused		D. clouds	Capt. H. Parsell.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. *Aneriod.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig																			
S. S. Nürnberg, N. 41° 21′, W. 17° 5′			30.16	766.1	61.0	16.1	74	WNW			5		k		W	Long	WNW	Overcast	Capt. K. Undütsch.
S. S. Ohio, Chesapeake Bay			30.05	763.3	33.0	0.6	70	WNW			3		k		NW			Blue sky	Capt. A. Jaeger.
																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, nor distinguish between upper and lower clouds.

UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Lo'wr	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second	0—10.	0—10.	0—10.	From—	From—	Character	Direction From—		
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois.....																			Captain Shackelford.
S. S. Indiana, N. 51° 38′, W. 12° 30′.....			29.31*	744.5*	51	10.6	93	NW			7		10			Heavy	NW	Overcast.....	Captain Sargent.
S. S. Ohio. N. 42° 08′, W. 64° 34′.....			29.54	750.3	45.5	7.5	88	W			6		9		W	Very rough.	S	Foggy	Captain Morrison.
S. S. Pennsylvania, N. 49° 31′, W. 29° 01′.....			29.96†	761.0†	55	12.8	93	W			6		7		WSW	Large	WNW	Cloudy	Captain Harris.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. *Aneroid; correction for elevation applied, instrumental error not known.
† Corrected for temperature and elevation, instrumental error not known.

RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

S. S. Nederland.....																			Capt. Randle.
S. S. Switzerland.....																			
S. S. Vaderland.....																			Capt. Jackson.
																			Capt. Nichols.

ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

S. S. Hibernian.....																			
S. S. Scandinavian, N. 51° 49′, W. 14° 41′.....			29.26	743.2	50	10.0		WNW			7		9		WNW	Short & high.	WNW	Squally.....	Capt. W. Richardson.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, Kennebunk, Maine.....			29.54	750.3	46	7.8	100	Calm	0	0			10n		Calm			Snowing.....	Capt. James Jorgensen.

NOTE.—The originals for the schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^{d}.) Chief Signal Officer. U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON DECEMBER 1, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:58 P. M. PARIS mean time.

1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.

1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours	.....	.....	30.03	762.8	64.9	18.3	62	NW	.....	.....	2	.....	1	.....	.....	0	0	Very fair.....	Michel.
Algiers	.....	.....	29.86	758.5	65.5	18.6	37	NW	.....	.....	1	.....	5	.....	.....	0	0	Cloudy.....	Peter.
La Calle	.....	.....	29.85	758.2	63.1	17.3	56	NW	.....	.....	3	.....	6	.....	.....	Inap.	Inap.	Cloudy	Fleury.
Tunis	.....	.....	29.96	761.0	61.9	16.6	47	W	.....	.....	3	.....	1	.....	.....	0.031	0.8	Very fair.....	Jacques.
Sfax	.....	.....	30.00	762.0	64.4	18.0	.....	SW	.....	.....	2	.....	1	.....	.....	0	0	Very fair.....	Husson.
Saida	.....	.....	30.02	762.5	63.1	17.3	26	WSW	.....	.....	2	.....	2	.....	.....	0	0	Fair.....	Millot.
Tebessa	.....	.....	29.77	756.1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Bassières.
Geriville	.....	.....	29.97	761.3	54.3	12.4	86	SW	.....	.....	2	.....	3	.....	.....	0	0	Pretty fair..	Lemaillot.
Laghouat	.....	.....	30.00	762.0	62.6	17.0	34	W	.....	.....	6	.....	2	.....	.....	0	0	Fair.....	Guyot.
Biskra	.....	.....	29.95	760.8	64.8	18.2	56	NW	.....	.....	1	.....	5	.....	.....	0	0	Cloudy.....	Kuntz.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890 ? meters, or 2,919.9 ? feet; Tebessa, 1,088 ? m., or 3,569.4 ? ft.; Geriville, 1,360 ? m.; or 4,461.7 ? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

Agram	28.08	736.2	29.55	750.5	38.8	3.8	92	NW	.....	.....	2	.....	10	.....	.....	0.461	11.7	.....	Prof. Ivan Stozir
Cracow, I. R. Observatory	28.78	731.0	29.55	750.6	42.4	5.8	85	NE	.....	.....	3	.....	6	.....	.....	0	0	.....	Dr. Wierzbiski.
Eperies	28.62	727.0	29.50	749.4	45.0	7.2	86	Calm	.....	.....	0	.....	8c	.....	.....	0	0	.....	Julius Mikolik.
Gratz	28.26	717.9	29.53	750.1	40.6	4.8	84	W	.....	.....	3	.....	10	.....	.....	1.193	30.3	.....	Andreas Rospini.
Hermannstadt	28.02	711.8	29.44	747.7	46.9	8.3	79	SE	.....	.....	1	.....	10	.....	.....	0.697	17.70	Raining.....	Prof. Reissenberger.
Kremsmünster	28.22	716.9	29.59	751.5	38.8	3.8	93	W	.....	.....	1	.....	10	.....	.....	0.532	13.5	.....	Prof. C. Wagner.
Lemberg	28.59	726.1	29.58	751.2	45.0	7.2	98	S	.....	.....	1	.....	10	.....	.....	0.083	2.1	.....	Dr. T. Stanecki.
Pola	29.43	747.6	29.54	750.4	52.2	11.2	83	WNW	.....	.....	3	.....	9ks	.....	.....	0.812	20.62	.....	I.R.HydrographicOffice
Szathmar	29.03	737.4	29.49	749.0	56.1	13.4	54	E	.....	.....	5	.....	7	.....	.....	0	0	.....	Johann Tamas, S. J.
Szegedin	29.13	740.0	29.41	747.0	51.8	11.0	77	S	.....	.....	2	.....	10	.....	.....	0.154	3.90	.....	Karl Stancel.
Trieste	29.48	748.7	29.58	751.3	50.4	10.2	67	NNE	.....	.....	1	.....	7	.....	.....	Inap.	Inap.	.....	P. Busin.
Vienna	28.82	731.9	29.52	749.9	36.1	2.3	93	W	.....	.....	4	.....	10	.....	.....	0.827	21.0	Raining.....	I. R. Central Met. Obs'y
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day; at Syathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

Arlon	27.96	710.3	29.48	748.9	40.6	4.8	85	S	.....	.....	1	.....	10	.....	.....	0.051	1.3	.....	Prof. M. Passau.
Brussels	29.19	741.3	29.39	746.4	45.3	7.4	77	S	.....	.....	3	5	?	SW	.....	.....	.....	Light rain?..	Royal Observatory.
Furnes	29.29	743.9	29.31	744.5	45.1	7.3	94	SSE	.....	.....	2	.....	10	.....	.....	0.008	0.2	Foggy	M. E. de Cae.
Maeseyck	29.30	744.1	29.43	747.4	45.3	7.4	92	S	.....	.....	2	.....	10	.....	.....	0	0	.....	M. Pierrot.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	29.21	741.9	29.31	744.5	44.0	6.7	.....	NNE	14	6.3	.....	.....	6	.....	.....	0.050	1.27	D. clouds.....	W. Boswell.
Ardrossan	29.28	743.7	29.29	744.0	47	8.3	.....	NW	.....	.....	2	.....	5	.....	.....	.....	.....	D. clouds.....	William McNeil.
Armagh, Observatory	.....	.....	29.42	747.3	44.0	6.7	.....	WNW	9	4.0	.....	.....	5	.....	.....	.....	.....	D. clouds.....	S. Call, for Dr. Robinson
Bidston, (Liverpool Obs.)	.....	.....	29.30	744.2	43.4	6.3	.....	W	16	7.2	.....	.....	10	.....	.....	.....	.....	Raining.....	John Hartnup.
Birr Castle, (Parsonstown)	.....	.....	29.50	749.3	46.7	8.2	.....	WNW	.....	.....	2	.....	0	.....	.....	.....	.....	Blue sky.....	J. Dreyer.
Bradford, Yorkshire	28.83	732.3	29.22	742.2	44.1	6.7	.....	SW	.....	.....	2	.....	7	.....	.....	0.25	6.3	D. clouds.....	J. McLandsborough.
Bridgetown, (Barbados)	29.92	760.0	29.95	760.7	83.0	28.3	.....	NE	.....	.....	2	.....	2	.....	.....	.....	.....	D. clouds.....	Pvt. G. W. Roberts, A.
Cambridge, Observatory	.....	.....	29.30	744.2	46.0	7.8	.....	S	.....	.....	1	.....	1	.....	.....	.....	.....	D. clouds.....	H. Todd. [H. C.
Cardington	.....	.....	29.35	745.5	42.0	5.6	.....	N	.....	.....	1	.....	10	.....	.....	.....	.....	Overcast.....	John McLaren.
Chatham, School M. E	29.12	739.6	29.26	743.2	45.2	7.3	.....	W	.....	.....	1	.....	10	.....	.....	.....	.....	Raining.....	Lt. W. G. Morris, R. E.
Dartmoor	27.97	710.4	29.44	747.8	42.0	5.6	.....	NW	.....	.....	4	.....	2	.....	.....	.....	.....	Fine.....	Alexander Watt.
Davos Platz (Switzerland)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Francis Redford, M. A.
Donaghadee	29.32	744.7	29.34	745.2	47	8.3	.....	NNW	.....	.....	4	.....	3	.....	.....	.....	.....	D. clouds.....	J. Mac Gowan.
Dover	29.28	743.7	29.30	744.2	46	7.8	.....	SSW	.....	.....	5	.....	10	.....	.....	.....	.....	Raining.....	J. Costello.
Eccles, (near Manchester)	.....	.....	29.27	743.4	43.9	6.6	.....	SW	2.6	1.2	.....	.....	7	.....	.....	.....	.....	D. clouds.....	Thomas Mackereth.
Falmouth, Observatory	29.22	742.2	29.44	747.8	48.6	9.2	.....	NW	.....	.....	4	.....	2	.....	.....	.....	.....	D. clouds.....	The Staff,
Fort Napier, (Natal)	27.74	704.6	29.94	760.5	79.2	26.2	.....	E	.....	.....	2	.....	6	.....	.....	.....	.....	D. clouds.....	Pvt. G. Salmon, A. H. C.
Free Town, (Sierra Leone)	.....	.....	29.92	760.0	87.0	30.6	.....	NW	.....	.....	1	.....	3	.....	.....	.....	.....	D. clouds.....	
Galway, Queen's College	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	29.94	760.5	30.00	762.0	61.6	16.4	.....	NW	.....	.....	4	.....	8	.....	.....	.....	.....	Showery.....	Corpl. C. Aitken, A. H. C.
Glasgow, Observatory	29.12	739.6	29.32	744.7	45.1	7.3	.....	NNE	.....	.....	3	.....	9	.....	.....	.....	.....	Gloomy.....	D. G. Maclean.
Great Yarmouth	29.31	744.5	29.31	744.5	43	6.1	.....	Calm	.....	.....	0	.....	8	.....	.....	.....	.....	Drizzling.....	G. T. Watson.
Greenwich, Royal Obs'y	29.14	740.1	29.31	744.5	43.8	6.6	.....	N	.....	.....	1	.....	9	.....	.....	.....	.....	Nearly o'cast	The Staff, for G. B. Airy.
Guernsey	29.13	739.9	29.35	745.5	49	9.4	.....	NW	.....	.....	4	.....	8	.....	.....	.....	.....	D. clouds.....	Dr. S. E. Hoskins, F. R. S.
Helston	.....	.....	29.44	747.8	51	10.6	.....	NW	.....	.....	4	.....	8k	.....	.....	0.32	8.1	Showery.....	M. P. Moyle.
Holyhead	29.30	744.2	29.35	745.5	47	8.3	.....	NW	.....	.....	5	.....	3	.....	.....	.....	.....	D. clouds.....	John Tilston.
Jersey	29.09	738.9	29.38	746.2	49.3	9.6	.....	N	.....	.....	5	.....	3	.....	.....	.....	.....	D. clouds.....	J. Fisher.
Kew, Observatory	.....	.....	29.31	744.5	45.3	7.4	.....	SSW	3	1.3	.....	.....	4	.....	.....	Blank	Blank	D. clouds.....	The Staff.
Kingstown	29.36	745.7	29.39	746.5	45	7.2	.....	WNW	.....	.....	6	.....	3	.....	.....	.....	.....	Thin haze....	George Mitchell.
Leicester, Museum	.....	.....	29.20	741.7	41.7	5.4	.....	SW	.....	.....	1	.....	6	.....	.....	.....	.....	D. clouds.....	Wm. J. Harrison, F. G. S.
Malta, (Mediterranean)	29.89	759.2	29.96	761.0	64.6	18.1	.....	NW	.....	.....	6	.....	10	.....	.....	.....	.....	Misty.....	Sgt. Fred. Travis, A. H.
Nairn	29.29	744.0	29.39	746.5	43	6.1	.....	NW	.....	.....	6	.....	8	.....	.....	.....	.....	D. clouds.....	W. D. Penny. [C.
Nassau, (Bahamas)	.....	.....	29.13	739.9	67.8	19.9	.....	NE	.....	.....	6	.....	10	.....	.....	.....	.....	Overcast.....	C. S. Duncombe.
Nottingham, Observatory	29.15	740.4	29.34	745.2	44.2	6.8	.....	NE	.....	.....	1	.....	10	.....	.....	.....	.....	Overcast.....	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	28.78	731.0	29.30	744.2	43.9	6.6	.....	SSW	.....	.....	1	.....	4cs	.....	SW	0.052	1.32	D. clouds.....	Rev. Stephen Whitty.
Oxford, Radcliffe Obs'y	.....	.....	29.32	744.7	42	5.6	.....	WNW	.....	.....	2	.....	0	.....	.....	.....	.....	Hazy.....	Mr. Lucas.
Plymouth	29.32	744.7	29.40	746.7	46.7	8.2	.....	WSW	.....	.....	1	.....	3	.....	.....	.....	.....	Blue sky.....	John Merrifield.
Roche's Point	29.45	748.0	29.50	749.3	48	8.9	.....	NW	.....	.....	3	.....	2	.....	.....	.....	.....	D. clouds.....	W. Kennedy.
Saint Ann's Head	29.22	742.2	29.38	746.2	48	8.9	.....	NNW	.....	.....	6	.....	10	.....	.....	.....	.....	Rain-squalls	John C. Walker.
Sandwick Manse, (Orkneys.)	.....	.....	29.46	748.3	44	6.7	.....	NW	.....	.....	4	.....	1	.....	.....	.....	.....	.....	Rev. C. Clouston, LL. D
Scutari, Cemetery, (Turkey	.....	.....	29.64	752.8	60.2	15.7	.....	NE	15	6.7	.....	.....	2	.....	.....	.....	.....	D. clouds.....	Sergt. W. H. Lyne.
Sheffield	29.08	738.6	29.36	745.7	44.3	6.8	.....	SE	.....	.....	2	.....	10	.....	.....	.....	.....	Showery.....	W. F. Cooper.
Silloth Rectory	29.24	742.7	29.27	743.4	42.4	5.8	89	WSW	.....	.....	1	.....	7	.....	.....	0.02	0.5	Misty.....	Rev. F. Redford, M. A.
Stonyhurst, Observatory	.....	.....	.....	.....	43.8	6.6	.....	SE	.....	.....	1	.....	4	.....	.....	0	0	D. clouds.....	Rev. S. J. Perry.
Stornoway, Lews C. (Hebr.)	.....	.....	29.44	747.8	43	6.1	.....	W	.....	.....	1	.....	6	.....	.....	.....	.....	Hazy.....	John Smith.
Stratfield Turgiss	29.08	738.6	29.30	744.2	41.1	5.1	.....	NE	.....	.....	1	.....	0	.....	.....	.....	.....	Blue sky.....	Rev. C. H. Griffith, F. M. S.
Thurso	.....	.....	29.43	747.5	46	7.8	.....	SW	.....	.....	1	.....	3	.....	.....	.....	.....	D. clouds.....	John Trotter.
Truro, Royal Institution	.....	.....	29.52	749.8	52	11.1	.....	ENE	.....	.....	5	.....	7	.....	.....	.....	.....	D. clouds.....	W. Newcombe.
Valencia, Observatory	.....	.....	29.61	752.1	49.5	9.7	.....	NW	.....	.....	6	.....	10	.....	.....	.....	.....	Raining.....	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)	.....	.....	.....	.....	.....	.....	.....	NW	21	9.4	.....	.....	10	.....	.....	.....	.....	Showery.....	
Cape Good Hope, Obs'y	29.79	756.7	29.83	757.7	79.0	26.1	55	WNW	14	6.3	.....	10	8	.....	.....	.....	.....	.....	Henry Mercer.
Hobart Town, (Tasmania)	.....	.....	29.42	747.3	60.0	15.6	72	NW	.....	.....	5	.....	0	.....	.....	.....	.....	.....	The Staff, for E. J. Stone.
Leith, Restalrig Park	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0	.....	Francis Abbott, F. R. A. S.
Mauritius, Observatory	29.78	756.4	29.97	761.2	81.9	27.7	72	N	9.5	4.2	.....	0	8	.....	NW	0.04	1.0	Fine; cloudy	Andrew Gibb.
Melbourne, Observatory	29.75	755.6	29.84	757.9	60.0	15.6	58	SW	15	6.7	.....	.....	10	.....	.....	0	0	Dull	C. Meldrum.
Monach L't-house, (Hebrides)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. L. J. Ellery.
North Unst, (Shetland Is.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Youngclause.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m.

Marine Series. Vessels.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea or swell. Height scale 0—9	Sea or swell. Direction from—	Weather.	Observer.
S. S. Algeria	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
S. S. Batavia, N. 49° 0', W. 28° 0'	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. W. Watson.
Ship Camperdown	.....	.....	30.11	764.8	55	12.8	.....	SSW	.....	.....	4	.....	8	.....	.....	4	WNW	Misty.....	Capt. J. E. Mouland.
Brig Catherine	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. A. T. Miller.
Barque Celeste	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. Adam Smith.
S. S. Hibernia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. D. F. McKechnie.
Barque Maroon	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. W. R. Cato.
Ship Mikado	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. A. T. Brown.
S. S. Seine	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. C. C. Prehn.
Barque Sorata	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. H. Manning.
Schooner Traveller	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. Jas. J. Price.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. Alex Simpson.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
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.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation The barometers and thermometers used by these observers have been generally carefully compared and corrected.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	BAROMETER. Corrected for instrum'tal error and temperature. Inches.	BAROMETER. Corrected for instrum'tal error and temperature. Millimeters.	BAROMETER. Reduced to sea-level. Inches.	BAROMETER. Reduced to sea-level. Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Upper. From—	CLOUDS. Direction. Lower. From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	WEATHER.	OBSERVER.
San José	26.24	666.5	.....	.....	65.3	18.5	92	NE	.....	.....	1	4ck	2sd	.....	.....	Blank	Blank	.....	Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.61	752.2	29.66	753.4	41.9	5.5	93	SE	.....	.....	2	.....	10	.....	.....	.....	.....	.....	
Fanöe	29.55	750.5	29.57	751.0	39.2	4.0	95	SE	.....	.....	4	.....	1	.....	.....	.....	.....	.....	
Godthaab, (Greenland)	28.84	732.5	28.88	733.6	16.3	— 8.7	85	Calm	.....	.....	0	.....	10	.....	.....	.....	.....	.....	
Stykkisholm, (Iceland)	29.40	746.7	29.44	747.8	36.9	2.7	90	SE	.....	.....	4	.....	8	.....	.....	.....	.....	.....	
Thorshavn, (Faröe)	29.59	751.5	29.62	752.4	40.5	4.7	86	Calm	.....	.....	0	.....	0	.....	.....	.....	.....	.....	
Vestervig	29.43	747.4	29.60	751.7	40.6	4.8	90	SSE	.....	.....	4	.....	4	.....	.....	.....	.....	.....	

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

Alençon, Normal School	28.74	730.0	29.29	744.0	48.2	9	94	SW	.....	.....	1	.....	10	.....	.....	0	0	Covered	Collignon, Director.
Amiens, Normal School	29.20	741.7	29.31	744.5	45.7	7.6	74	E	.....	.....	2	.....	10	.....	.....	0.079	2.0	Covered	Bonvarne, Director.
Avignon, Normal School	29.54	750.2	29.61	752.2	50.0	10	79	SE	.....	.....	1	.....	2	.....	SW	0.102	2.6	Partly cl'dy	Mr. Giraud, Director.
Bar-sur-Seine	28.78	732.0	29.39	746.4	44.2	6.8	81	S	.....	.....	2	.....	10	.....	S	0.291	7.4	Covered	C. Saillard.
Beaumette Obs'y (Angers)	29.14	740.1	29.30	744.1	45.7	7.6	97	NW	13.4	6.0	.....	.....	10	.....	NW	0.508	12.9	Raining	Albert Cheux.
Beauvais	29.05	737.8	29.34	745.1	44.4	6.9	83	SE	.....	.....	1	.....	10	.....	SE	0.030	0.75	Covered	Normal School.
Besançon	28.61	726.6	29.50	749.4	43.9	6.6	85	S	.....	.....	3	.....	8	.....	SW	0.16	4.	Very cloudy	Normal School.
Bourg-en-Bresse	28.60	726.3	29.46	748.2	44.8	7.1	83	S	.....	.....	6	2c	.....	S	.....	0.24	6.	Slightly cl'dy	Normal School.
Bourges, Normal School	28.85	732.8	29.40	746.7	48.9	9.4	86	SW	.....	.....	4	.....	8	.....	SW	0.295	7.5	Very cloudy	A. Wagner, Director.
Brest, Naval Observatory	29.21	741.8	29.42	747.3	49.8	9.9	66	NNW	.....	.....	4	.....	2	.....	NNW	0.581	14.75	Squally	The Staff.
Carcassonne, Normal School	29.27	743.5	29.69	754.0	59.7	15.4	83	E	.....	.....	4	.....	1	.....	NE	0.08	2.	Clear	Vateau, Director.
Caen	29.22	742.2	29.30	744.1	48.2	9	86	S	.....	.....	1	.....	10	.....	.....	0.16	4.	Covered	Normal School.
Chartres, Normal School	28.69	728.6	29.25	743.0	46.0	7.8	.....	SW	.....	.....	3	.....	10	.....	.....	0.04	1.	Covered	Leguin, Director.
Châlons-sur-Marne, N. Sch'l	29.08	738.5	29.38	746.2	45.7	7.6	75	SE	.....	.....	3	.....	10	.....	SE	0.004	0.1	Light rain	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.11	713.9	29.49	749.0	48.9	9.4	76	W	.....	.....	2	.....	8	.....	.....	0.008	0.2	Very cloudy	Alluard, Director.
Commercy, Normal School	28.54	725.0	29.43	747.5	44.2	6.8	85	SE	.....	.....	2	.....	5	.....	SE	0.12	3.	Cloudy	Dr. Goulet, Director.
Commune de Gréasque*	28.50	723.8	29.64	752.8	47.3	8.5	81	SE	.....	.....	1	.....	5	.....	SE	0	0	½ covered	M. Kina.
Grenoble	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Normal School.
La Roche-sur-Yon, N. School	29.19	741.4	29.40	746.8	49.3	9.6	95	W	.....	.....	2	.....	8	.....	E	0.724	18.4	Very cloudy	Mouillot, Director.
Le Mans, Normal School	29.00	736.6	29.31	744.4	45.3	7.4	91	W	.....	.....	2	.....	10	.....	.....	0.322	8.2	Covered	Poirrier, Director.
Lons-Le-Saulnier, N. School	28.54	724.8	29.45	748.0	43.3	6.3	82	S	.....	.....	6	.....	10	.....	NE	0.165	4.20	Rainy	Voudez, Director.
Lorient, Naval Observatory	29.34	745.3	29.45	747.9	50.4	10.2	74	NW	.....	.....	3	.....	5	.....	NW	0.169	4.3	½ Covered	T. Carré, Director.
Mâcon, Normal School	28.78	730.9	29.47	748.5	44.1	6.7	67	SW	.....	.....	2	.....	10	.....	SW	0	0	Covered	M. Marchal, Director.
Metz	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. A. Schuster, Dir.
Mirecourt	28.39	721.1	29.44	747.8	43.7	6.5	85	SSE	.....	.....	2	.....	2	.....	NNW	0	0	Slightly cl'dy	Normal School.
Nismes, Normal School	29.38	746.3	29.58	751.3	54.3	12.4	79	SW	.....	.....	1	.....	10	.....	S	0.138	3.50	Covered	Boyer, Director.
Orleans, Normal School	29.01	736.8	29.39	746.4	46.8	8.2	83	SW	.....	.....	4	.....	8	.....	SW	0.16	4.	Very cloudy	Bernard, Director.
Paris, Observatory	29.06	738.1	29.30	744.2	43.3	6.3	94	E	.....	.....	1	.....	10k	.....	SW	0.035	0.89	Foggy	National Observatory.
Privas	28.58	726.0	29.03	752.7	55.6	13.1	71	S	.....	.....	2	.....	10	.....	S	0	0	Covered	Normal School
Rochefort, Naval Obs'y	29.39	746.4	29.42	747.2	50.4	10.2	84	WSW	.....	.....	3	.....	5	.....	ENE	0.12	3.	½ Covered	Lt. Decante, Director.
Rouen, Normal School	29.22	742.1	29.30	744.3	45.9	7.8	85	SE	.....	.....	2	.....	10	.....	.....	0.106	2.7	Covered	F. Lucard, Director.
Tarbes, Normal School	28.45	722.5	29.54	750.4	50.4	10.2	98	SW	.....	.....	2	.....	5	.....	W	0.28	7.	Cloudy	T. Hugues, Director.
Villefranche	28.80	731.6	29.52	749.8	46.2	7.9	91	SE	.....	.....	6	.....	10	.....	Calm	0.142	3.6	Covered	Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.83	757.7	29.86	758.4	78.8	26	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.17	55.	.....	L'Abbé Marchési.
Marseilles, Observatory	.....	.....	29.62	752.4	51.8	11.0	71	NW	.....	.....	1	.....	2	.....	.....	0.173	4.40	.....	The Staff.
Mont-Louis	24.46	631.3	29.78	756.3	35.8	2.1	64	SSW	22.4	10.00	.....	.....	4	.....	SSW	0	0	.....	Mr. Falguère.
Nice	.....	.....	29.54	750.4	50.5	10.3	68	SW	.....	.....	4	.....	1	.....	.....	0	0	Clear	Dr. A. Niepce.
Paris, Montsouris Obs'y	29.01	736.9	29.20	743.9	43.2	6.2	94	SE	.....	.....	2	.....	10	.....	.....	0.039	1.0	Drizzling	Marié Davy, Director.
Perpignan	.....	.....	29.01	752.1	59.0	15.0	39	SW	7.4	3.33	.....	.....	0	.....	.....	0	0	.....	Dr. Fines.
Pic du Midi, (Summit,) H. P.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.08	560.9	.....	.....	23.9	— 4.5	.....	NW	.....	.....	6	.....	5	.....	.....	0.551	14.0	Snowy	Gen'l de Nansouty.
Saint Maur, (near Paris)	29.13	740.0	29.30	744.2	43.3	6.3	95	SE	.....	.....	1	.....	10	.....	SSE	0.091	2.3	Raining	E. Renou.
Toulouse, Observatory	28.80	733.9	29.61	752.0	49.5	9.7	68	WNW	.....	.....	4	.....	9	.....	.....	0.035	0.90	.....	The Staff.
Tours	29.12	739.6	29.32	744.6	49.3	9.6	74	SW	.....	.....	4	.....	10	.....	W	0.267	7.8	.....	C. Marquet.
Versailles, (near Paris)	.....	.....	29.33	744.9	43.5	6.4	97	S	.....	.....	3	.....	10	.....	.....	0.078	1.98	Light rain	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.26	768.6	30.28	769.2	35.8	2.1	96	NW	4.0	1.8	.....	.....	1k	.....	.....	0	0	Clear	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; for Montsouris, the barometer reduced to freezing but not to sea-level. At Mirecourt and Rochefort the cloud directions are apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time.

* Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg																			
Berlin	29.45	748.0	29.62	752.3	43.2	6.2	85	S			1		10			0.111	2.82	Raining	Prof. Dr. Hoh.
Breslau	29.06	738.0	29.58	751.3	40.6	4.8	100	N			2		10			0.056	1.42	Rain & fog	Prof. Arndt.
Carlsruhe	29.06	738.2	29.48	748.9	48.2	9.0	65	ESE			1		2						Royal University Obs'y.
Cassel	29.05	737.8	29.64	752.9	44.6	7.0	79	S			0		7	S		0	0		Albert Senz.
Crefeld	29.28	743.8	29.44	747.8	46.9	8.3	75	SE			4		10			0	0		Dr. H. Möhl.
Emden	29.51	749.6	29.55	750.5	42.8	6.0	87	SE			2		0			0	0		Director Lose.
Frankfort on the Main	29.18	741.2	29.55	750.5	46.4	8		ESE			1		4			0	0		Prof. Prestel.
Friedrichshafen	28.12	714.2	29.56	750.8	44.1	6.7	64	ESE			5		3	SSE		0.024	0.6		Physical Society.
Hamburg	29.72	754.8	29.79	756.6	38.7	3.7	92	SE			2		0			0	0		M. Wilhelm.
Kiel	29.58	751.2	29.59	751.6	39.7	4.3	87	SE			2		0			0.008	0.2	Fine	Captain F. Hegemann.
Königsberg, (Prussia)	29.67	753.6	29.75	755.6	41.9	5.5	92	SE			2		2			0	0		Prof. G. Karsten.
Köslin			29.63	752.7	40.3	4.6		SE			2		4			0.001	0.02	Cloudy	Prof. E. Luther.
Leipsic, Observatory	29.20	741.7	29.63	752.6	39.9	4.4	93	SE			1		10			0.039	1.0		H. Müller.
Memel, Naval School	29.76	756.0	29.81	757.2	42.8	6.0	91	SE			2		10ks			0.094	2.4		Prof. Bruhns.
Neufahrwasser	29.71	754.7	29.73	755.1	41.2	5.1	88	Calm			0		10	SE					Reinbrecht von Skalweit.
Posen	29.34	745.2	29.64	752 8	40.8	4.9	96	NNW			2		10			0	0		A. Lothes.
Strassburg Obs., (in Alsace	28.96	735.5	29.51	749 5	46.8	8.2	74	S			1		8	SW		0	0	Covered	Dr. Magener.
Stuttgart	28.56	725.4	29.50	749.4	43.2	6.2	79	W			1		0			0.015	0.38		Dr. Schur.
Treves, (Trier)	28.85	732.7	29.36	745.7	47.1	8.4	70	SE					6			0	0		Prof. Schoder.
Weissenburg, (Bavaria)	28.05	712.5	29.56	750.9	42.1	5.6	79	W	1	0.5	5		6c	SE		0.031	0.79	Foggy	Prof. Flesch.
Wustrow, Naval School	29.65	753.1	29.68	753.9	38.5	3.6	98	ESE			3		10			0	0		Dr. Von Bebber.
German Naval Series.																0.184	4.68	Foggy	E. F. Schütz.

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet: Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4. Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines, Königsberg, Posen and Wustrow in cubic zolls. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.40	746.8	29.80	756.8	63.5	17.5		SW			5							Clear	Dr. J. F. J. Schmidt.

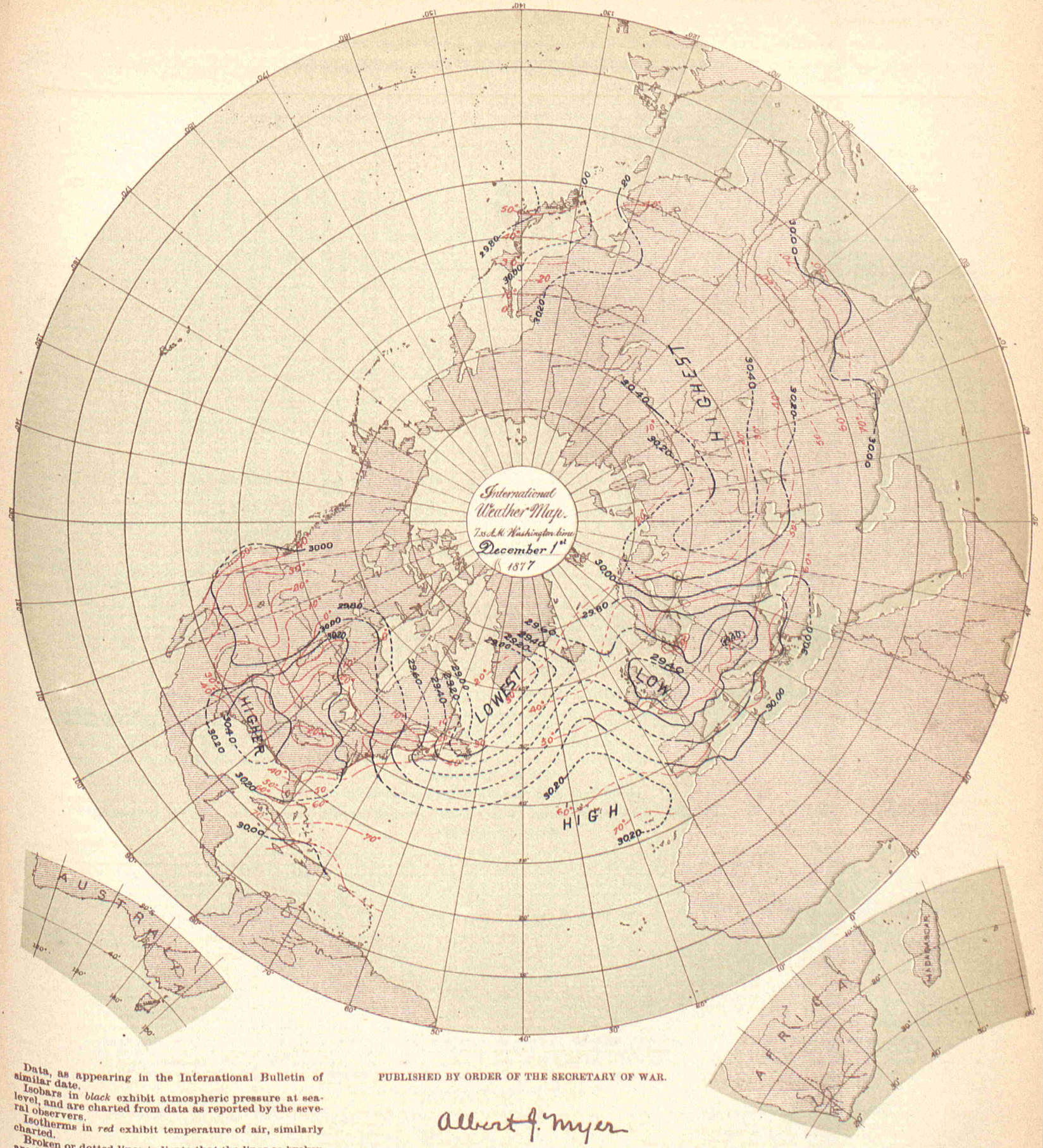
Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and wind-force; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.96	760.9	30.01	762.2	75.0	23.9	81	WSW	15.0?	6.7?		0				0	0	Blue sky	
Deesa	29.51	749.6	30.00	761.9	77.4	25.2	46	Calm				2	W			0	0	D. clouds	
Bombay	29.89	759.1	29.92	760.0	79.6	26.4	68	NNW	12.0	5.4		4	SSW			0	0	D. clouds	
Poona	27.90	708.8	29.91	759.7	78.6	25.9	54	SW				7	W			0	0	D. clouds	
Lahore	29.25	742.9	30.03	762.7	57.6	14.2	70	Calm	0.7	0.3		0				0	0	Blue sky	
Belgaum	27.39	695.7	29.93	760.2	76.9	24.9	69	W	8.0	3.6		1				0	0	D. clouds	
Bangalore																			
Roorkee	29.05	737.2	29.98	761.6	64.8	18.2	53	NW	1.2	0.5						0	0		
Agra	29.42	747.3	30.01	762.2	64.8	18.2	51	N								0	0		
Trichinopoly																			
Nagpur	28.91	734.3	29.97	761.3	72.6	22.6	81	NE	3.5	1.6		6		E		0.14	3.6	Gloomy	
Madras																			
Lucknow	29.64	752.8	30.02	762.6	68.6	20.3	79	Calm	1.0	0.4		0				0	0	Blue sky	
Allahabad	29.68	753.8	30.00	762.0	64.2	17.9	53	Calm	0.8	0.4		0				0	0	Blue sky	
Patna	29.83	757.8	30.02	762.5	68.9	20.5	42	W	1.1	0.5		2	W	W		0	0		
Hazaribagh	27.96	710.1	30.03	762.6	66.0	18.9	41	N	3.2	1.4		1				0	0	Blue sky	
Cuttack	29.97	761.2	30.05	763.3	79.8	26.6	58	S	0.6	0.3		0				0	0	Blue sky	
Calcutta (Alipore)	29.98	761.5	30.00	762.0	74.9	23.8	68	NNW	3.0	1.3		0				0	0	Blue sky	
Goalpara	29.62	752.3	30.02	762.5	69.1	20.6	91	N	0.6	0.3		0				0	0	Blue sky	
Chittagong	29.88	759.2	29.98	761.4	73.6	23.1	83	Calm				0				0	0	Blue sky	
Sibsagar	29.73	755.2	30.08	764.1	61.7	16.5	89	ENE	1.4	0.6		0				0	0	Blue sky	
Rangoon												4				0	0	Blue sky	
Jubbulpore	28.60	726.5	29.99	761.7	74.5	23.6	64	NE	2.9	1.3		0				0	0	Blue sky	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.: Nagpur, 1,026 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 1—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	21.68	550.7	29.54	750.4	23.0	— 5.0	73	N			1		8	WNW		0	0		Ab. Dom. Morgini.
Stelvio	21.67	550.5	29.63	752.6	15.6	— 9.1		SSW			1		0			0.217	5.5		Signora Ernesta Manfredi.
Udine	29.12	739.6	29.53	750 0	49.8	9.9	71	SW	0.7	0 3			5			0.322	8.2		Prof. Giovanni Clodig.
Padua	29.41	747.1	29.52	749.9	44.4	6.9	97	SE	3.8	1.7			10			0.055	1.4		Prof. Dott. Lorenzoni.
Vicenza	29.34	745.2	29.54	750.2	45.3	7.4	97	SE	4.9	2.2			10			0	0		Conte Alm. Da Schio.
Verona	29.36	745.7	29.59	751.5	46.4	8.0	84	E	0	0			10			0	0		Dott. B. Bertoncelli.
Bergamo	28.22	716.7	29.57	751.0	47.1	8.4	57	SE			2		3			0	0		Prof. Trionfini Carlo.
Domodossola	28.51	724.1	29.56	750.9	45.0	7.2	72						0			0	0		Prof. Giuseppe Calza.
Milan	29.01	736.9	29.54	750.3	47.1	8.4		ENE			2		3	NNW		0	0		Ab. Gio. Capelli.
Pavia	29.18	741.1	29.53	750.1	46.2	7.9	68	NE			2		2			0	0		Prof. Gio. Cantoni.
Moncalieri	28.64	727.4	29.57	751.0	39.6	4.2	87	ENE	0.7	0.3			5	SW		0	0		Prof. P. F. Denza.
Mondovi	27.61	701.3	29.57	751.0	43.3	6.3	82?	NNE			2		7	SW		0	0		Prof. D. C. Bruno.
Porto Maurizio	29.30	744.8	29.52	749.9	54.9	12.7	59	WSW	2.5	1.1			8			0	0		Prof. L. Vassallo.
Genoa	29.36	745.7	29.53	750.1	55.4	13.0	53	SE	7.4	3.3			6	S		0	0		Prof. G. M. Garibaldi.
Piacenza	29.27	743.4	29.52	749.9	46.4	8.0	70	N	0	0			1			0	0		Dott. G. Manzi.
Parma	29.27	743.5	29.60	751.7	49.3	9.6	70	ESE			2		1			0	0		Prof. P. Pigorini.
Florence	29.36	745.7	29.62	752.3	50.9	10.5	87	NW			2		2			0.142	3.6		Cav. F. Meucci.
Leghorn	29.52	749.7	29.60	751.9	56.1	13.4	71	SW	19.2	8.6			9	W		1.228	31.2		Prof. P. Monte.
Siena	28 42	721.9	29.65	753.0	50.9	10.5	75	SW	8.7	3.9			8	SW		0.012	0.3		Prof. L. Toscani.
Urbino	28.07	713.0	29.65	753.1	49.1	9.5	72	SW			2		6			0	0		Prof. P. Serpieri.
Pesaro	29.54	750.4	29.60	751 7	53.4	11.9	68	SW	32.2	14.4			8	SW		0	0		Prof. Luigi Guidi.
Ancona	29.53	750.0	29.64	752.8	53.6	12.0	67	SW			4		3			0.008	0.2		Prof. F. DeBosis.
Grosseto	29.53	750.0	29.64	752.9	57.9	14.4	66	SSE			2		4	S		0.138	3.5		Avv. P. Ponticelli.
Rome	29.54	750.3	29.72	754.8	54.9	12.7	73	S	0	0			10			0.220	5.6		Prof. P. A Secchi.
Naples, O. U	29.57	751.0	29.77	756.1	56.8	13.8	71	W			4		10	WSW		0.236	6.0		Prof. L. Palmieri.
Lecce	29.54	750.4	29.80	756.8	59.4	15.2	61	WNW	13.7	6.1			3			1.024	26.0		Prof. C. De Giorgi.
Cosenza	28.96	735.5	29.85	758.3	55.4	13.0	73	NW	0.7	0.3			8			0.083	2.1		Prof. F. D. Conti.
Cagliari	29.56	750.8	29.75	755.7	59.5	15.3	61	W			2		8	NW		0.118	3.0		Prof. A. Paolnotti.
Riposto, (Sicily)	29.83	757.7	29.88	758.9	62.1	16.7	47	NE			2		6	SE		0	0		Prof. F. Caflero.
Palermo	29.57	751.0	29.82	757.5	58.3	14.6	56	WSW	15.0	6.7			9	WSW		0.579	14.7		Prof. G. Cacciatore.
Caltanissetta	27.92	709.2	29.88	759.0	51.8	11.0	74	W			6		6	E		0.079	2.0		Prof. A. Pagani.
Syracuse	29.77	756.1	29.84	758.0	61.7	16.5	43	WNW			4		4	W		0	0		Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.25	742.9	29.80	757.0	55.9	13.3	58	W	12.5	5.6			8			0.808	20.4		Prof. F. Brioschi.

Note.—The originals give the wind-force on the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,543.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Siena, 348.5 m., or 1,143.3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta. 570.3 m., or 1,871.0 ft

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Tokei (Yeddo)																			The Observatory.
Tokei (Yeddo) University	29.76	755.9	29.86	758.4	49	9.4	93	N	12	5.4			10n			2.4	61.	Stormy	Prof P. V. Veeder.

MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Señor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Aguascalientes																			I. N. Marin, M. D.
Córdoba																			C. Peña, M. D.
Cuernavaca																			L. Castillo, A. E.
Guadalajara																			Prof. L. Perez.
Guanajuato																			Prof. V. Fernandez.
Leon																			Prof. M. Leal.
Mexico	23.12	587.2	30.24	768.1	54.0	12.2	82	Calm	0	0		0	7ks		W	0.13	3.3	Cloudy	Central Observatory.
Orizaba																			N. N.
Orizaba																			I. Orozco, M. D.
Pabellon, (Aguascalts)																			M. V. de Leon, M. E.
Puebla																			Prof. B. Gonzalez.
Toluca																			Prof. C. Velazquez.
Tlacotalpam																			Prof. F. R. Bayly.
San Luis Potosi																			G. Barroeta, M. D.
Vera-Cruz																			Prof. J. Rossell.
Zacatecas																			J. A. Bonilla, M. E.
Puebla, (Catholic Institute)																			P. Spina. [M. M. D. D.
Morelia																			M. Tena, F. L. Páramo

Note.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,293 m., or 7,512.9 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabell m, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m,, or 8,611.8 ft.; San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	29.37	746.1	29.37	746.1	45.7	7.6		SE			3					0.004	0.1		
Groningen	29.43	747.5	29.43	748.9	43.5	6.4		S			2					0	0		
Helder	29.39	746.5	29.39	746.5	43.7	6.5		SSE			2					0	0		
Hellevoetsluis			29.38	746.2	46.4	8.0	86	SE			3								
Utrecht	29.38	746.2	29.43	747.4	45.9	7.7	77	SSE			2		2			0	0	Light cloudy	H. v d Brink.

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	29.45	747.9	29.50	749.3	45.3	7.4	61	Calm	0	0	.....	.....	4	.....	.....	0	0	.....	
Brönö	29.73	755.2	29.77	756.2	40.6	4.8	48	SSE	25	11	.....	.....	10	.....	.....	0	0	.....	
Christiania	29.56	750.7	29.71	754.5	37.0	2.8	93	ENE	7	3	.....	.....	10	.....	.....	1.095	27.8	.....	
Tromsö	30.11	764.8	30.15	765.9	20.5	— 6.4	79	W	4	2	.....	.....	0	.....	.....	0	0	.....	

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	30.13	765.3	30.32	770.2	59.4	15.2	80	E	11.9	5.3	.....	.....	6	.....	.....	0	0	.....	Dr. J. A. Sampaio.
Campo Major	28.93	734.7	29.97	761.1	53.8	12.1	90	SW	16.1	7.2	.....	.....	10	WNW	.....	.....	.....	Light rain...	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.15	765.8	30.22	767.6	70.0	21.1	53	ESE	3.1	1.4	.....	.....	0	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.69	754.0	30.05	763.2	59.4	15.2	75	WNW	17.4	7.8	.....	.....	8	.....	.....	0.059	1.5	.....	The Staff.
Ponta Delgada, (Azores)	30.27	768.8	30.34	770.6	64.4	18.0	65	ESE	6.9	3.1	.....	.....	4	.....	.....	0	0	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

Naval Series. Vessels.	Sea or swell. Height scale 0–9	Sea or swell. Direction from—		
S. S. Bartholomew Dias.	.....	.....	.....	R. A. T. Pinha, Com'd't.
S. S. India.	.....	.....	.....	A. D. Pedroso, Com'd't.
S. S. Mindello.	.....	.....	.....	J. F. R. R. Bastos, Com'd't.
S. S. Sado.	.....	.....	.....	A. N. P. Sampaio, Com'd't.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.24	742.6	29.67	753.5	41.4	5.2	90	ESE	16	7	.....	.....	10ks	.....	.....	.....	.....	.....	Astronomical Obs.
Wilna	29.47	748.5	29.90	759.4	41.4	5.2	95	ESE	2	1	.....	.....	10	.....	.....	.....	.....	Raining.....	Astronomical Obs.
Dorpat	29.84	757.8	30.09	764.3	33.3	0.7	94	ESE	11	5	.....	.....	10n	.....	.....	.....	.....	.....	Prof. Dr. Weihrauch.
St. Petersburg	30.20	767.0	30.21	767.4	35.4	1.9	91	SE	13	6	.....	.....	10n	.....	.....	.....	.....	.....	Central Physical Obs.
Kuopio	29.84	758.0	30.17	766.4	36.1	2.3	100	ESE	13	6	.....	.....	10	.....	.....	Blank	Blank	.....	Ch. Forsten.
Kieff	29.25	742.9	29.90	759.4	41.7	5.4	99	SE	11	5	.....	.....	10n	.....	.....	.....	.....	Light fog.....	Physical Cabinet.
Nikolaiev	29.85	758.2	29.92	760.0	45.3	7.4	93	ENE	13	6	.....	.....	10n	.....	.....	.....	.....	.....	Kurdakof.
Kertch	30.01	762.2	30.03	762.7	48.9	9.4	96	E	9	4	.....	.....	9	.....	.....	.....	.....	.....	Lagorio.
Moscow	29.75	755.7	30.33	770.4	29.8	— 1.2	92	SE	6	4	.....	.....	10s	.....	.....	.....	.....	.....	Meteorological Obs.
Lugan	29.95	760.7	30.16	766.0	37.0	2.8	86	E	13	6	.....	.....	9s	.....	.....	.....	.....	.....	Meteorological Obs.
Archangel	30.35	771.0	30.37	771.5	26.2	— 3.2	96	Calm	0	0	.....	.....	10	.....	.....	.....	.....	.....	Ogorodnikof.
Tiflis	28.73	729.8	30.17	766.4	50.7	10.4	73	Calm	0	0	.....	.....	2ck	.....	.....	.....	.....	.....	Physical Observatory.
Astrakhan	30.32	770.0	30.23	767.9	34.5	1.4	51	NNW	2	1	.....	.....	0	.....	.....	.....	.....	.....	Sebastianof.
Kasan	30.12	765.0	30.41	772.4	21.2	— 6.0	87	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Physical Cabinet.
Orenburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Tschernischef.
Ekaterinburg	29.37	746.0	30.39	771.8	20.7	— 6.3	69	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Meteorological Obs.
Nukuss	29.93	760.2	30.17	766.4	35.2	1.8	96	N	0	0	.....	.....	10n	.....	.....	.....	.....	.....	
Kasaly	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Bobro'.
Tashkend	28.62	724.5	30.28	769.2	43.9	6.6	88	Calm	0	0	.....	.....	10n	.....	.....	.....	.....	.....	Michelson.
Barnaul	29.89	759.3	30.48	774.2	4.2	—15.1	91	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Meteorological Obs.
Yeniseisk	30.08	763.9	30.43	772.9	3.9	—15.6	91	E	2	1	.....	.....	2	.....	.....	.....	.....	.....	Marks.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Usolzef.
Oorga	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Mossin.
Krotkowo	29.84	757.9	30.34	770.6	23.9	— 4.5	74	NW	2	1	.....	.....	0	.....	.....	.....	.....	.....	Cand. Fatjanow.
Peking, (China)	30.00	762.1	30.15	765.7	32.7	0.4	57	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Physical Observatory.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Vladivostock	30.11	764.9	30.15	765.9	32.0	0.0	92	NW	4	2	.....	.....	2n	.....	.....	.....	.....	.....	
Nikolaievsk, on the Amoor	.....	.....	.....	.....	— 4.0	—20.0	86	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Viennasymbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Rave, Director.
Bilbao, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Manuel de Naveran
Burgos, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Domingo Martin y Perez.
Madrid, Royal Observatory	27.55	699.8	29.81	757.1	46.6	8.1	86	W	14.2	6.33	.....	0	10	.....	.....	0.067	1.7	Covered	The Staff.
Murcia, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Olayo Diaz, Director.
Santiago, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	30.13	765.3	30.20	767.0	64.7	18.2	67	N	10.1	4.5	.....	.....	10n	.....	.....	0	0	Cloudy.....	Benito Vines, S. J.
San Fernando, Naval Obs'y.	30.00	761.9	30.10	764.4	60.3	15.7	81	WSW	9.9	4.4	.....	0	9	.....	W	0.235	6.0	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.	.....	.....	29.95	760.6	78.1	25.6	87	S	0	0	.....	2s	2k	Calm	Calm	0.079	2.00	Clear.....	Leonardo de Tejeda, Chief of Engineers.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the cöoperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	30.16	766.1	30.20	767.1	31.3	— 0.4	.....	SW	.....	.....	2	.....	10	.....	.....	0	0	.....	
Umea	29.99	761.8	30.04	763.1	35.6	2.0	93	SE	.....	.....	2	.....	10	.....	.....	0.075	1.9	.....	
Hernosand	29.91	759.7	29.96	761.0	37.0	2.8	96	ESE	.....	.....	6	.....	10	.....	.....	0.138	3.5	.....	
Stockholm	29.60	751.9	29.78	756.4	41.4	5.2	90	SE	.....	.....	2	.....	10	.....	.....	0.004	0.1	.....	
Wisby	29.70	754.3	29.76	755.8	41.4	5.2	94	SSE	.....	.....	4	.....	10	.....	.....	0.098	2.5	Raining.	
Sub-Series.																			
Upsala	29.72	755.0	29.80	756.9	39.6	4.2	96	ESE	6.0	2.7	.....	.....	10	.....	.....	0.031	0.78	.....	Dr. Hildebrandsson.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.13	714.6	29.60	751.9	38.5	3.6	90	W	.....	.....	2	.....	10	.....	.....	0.031	0.8	Raining	The Observatory.
Zurich	27.90	708.7	29.58	751.3	42.1	5.6	63	SE	.....	.....	1	.....	2	.....	.....	0	0	Clear	The Observatory.
.....																			
.....																			
.....																			

Note.—For Geneva the corresponding departures from the normal values are: Barometer, —12.4 mm; Thermometer, —0.5 cent.; Relative Humidity, +11 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	29.70	754.4	61.0	16.1	66	SE	11	5.0	.....	.....	10	.....	SW	0.543	13.8	.....	The Observatory.
Fao, (Persian Gulf)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salonica	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	B. Stéfanidès.
Valona	.....	.....	29.80	756.8	59.4	15.2	.....	SW	.....	.....	3	.....	8	.....	.....	1.69	43.	Raining	A. Bertrand.
Varna	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Imperial Observatory.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	30.00	762.0	30.12	765.0	69.1	20.6	65	N	.....	.....	1	.....	3c	.....	.....	0.10	2.5	D. clouds	Prof. C. V. A. Van Dyck

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	29.65	753.1	29.72	754.9	12.6	—10.8	75	NW	8.5	3.8	.....	3	.....	.....	.....	.....	.....	.....	Hon. J. Ferguson.
Brockville, Ontario	29.74	755.4	30.07	763.8	22	— 5.6	.....	Calm	0	0	.....	.....	8s	.....	N	0.10	2.5	Cloudy	W. R. Bigg.
*Chatham, N. B	29.57	751.1	29.64	752.8	17	— 8.3	78	NW	12	5.4	.....	8ck	2ks	NW	NW	0	0	Fair	G. A. Blair.
Charlottetown, P. E. Island.	29.51	749.5	29.56	750.6	28	— 2.2	77	W	5	2.2	.....	.....	8ks	.....	Calm	0	0	Light snow	H. J. Cundall, C. E.
Cornwall, Ontario	29.77	756.1	29.98	761.5	17.7	— 7.9	92	NW	.....	.....	2	0	0	.....	.....	0	0	Clear	James Smith, M. A.
Dalhousie, N. B	29.86	758.4	29.89	759.2	9.2	—12.7	96	W	.....	.....	2	.....	.....	.....	.....	0	0	Threatening	H. A. Johnson.
Esquimault, B. C	29.96	761.0	30.01	762.2	41.1	5.1	90	N	.....	.....	.....	.....	10	.....	.....	0	0	Cloudy	W. H. Bevis.
*Father Point, Quebec	29.72	754.9	29.74	755.4	8	—13.3	83	N	3.5	1.6	.....	2k	8s	N	N	0.01	0.3	Fair	J. McWilliams.
Fredericton, N. B	29.68	753.9	29.75	755.6	20.7	— 6.3	63	W	8.0	3.6	.....	5cs	0	NW	.....	0	0	Fair	Prof. Harrison.
*Fort Garry, Manitoba	29.30	744.2	30.22	767.6	2	—16.7	92	S	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Goderich, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	H. J. Strang, M. A.
Granton, Ontario	28.93	734.8	30.11	764.8	21.3	— 5.9	96	N	.....	.....	1	.....	10n	.....	.....	0.60	15.2	Cloudy	James Grant.
*Halifax, N. S	29.44	747.8	29.58	751.3	31	— 0.6	89	W	7	3.1	.....	.....	10ks	.....	NW	0	0	Cloudy	F. Allison, M. A.
Hamilton, Ontario	29.70	754.4	30.09	764.3	26.1	— 3.3	81	SW	.....	.....	1	8cs	.....	SW	.....	0	0	Cloudy	Geo. Dickson, M. A
Heart's Content, N. F	30.16	766.1	30.19	766.8	35	1.7	80	SW	.....	.....	4	.....	10	.....	.....	1.16	29.5	Overcast	E. Weedon.
*Kingston, Ontario	29.70	754.4	30.05	763.3	25	— 3.9	91	NE	4	1.8	.....	.....	10ks	.....	NW	0.01	0.3	Cloudy	S. Woods, M. A.
Little Glace Bay, N. S	29.39	746.5	29.43	747.5	33.0	0.6	98	NW	6	2.7	.....	7k	.....	NW	.....	Inap.	Inap.	Snow squalls	C. H. Rigby.
*Montreal, Quebec	29.77	756.1	29.98	761.5	18	— 7.8	69	N	8	3.6	.....	0	0	.....	.....	0.02	0.5	Clear	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.40	746.7	30.15	765.8	14	—10.0	63	NE	.....	.....	.....	2cs	0	SE	.....	0	0	Fair	Rev. R. Mosley.
Peterboro, Ontario	29.28	743.7	30.07	763.8	24.3	— 4.3	85	E	.....	.....	1	.....	10s	.....	.....	0	0	Dull	J. F. Jeffers, B. A.
Port Dover, Ontario	29.36	745.7	30.09	764.3	26	— 3.3	88	NW	6	2.7	.....	10k	0	NW	.....	0	0	Cloudy	H. Morgan.
Port Hastings, N. S	29.43	747.5	29.48	748.8	40.6	4.8	.....	W	6	2.7	.....	.....	.....	.....	.....	0	0	Fine	Peter Grant.
Port Stanley, Ontario	29.42	747.3	30.11	764.8	25	— 3.9	86	W	10	4.5	.....	.....	10n	.....	W	Inap.	Inap.	Cloudy	M. Payne.
*Quebec, Quebec	29.58	751.3	29.93	760.2	13	—10.6	81	NW	12	5.4	.....	0	0	.....	.....	0	0	Clear	Capt. Ashe, R. N
*Rockliffe, Ontario	29.65	753.1	30.15	765 8	13	—10.6	81	NW	6	2.7	.....	0	0	.....	.....	Inap.	Inap.	Clear	W. H. McIntyre.
St. John, N. B	29.55	750.6	29.72	754.9	24	— 4.4	87	NW	4	1.8	.....	7k	0	.....	.....	0	0	Fair	G. Murdock, C. E.
*Saugeen, Ontario	29.37	746.0	30.12	765.0	22	— 5.6	93	NE	4	1.8	.....	.....	10ks	.....	.....	0.16	4.1	Cloudy	K. Stewart.
Stayner, Ontario	29.27	743.4	30.10	764.5	20	— 6.7	84	Calm	0	0	.....	.....	10n	.....	W	0.46	11.7	Threatening	R. J. Cole.
Stratford, Ontario	28.73	729.7	30.10	764.5	18.0	— 7.8	94	Calm	0	0	.....	.....	10s	.....	.....	0.03	0.8	Cloudy	C. J. MacGregor, M. A.
*Sydney, C. B	29.40	746.7	29.43	747.5	34	1.1	87	W	8	3.6	.....	2k	8ks	.....	NW	Inap.	Inap.	Light snow	T. C. Hill.
*Toronto, Ontario	29.68	753.9	30.09	764.3	29	— 1.7	86	NW	5	2.2	.....	.....	10ks	.....	NW	Inap.	Inap.	Cloudy	Magnetic Observatory.
Windsor, N. S	29.56	750.8	29.65	753.1	31.6	— 0.2	95	W	6	2.7	.....	.....	9k	.....	.....	0	0	Fair	Prof. John E. Oram.
Woodstock, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Montgomery.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	34.0	1.1	100	SW	.....	.....	.....	.....	10n	.....	.....	0.98	24.9	Threatening	John Delany.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

By authority of the SECRETARY OF WAR. UNITED STATES SERIES.

Furnished by the cooperation of Byt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.68	753.9	29.92	760.0	30	— 1.1	79	W	14	6.3	.....	0	8ks	.....	W	0	0	Fair	
Alpena, Michigan	29.47	748.5	30.16	766.1	22	— 5.6	72	NW	10	4.5	.....	.....	10s	.....	NW	0.09	2.3	Cloudy	
Atlantic City, New Jersey	30.08	764.0	30.10	764.5	22	— 5.6	85	W	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Augusta, Georgia	30.09	764.3	30.29	769.4	26	— 3.3	94	Calm	0	0	.....	0	Sm'e	.....	Calm	0	0	Smoky	
Baltimore, Maryland	30.11	764.8	30.17	766.3	26	— 3.3	64	W	5	2.2	.....	0	2s	.....	Calm	0	0	Fair	
Barnegat, New Jersey	30.05	763.3	30.07	763.8	24	— 4.4	87	NW	16	7.2	.....	0	Haze	.....	Calm	0	0	Clear	
Bismarck, Dakota	28.13	714.5	29.96	761.0	4	—15.6	73	W	6	2.7	.....	0	1s	.....	Calm	0	0	Clear	
Boise City, Idaho	27.11	688.6	29.85	758.2	25	— 3.9	81	E	1	0.4	.....	0	5s	.....	Calm	0	0	Fair	
Boston, Massachusetts	29.71	754.6	29.87	758.7	31	— 0.6	58	NW	12	5.4	.....	2ck;cs	0	NW	.....	Inap.	Inap.	Clear	
Brackettville, Texas	29.16	740.7	30.24	768.1	30	— 1.1	48	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Breckenridge, Minnesota	29.16	740.7	30.29	769.4	0	—17.8	85	SE	6	2.7	.....	0	2s	.....	Calm	0.01	0.3	Fair	
Brownsville, Texas	30.27	768.8	30.34	770.6	44	6.7	60	N	6	2.7	.....	.....	10s	.....	Calm	0	0	Cloudy	
Buffalo, New York	29.30	744.2	30.04	763.0	26	— 3.3	76	W	3	1.3	.....	.....	10s	.....	W	0.05	1.3	Cloudy	
Burlington, Vermont	29.67	753.6	29.95	760.7	25	— 3.9	88	N	16	7.2	.....	.....	10s	.....	NW	Inap.	Inap.	Cloudy	
Cairo, Illinois	29.96	761.0	30.39	771.9	23	— 5.0	73	N	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Camp Grant, Arizona	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Camp Verde, Arizona	26.84	681.7	30.33	770.4	23	— 5.0	60	Calm	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Campo, California	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Cape Hatteras, N. Carolina	30.14	765.5	30.15	765.8	31	— 0.6	60	NW	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Cape Henry, Virginia	30.13	765.3	30.16	766.1	29	— 1.7	78	NW	16	7.2	.....	0	2s	.....	NW	0	0	Fair	
Cape Lookout, N. Carolina	30.23	767.8	30.24	768.1	30	— 1.1	68	NW	14	6.3	.....	0	0	.....	.....	0	0	Clear	
Cape May, New Jersey	30.09	764.3	30.12	765.0	27	— 2.8	67	NW	24	10.7	.....	2k	0	W	.....	0	0	Fair	
Charleston, South Carolina	30.22	767.6	30.30	769.6	34	1.1	69	W	4	1.8	.....	0	Sm'e	.....	Calm	0	0	Clear	
Cheyenne, Wyoming	29.92	607.6	29.86	758.4	25	— 3.9	75	W	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Chicago, Illinois	29.49	749.0	30.22	767.6	27	— 2.8	76	NW	6	2.7	.....	8k	0	W	.....	Inap.	Inap.	Fair	
Cincinnati, Ohio	29.57	751.1	30.20	768.6	26	— 3.3	63	W	5	2.2	.....	.....	10n	.....	W	0.01	0.3	Light snow	
Cleveland, Ohio	29.43	747.5	30.20	767.1	24	— 4.4	87	SSW	16	7.2	.....	.....	10n	.....	S	0.21	5.3	Light snow	
Concho, Texas	28.29	718.6	30.11	764.8	20	— 6.7	28	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Corsicana, Texas	29.94	760.5	30.46	773.7	23	— 5.0	73	N	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Davenport, Iowa	29.64	752.8	30.33	770.4	22	— 5.6	86	W	1	0.4	.....	.....	10n	.....	Calm	Inap.	Inap.	Light snow	
Denison, Texas	29.55	750.6	30.43	772.9	25	— 3.9	75	S	7	3.1	.....	0	0	.....	.....	0	0	Clear	
Denver, Colorado	24.73	628.1	29.95	760.7	21	— 6.1	71	S	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Detroit, Michigan	29.44	747.8	30.15	765.8	26	— 3.3	76	NW	4	1.8	.....	.....	10s	.....	NW	0.05	1.3	Cloudy	
Dodge City, Kansas	27.50	698.5	30.01	762.2	12	—11.1	61	Calm	0	0	.....	0	Haze	.....	Calm	0	0	Clear	
Dubuque, Iowa	29.55	750.6	30.30	769.6	24	— 4.4	87	NW	1	0.4	.....	.....	10s	.....	Calm	0	0	Cloudy	
Duluth, Minnesota	29.53	750.0	30.27	768.8	17	— 8.3	83	NW	6	2.7	.....	.....	10s	.....	NW	Inap.	Inap.	Cloudy	
Eagle Pass, Texas	29.56	750.8	30.38	771.6	24	— 4.4	74	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Eastport, Maine	29.61	752.1	29.68	753.9	27	— 2.8	66	NW	16	7.2	.....	.....	10s	.....	NW	Inap.	Inap.	Cloudy	
Erie, Pennsylvania	29.32	744.7	30.07	763.8	31	— 0.6	89	NW	20	8.9	.....	.....	10ks	.....	NW	0.28	7.1	Cloudy	
Escanaba, Michigan	29.54	750.3	30.24	768.1	21	— 6.1	85	W	6	2.7	.....	.....	10s	.....	W	0.04	1.0	Cloudy	
Florence, Arizona	28.48	723.4	30.08	764.0	55	12.8	12	E	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Fort Bayard, New Mexico	24.07	611.4	30.07	763.8	25	— 3.9	38	NW	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Fort Craig, New Mexico	25.69	652.5	.....	.....	15	— 9.4	47	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Fort Gibson, Indian Ter	29.79	756.7	30.39	771.9	15	— 9.4	82	SE	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Fort Griffin, Texas	29.01	736.8	30.38	771.6	24	— 4.4	74	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	29.05	737.9	30.27	768.8	20	— 6.7	55	SW	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Galveston, Texas	30.39	771.9	30.44	773.2	35	1.7	61	NE	10	4.5	.....	8ck	0	W	.....	0	0	Cloudy	
Grand Haven, Michigan	29.49	749.0	30.18	766.6	25	— 3.9	87	SE	3	1.3	.....	5k	2s	Calm	Calm	0.07	1.8	Fair	
Indianapolis, Indiana	29.44	747.8	30.27	768.8	24	— 4.4	74	W	2	0.9	.....	.....	10n	.....	W	0.01	0.3	Light snow	
Indianola, Texas	30.42	772.7	30.44	773.2	39	3.9	46	NE	16	7.2	.....	.....	10s	.....	W	0	0	Cloudy	
Jacksboro, Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Jacksonville, Florida	30.29	769.4	30.32	770.1	32	0.0	60	NW	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Keokuk, Iowa	29.64	752.8	30.31	769.9	23	— 5.0	72	NW	4	1.8	.....	.....	10s	.....	Calm	Inap.	Inap.	Cloudy	
Key West, Florida	30.19	766.8	30.22	767.6	67.0	13.9	55	N	15	6.7	.....	8cs	2s	SW	Calm	0	0	Cloudy	
Kityhawk, North Carolina	30.18	766.6	30.21	767.3	27	— 2.8	66	NW	9	4.0	.....	0	1s	.....	NW	0	0	Clear	
Knoxville, Tennessee	29.26	743.2	30.35	770.9	19	— 7.2	85	Calm	0	0	.....	0	Sm'e	.....	.....	0	0	Smoky	
La Crosse, Wisconsin	29.50	749.3	30.29	769.4	23	— 5.0	86	NW	3	1.3	.....	.....	10n	.....	Calm	0.01	0.3	Light snow	
La Mesilla, New Mexico	26.22	666.0	30.37	771.4	15.5	— 9.2	40	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Laredo, Texas	.....	.....	.....	.....	42	5.6	27	E	1	0.4	.....	.....	10s	.....	Calm	0	0	Cloudy	
Leavenworth, Kansas	29.45	748.0	30.38	771.6	14	—10.0	81	Calm	0	0	.....	.....	Fog	.....	.....	0	0	Foggy	
Los Angeles, California	29.65	753.1	29.99	761.7	44	6.7	42	N	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Louisville, Kentucky	29.70	754.4	30.30	769.6	29	— 1.7	77	W	5	2.2	.....	.....	10s	.....	SW	0	0	Cloudy	
Lynchburg, Virginia	29.46	748.3	30.19	766.8	28	— 2.2	66	NW	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Maricopa Wells, Arizona	.....	.....	.....	.....	25	— 3.8	38	N	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Marquette, Michigan	29.42	747.3	30.17	766.3	23	— 5.0	73	W	4	1.8	.....	.....	10s	.....	Calm	0.22	5.6	Cloudy	
Mason, Texas	28.67	728.2	30.61	777.5	19	— 7.2	69	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Memphis, Tennessee	30.04	763.0	30.40	772.1	21	— 6.1	72	NW	4	1.8	.....	1c	Sm'e	SW	Calm	0	0	Clear	
Milwaukee, Wisconsin	29.50	749.3	30.24	768.1	22	— 5.6	72	NW	7	3.1	.....	.....	8s	.....	NW	0	0	Cloudy	
Mobile, Alabama	30.35	770.9	30.40	772.1	26.5	— 3.1	77	NW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Montgomery, Alabama	30.12	765.0	30.38	771.6	25.5	— 3.6	75	NW	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Morgantown, West Virginia	29.14	740.1	30.27	768.8	21.5	— 5.8	86	SW	9	4.0	.....	.....	10n	.....	SW	0.02	0.5	Light snow	
Mt. Washington, N. H.	23.19	589.0	29.55	750.6	2	—16.7	100	NW	78	34.8	.....	.....	Fog	.....	NW	0.87	22.1	Foggy	
Nashville, Tennessee	29.78	756.4	30.37	771.4	19	— 7.2	84	W	1	0.4	.....	0	Haze	.....	Calm	0	0	Clear	
New Haven, Connecticut	29.86	758.4	29.98	761.5	31	— 0.6	69	W	4	1.8	.....	0	0	.....	.....	0	0	Clear	
New London, Connecticut	29.89	759.2	29.94	760.5	29	— 1.7	67	NW	8	3.6	.....	1k	0	N	.....	0	0	Clear	
New Orleans, Louisiana	30.32	770.1	30.30	771.9	34	1.1	61	N	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Newport, Rhode Island	29.89	759.2	29.94	760.5	31	— 0.6	69	W	16	7.2	.....	0	0	.....	.....	0	0	Clear	
New York, New York	29.85	758.2	30.02	762.5	25	— 3.9	77	W	10	4.5	.....	5k	0	Calm	.....	0	0	Fair	
Norfolk, Virginia	30.15	765.8	30.20	767.1	27	— 2.8	66	W	8	3.6	.....	Haze	0	Calm	.....	0	0	Clear	
North Platte, Nebraska	27.12	688.8	29.88	758.9	14	—10.0	65	W	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Olympia, Washington Ter.	29.93	760.2	29.97	761.2	44	6.7	92	NE	1	0.4	.....	.....	10s	.....	Calm	0.09	1.5	Cloudy	
Omaha, Nebraska	29.13	739.9	30.33	770.4	8	—13.3	88	Calm	0	0	.....	0	2s	.....	Calm	0	0	Clear	
Oswego, New York	29.69	754.1	30.02	762.5	30	— 1.1	78	N	7	3.1	.....	.....	10n	.....	Calm	0.28	7.1	Heavy snow	
Pembina, Dakota	29.31	744.5	30.23	767.8	4	—15.6	87	SE	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Philadelphia, Pennsylvania	30.07	763.8	30.13	765.3	25	— 3.9	75	W	6	2.7	.....	5cs	Fog	W	Calm	0	0	Fair	
Phœnix, Arizona	.....	.....	.....	.....	35	1.7	36	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Pike's Peak, Colorado	17.65	448.3	29.84	757.9	7	—13.9	54	NW	22	9.8	.....	0	0	.....	.....	0	0	Clear	
Pioche, Nevada	23.96	608.6	29.73	755.1	34	1.1	79	S	4	1.8	.....	0	5s	.....	Calm	0	0	Fair	
Pittsburg, Pennsylvania	29.32	744.7	30.19	766.8	23	— 5.0	86	W	12	5.4	.....	.....	10s	.....	W	Inap.	Inap.	Cloudy	
Port Huron, Michigan	29.40	746.7	30.11	764.8	24	— 4.4	74	W	10	4.5	.....	.....	10ks	.....	W	0	0	Cloudy	
Portland, Maine	29.75	755.6	29.80	756.9	32	0.0	69	W	7	3.1	.....	5k	Haze	NW	.....	0.14	3.6	Fair	
Portland, Oregon	29.93	760.2	30.03	762.7	42	5.6	74	Calm	0	0	.....	.....	10s	.....	Calm	0.02	0.5	Cloudy	
Prescott, Arizona	24.78	629.4	30.14	765.5	26	— 3.3	75	NW	.....	.....	.....	8ck	0	Calm	.....	0	0	Fair	
Punta Rassa, Florida	30.27	768.8	30.29	769.4	42	5.6	48	N	12	5.4	.....	0	10ks	.....	N	0	0	Cloudy	
Red Bluff, California	29.53	750.0	29.90	759.4	48	8.9	85	S	5	2.2	.....	1k	0	Calm	.....	0	0	Clear	
Rochester, New York	29.37	746.0	30.02	762.5	27	— 2.8	88	W	8	3.6	.....	.....	10n	.....	W	0.10	2.5	Light snow	
Roseburg, Oregon	29.40	746.7	29.97	761.2	45	7.2	96	Calm	0	0	.....	.....	10s	.....	Calm	0.13	3.3	Cloudy	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instru-m'tal error and temperature. Inches.	Barometer. Corrected for instru-m'tal error and temperature. Millimeters	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Sacramento, California	29.88	758.9	29.96	761.0	44	6.7	84	S	4	1.8	.....	2c	Sm'e	SW	Calm	0	0	Fair	
St. Louis, Missouri	29.72	754.9	30.34	770.6	25	—3.9	75	NW	4	1.8	.....	.....	10s	.....	Calm	Inap.	Inap.	Cloudy	
St. Marks, Florida	30.32	770.1	30.34	770.6	24	—4.4	100	N	1	0.4	.....	0	0	.....	.....	0	0	Clear	
St. Paul, Minnesota	29.36	745.7	30.25	768.3	21	—6.1	67	NW	1	0.4	.....	5c	0s	Calm	Calm	Inap.	Inap.	Cloudy	
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salt Lake City, Utah	25.56	649.2	29.89	759.2	28	—2.2	66	W	4	1.8	.....	0	0	.....	.....	0	0	Clear	
San Antonio, Texas	29.68	753 9	30.31	769.9	85	1.7	53	NE	2	0.9	.....	.....	10s	.....	Calm	0	0	Cloudy	
San Diego, California	29.95	760.7	30.02	762.5	52	11.1	85	NE	6	2.7	.....	0	0s	.....	Calm	0	0	Fair	
Sandusky, Ohio	29.47	748.5	30.16	766.6	30	—1.1	89	SW	12	5.4	.....	.....	10ks	.....	SW	0.05	1.3	Cloudy	
Sandy Hook, New Jersey	30.02	762.5	30.04	763.0	29	—1.7	80	W	28	12.5	.....	0	2ks	.....	NW	0	0	Fair	
San Francisco, California	29.92	760.0	29.99	761.7	53	11.7	80	W	10	4.5	.....	.....	10s	.....	W	0	0	Cloudy	
Santa Fé, New Mexico	28.26	690.8	29.80	756.9	18	—7.8	59	NE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Savannah, Georgia	30.21	767.3	30.31	769.9	33	0.6	89	W	4	1.8	.....	0	Sm'e	.....	.....	0	0	Smoky	
Shreveport, Louisiana	30.24	768.1	30.48	774.2	22	—5.6	72	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Smithville, North Carolina	30.22	767.6	30.26	768.6	26	—3.3	75	NW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Springfield, Massachusetts	29.75	755.6	29.88	758.9	32	0.0	69	W	9	4.0	.....	5k	0	NW	.....	0	0	Fair	
Stanwix, Arizona	.....	.....	.....	.....	33	0.6	23	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Stockton, Texas	27.12	688.8	30.12	765.0	19	—7.2	69	SW	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Thatcher's Island, Mass	29.81	757.2	29.87	758.7	31	—0.6	68	NW	16	7.2	.....	1k	0	NW	.....	Inap	Inap.	Clear	
Toledo, Ohio	29.46	748.3	30.17	766.3	28	—2.2	88	SW	8	3.6	.....	.....	10s	SW	.....	0.05	1.3	Cloudy	
Tucson, Arizona	27.58	700.5	30.13	765.3	35	1.7	44	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Tybee Island, Georgia	30.24	768.1	30.28	769.1	32	0.0	61	NW	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Umatilla, Oregon	29.74	755.4	.....	.....	33	0.6	89	SW	10	4.5	.....	.....	10s	.....	W	0	0	Fair	
Vicksburg, Mississippi	30.18	766.6	30.46	773.7	25	—3.9	75	N	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Virginia City, Montana	24.16	613.6	29.64	752.8	14	—10.0	65	E	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Visalia, California	29.60	751.8	29.98	761.5	42	5.6	83	SE	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Washington, D. C.	30.06	763.5	30.19	766.8	23	—5.0	74	SW	7	3.1	.....	0	0	.....	.....	0	0	Clear	
Wickenburg, Arizona	.....	.....	.....	.....	23	—5.0	21	S	.....	.....	.....	0	5ks	.....	SW	0	0	Threatening	
Wilmington, N. Carolina	30.17	766.3	30.26	768.6	29	—1.7	59	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Winnemucca, Nevada	25.47	646.9	29.83	757.7	21	—6.1	85	NE	8	3.6	.....	10k	0	SW	.....	0	0	Cloudy	
Wood's Holl, Mass.	29.86	758.4	29.91	759.7	33	0.6	79	NW	20	8.9	.....	0	0	.....	.....	0	0	Clear	
Yankton, Dakota	28.91	734.3	30.36	771.1	0	—17.8	84	NE	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Yuma, Arizona	29.85	758.2	30.03	762.7	44	6.7	34	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Sub-Series.																			
York Factory, B. A.	29.96	761.0	30.01	762.2	—1.0	—18.3	84	S	14	6.3	.....	2ck	3s	S	S	0	0	Fair	J. Fortescue, W. Wood.
Havana, Cuba, W. I.	30.11	764.8	30.13	765 3	65	18.3	64	N	8	3.6	.....	.....	10n	.....	N	6	0	Cloudy	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.15	765.8	30.16	766.1	78	25.6	86	Calm	0	0	.....	8c	2s	Calm	SE	0	0	.....	James Gall.
Navassa, W. I.	29.90	759.4	29.98	761.5	81	27.2	.....	NE	10	4.5	.....	.....	.....	.....	.....	0	0	Fair	F. M Everett.
St. Thomas, W. I.	.....	.....	.....	.....	83	28.3	67	E	2	0.9	.....	2c	2k	E	.....	0	0	.....	G. O. Gellich.
Paramaribo, D. Guiana, S. A.	.....	.....	29.98	761.5	83	28.3	83	E	.....	.....	2	5k	2ks	E	.....	0	0	½ cloudy	C. J. Hering.
Batavia, Dutch Guiana, S. A	30.04	762.9	30.04	763.1	86.0	30	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0	Cloudy	Dr. H. Groot.
Medellin, Colombia, S. A.	25.25	641.3	.....	.....	64.8	18.2	84	Calm	.....	.....	0	3k	3ks	.....	.....	0	0	Cloudy	Thomas Herran.
Honolulu, Oahu, H. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Daniel Smith.
Makawao, Maui, H. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters: Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573,4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard Mare Island, Cal.	29.96	761.0	51	10.6	50	10.0	79	W	18	8.0	.....	.....	1s	.....	Calm	0	0	.....	.....	Threatening	
Navy Yard, Pensacola, Fla.	30.38	771.6	.....	.....	33	9.6	89	N	5	2.2	.....	.....	1	.....	.....	0	0	.....	.....	D. clouds.....	
Navy Yard, Portsmouth, N.H.	29.80	756.9	65	18.3	27	— 2.8	??	W	2	0.9	.....	.....	.....	.....	.....	0.2	5.	.....	.....	Clear.....	
Naval Hospital, Yokohama, Japan.....	29.66	753.4	67	19.4	67	19.4	89	SW	.....	.....	7	.....	6ks	.....	SW	3.11	79.0	.....	.....	Squally	
Adams. Augosta Bay, Straits of Magellan	29.35	745.5	49	9.4	49	9.4	78	Var.	.....	.....	2	.....	10	.....	SW	Heavy	Heavy	None	.....	Raining.....	
Alert, Yokohama, Japan.....	29.80†	756.9†	.....	.....	67	19.4	89	S	.....	.....	6–8	.....	10	.....	S	.....	.....	Moderate.	S&W	Squally.....	
Alliance, Constantinople, Turkey.	29.80	756.9	72	22.2	62	16.7	66	SE	.....	.....	4–5	.....	10	.....	SW	.....	.....	.....	.....	Rainy.....	
Ashuelot. Shanghai, China.....	30.26	768.6	54	12.2	39	3.9	82	W	.....	.....	1–2	.....	2	.....	.....	.....	.....	.....	.....	D. clouds....	
Canonicus, New Orleans, La.....	30.30	769.6	35	1.7	33	0.6	70	NE	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	Clear.....	
Colorado, New York, N. Y.....	29.99	761.7	29	—1.7	28	— 2.2	??	WSW	6	2.7	.....	4	.....	W	0	0	.....	.....	Fair		
Despatch, Constantinople, Turkey.	29.84	757.9	86	30.0	62	16.7	66	SSE	.....	.....	3	.....	7	.....	S	.....	.....	Moderate.	S	Showery.....	
Essex, Libreville, Lower Guinea.	29.81	757.2	84	28.9	86	30.0	88	W	.....	.....	1	.....	6	.....	W	.....	.....	Smooth	W	D. clouds.....	
Franklin, Norfolk, Va.....	30.27	768.8	27	—2.8	26	— 3.3	75	WNW	5	2.2	.....	.....	1	.....	WNW	0	0	.....	.....	Clear	
Guard, Lisbon, Portugal.....	30.03	762.7	63	17 2	66	18.9	68	WNW	.....	.....	2–5	.....	4	.....	W	.....	.....	.....	.....	Showery.....	
Lackawana, Mare Island, Cal.....	30.04	763.0	.....	.....	55	12.8	87	W	.....	.....	2	.....	6	.....	W	.....	.....	.....	.....	D. clouds.....	
Marion, Smyrna, Turkey.....	30.09	764.3	66	18.9	64	17.8	100	SW	.....	.....	4	.....	10	.....	SW	Light	Light	Smooth	.....	D. clouds.....	
Michigan, Erie, Pa.....	29.55	750.6	59	15.0	33	0.6	61	W	.....	.....	4	.....	10	.....	W	.....	.....	.....	.....	Cloudy.....	
Monocacy, Nagasaki, Japan.....	29.90	759.4	65	18.3	56	13.3	75	NW	.....	.....	0–1	.....	5	.....	NW	Blank	Blank	Smooth	.....	D. clouds.....	
Monongahela, Port Said, Egypt.....	30.18	766.6	67	19.4	67	19.4	100	N&W	.....	.....	1–2	.....	0	.....	.....	.....	.....	.....	.....	Blue sky.....	
New Hampshire, Port Royal, S.C.....	30.36	771.1	.....	.....	48	8.9	.....	NW	2	0.9	.....	.....	.....	.....	.....	0	0	.....	.....	D. clouds.....	
Omaha, Callao, Peru.....	30.08	764.0	73	22.8	73.5	23.1	88	SE	9	4.0	.....	2	.....	SE	0	0	Smooth	.....	Hazy..		
Onward, Callao, Peru.....	30.06†	763.5†	74	23.3	71	21.7	90	SE	.....	.....	3	.....	2	.....	.....	.....	.....	Long	W	D. clouds.....	
Osseo, Norfolk, Va.....	30.27	768.8	70	21.1	27	— 2.8	76	WNW	.....	.....	2	.....	2	.....	Calm	.....	.....	.....	.....	D. clouds.....	
Palos, Shanghai, China.....	30.24	768.1	48	8.9	38	3.3	90	WNW	.....	.....	1	.....	1	.....	.....	.....	.....	.....	.....	Clear	
Plymouth, N. 26° 49', W. 67° 44'.....	30.28	769.1	73	22.8	70	21.1	80	NNW	.....	.....	3	.....	9	.....	.....	.....	.....	Moderate.	NW	Overcast.....	
Powhatan, Hampton Roads, Va.....	.....	.....	.....	.....	30	— 1.1	90	NW	3.6	1.6	.....	.....	2	.....	.....	0	0	.....	.....	Clear.....	
Ranger, Shanghai, China.....	30.39	771.9	.....	.....	55	12.8	87	NW	.....	.....	1	.....	2	.....	Calm	.....	.....	.....	.....	Clear.....	
Rio Bravo, Brownsville, Texas.....	30.19	766.8	.....	.....	45	7.2	84	NNW	.....	.....	2	.....	10	.....	NW	.....	.....	.....	.....	D. clouds.....	
Santee, Annapolis, Md.....	30.20	767.1	68	20.0	26	— 3.3	.....	NW	.....	.....	2	.....	1	.....	.....	0	0	.....	.....	Clear.	
Saratoga, Hampton Roads, Va.....	.....	.....	.....	.....	27	— 2.8	100	NW	.....	.....	1	.....	1	.....	Calm	0	0	.....	.....	Clear.....	
St. Louis, League Island, Pa	29.97	761.2	26	— 3.3	25	— 3.9	100	WNW	12	5.4	.....	.....	2	.....	NNW	0	0	.....	.....	Fair.....	
Swatara, Norfolk, Va.....	30.23	767.8	.....	.....	32	0.0	59	WNW	.....	.....	2	.....	0	.....	.....	.....	.....	.....	.....	Blue sky.....	
Tennessee, Yokohama, Japan.....	29.73	755.1	64	17.8	67	19.4	100	SSW	48	21.5	.....	.....	10	.....	S&W	2.97	75.4	None	S&W	Squally.....	
Trenton, Villefranche, France.....	29.62	752.3	.....	.....	57	13.9	58	SSW	8	3.6	.....	.....	8	.....	S&W	0	0	.....	.....	D. clouds.....	
Vandalia, Villefranche, France.....	29.56	750.8	58	14.4	57	13.9	58	WSW	.....	.....	2–5	.....	5	.....	SW	.....	.....	Long Smooth	NE	Squally.....	
Wabash, Boston, Mass.....	29.87	758.7	45	7.2	31	— 0.6	100	WNW	11	4.9	.....	.....	3	.....	Calm	0	0	.....	.....	D. clouds. ...	
Wyoming, Washington, D. C.....	30.47†	773.9†	37	2.8	27	— 2.8	.....	W	.....	.....	2	.....	0	.....	.....	.....	.....	.....	.....	Blue sky.....	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. The position given for the Plymouth is that at noon, local time, instead of that at 7:35 a. m., Washington time.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.	Character.	Direction from—		
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—				
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama, N. 15° 38′ 59″, W. 97° 49′ 2″			29.75	755.6	82	27.8	87	NW			2		4		SW	Light	E	D. clouds	Capt. Howard.
S. S. City of Peking																			Lt. Z. L. Tanner, U.S.N.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio, Hong-Kong, China			30.04	763.0	65	18.3		NW			4		10					Overcast	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

NOTE.—The originals give the wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. † Aneroid; corrected for elevation, instrumental error not known.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.

S. S. Belgic																			Capt. John Metcalf.
S. S. Gaelic, N. 30° 00′, E. 179° 40′			30.22†	767.6†	70	21.1	??	N			4		kn		NE	Smooth	W	Raining	Capt. W. H. Kidley
S. S. Oceanic																			Capt. H. Parsell.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. †Aneriod.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig																			Capt. K. Undütsch.
S. S. Nürnberg, N. 37° 56′, W. 21° 11′			30.34	770.6	66.0	18.9	89	N			2		kn		NNE	Smooth	NNW	Rain and fog	Capt. A. Jaeger.
S. S. Ohio, N. 38° 3′, W. 71° 12′			30.05	763.3	42.0	5.6	58	NW			5		kts		NW	Rough	NW	D. clouds	Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, nor distinguish between upper and lower clouds.

UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Lo'wr	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second	0—10.	0—10.	0—10.	From—	From—	Character.	Direction From—		
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, N. 51° 33′, W. 16° 41′			29.81*	757.2*	53	11.7	86	NNW			6		4		NW	Heavy	NW	Threatening	Captain Sargent.
S. S. Ohio. N. 40° 16′, W. 69° 17′			29.90	759.4	40	4.4	82	W			6		10?		W	Rough	W	Clear?	Captain Morrison.
S. S. Pennsylvania, N. 50° 01′, W. 21° 30′			30.16†	766.1†	51	10.6	??	N			4		9		NE; N	Large	NW; NE	Cloudy	Captain Harris.

Note.—The originals give the barometer as read off; wind-force by the scale 0 to 12. *Aneroid. † Corrected for temperature and elevation, instrumental error not known.

RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

S. S. Nederland																			Capt. Randle.
S. S. Switzerland																			
S. S. Vaderland																			Capt. Jackson.
																			Capt. Nichols.

ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

S. S. Hibernian																			
S. S. Scandinavian, N. 52° 14′, W. 18° 12′			29.95	760.7	50	10.0		WNW			6		9		W	High	NNW	D. clouds	Capt. W. Richardson.

Note.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, Kennebunk, Maine			29.76	756.4	31	—0.6	89	NW	3	1.3			5ck		W			Clear	Capt. James Jorgensen.

Note.—The originals for the schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4.

Collated at the Office of the Chief Signal Officer of the Army, Washington, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^{d},) Chief Signal Officer. U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON DECEMBER 2, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:48 P. M. GREENWICH mean time.
0:58 P. M. PARIS mean time.

1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:18 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:38 P. M. COPENHAGEN mean time.
1:38 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.

1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:38 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:28 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours	.....	.....	29.97	761.2	62.6	17.0	61	NW	.....	.....	3	.....	4	.....	.....	0.213	5.4	Cloudy	Michel.
Algiers	.....	.....	29.78	756.4	60.1	15.6	64	NW	.....	.....	1	.....	5	.....	.....	1.035	26.3	Cloudy	Peter.
La Calle	.....	.....	29.75	755.7	55.9	13.3	66	W	.....	.....	3	.....	6	.....	.....	0	0	Cloudy	Fleury.
Tunis	.....	.....	29.80	756.8	57.7	14.3	69	WSW	.....	.....	3	.....	10	.....	.....	0.083	2.1	Covered	Jacques.
Sfax	.....	.....	29.91	759.7	66.2	19.0	.....	WSW	.....	.....	3	.....	7	.....	.....	0.118	3.0	Very cloudy	Husson.
Saida	.....	.....	29.96	760.9	42.8	6.0	67	WNW	.....	.....	2	.....	6	.....	.....	0.023	0.58	Very cloudy	Millot.
Tebessa	.....	.....	29.72	754.9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Bassières.
Geriville	.....	.....	29.88	759.0	54.0	12.2	86	W	.....	.....	3	.....	4	.....	.....	0.079	2.0	Cloudy	Lemaillot.
Laghouat	.....	.....	29.92	760.0	51.8	11.0	73	N	.....	.....	4	.....	6	.....	.....	0	0	Cloudy	Guyot.
Biskra	.....	.....	29.84	758.0	62.8	17.1	52	NW	.....	.....	3	.....	8	.....	.....	0	0	Cloudy	Kuntz.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890 ? meters, or 2,919.9 ? feet; Tebessa, 1,088 ? m., or 3,569.4 ? ft.; Geriville, 1,360 ? m.; or 4,461.7 ? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

Agram	29.32	744.8	29.89	759.1	43.3	6.3	93	NE	.....	.....	1	.....	10	.....	.....	0.213	5.4	.....	Prof. Ivan Stozir
Cracow, I. R. Observatory	29.15	740.3	29.83	760.2	41.7	5.4	91	NE	.....	.....	1	.....	10	.....	.....	0.004	0.1	.....	Dr. Wierzbiski.
Eperies	28.99	736.3	29.89	759.3	38.1	3.4	93	Calm	.....	.....	0	.....	10	.....	.....	0	0	Foggy	Julius Mikolik.
Gratz	28.65	727.8	29.95	760.6	39.6	4.2	78	NW	.....	.....	3	.....	5	.....	.....	0.236	6.0	.....	Andreas Rospini.
Hermannstadt	28.46	722.9	29.90	759.5	45.7	7.6	69	NW	.....	.....	4	.....	3	.....	.....	0	0	.....	Prof. Reissenberger.
Kremsmünster	28.50	724.0	29.91	759.7	29.8	— 1.2	96	NE	.....	.....	1	.....	10	.....	.....	0	0	.....	Prof. C. Wagner.
Lemberg	28.87	733.4	29.88	759.0	42.8	6.0	91	SE	.....	.....	1	.....	10	.....	.....	0.031	0.8	.....	Dr. T. Stanecki.
Pola	29.05	753.2	29.77	756.1	51.8	11.0	85	ESE	.....	.....	3	.....	10s	.....	.....	0.197	5.01	.....	I.R.Hydrographic Office
Szathmar	29.50	749.4	29.98	761.5	42.8	6.0	87	W	.....	.....	3	.....	10	.....	.....	0.228	5.8	.....	Johann Tamas, S. J.
Szegedin	29.63	752.7	29.92	759.9	48.6	9.2	75	Calm	.....	.....	0	.....	0	.....	.....	0	0	.....	Karl Stancel.
Trieste	29.74	755.4	29.84	758.0	51.0	10.9	82	E	.....	.....	1	.....	10	.....	.....	2.307	58.6	Heavy rain	P. Busin.
Vienna	29.20	741.6	29.91	759.8	39.9	4.4	87	NE	.....	.....	1	.....	0	.....	.....	0.047	1.2	.....	I. R. Central Met. Obs'y
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day; at Syathmar apparently on the following morning. The elevation of Gratz is 843.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

Arlon	28.36	720.4	29.90	759.5	40.3	4.6	85	SE	.....	.....	1	.....	5	.....	.....	0	0	.....	Prof. M. Passau.
Brussels	29.72	754.8	29.92	760.0	41.4	5.2	91	S	.....	.....	2	.....	10	.....	E	0.006	0.15	.....	Royal Observatory.
Furnes	29.89	759.1	29.91	759.7	45.0	7.2	94	NNW	.....	.....	2	.....	3	.....	.....	0	0	.....	M. E. de Cae.
Maeseyck	29.82	757.3	29.95	760.6	40.5	4.7	88	ENE	.....	.....	4	.....	8	.....	.....	0	0	.....	M. Pierrot.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	30.16	766.1	30.26	768.6	41.0	5.0		NW	7	3.1			5			0	0	Misty	W. Boswell.
Ardrossan																			
Armagh, Observatory			30.24	768.1	39.4	4.1		NW	2	0.9									William McNeil.
Bidston, (Liverpool Obs.)			30.15	765.8	45.2	7.3		NE	11	4.9			2						S. Call, for Dr. Robinson
Birr Castle, (Parsonstown)			30.22	767.6	39.0	3.9		Calm			0		8					Blue sky	John Hartnup.
Bradford, Yorkshire																		D. clouds	J. Dreyer.
Bridgetown, (Barbados)	29.90	759.4	29.93	760.2	82.0	27.8		NE			1		3			0	0		J. McLandsborough.
Cambridge, Observatory			30.08	764.0	46.5	8.1		NNE			1		1					D. clouds	Pvt. G. W. Roberts, A.
Cardington			30.07	763.8	44.0	6.7		NE			1		1					D. clouds	H. Todd. [H. C.
Chatham, School M. E.	29.87	758.7	30.00	762.0	48.2	9.0		SE			3		2					Blue sky	John McLaren.
Dartmoor	28.56	725.4	30.07	763.8	42.0	5.6		NE			4		3					Blue sky	Lt. W. G. Morris, R. E.
Davos Platz (Switzerland)																		Fine	Alexander Watt.
Donaghadee	30.18	766.6	30.21	767.3	48	8.9		NE			3		8						Francis Redford, M. A.
Dover	29.94	760.5	29.97	761.2	48	8.9		ENE			4		5					D. clouds	J. Mac Gowan.
Eccles, (near Manchester)			30.24	768.1	46.0	7.8		NE	0.8	0.4			7					½ clouded	J. Costello.
Falmouth, Observatory	29.85	758.2	30.08	764.0	46.8	8.2		N			4		2					Misty	Thomas Mackereth.
Fort Napier, (Natal)	27.51	698.7	29.69	754.1	95.1	35.1		NW			3		0					Foggy	The Staff.
Free Town, (Sierra Leone)			29.91	759.7	87	30.6		W			2		3					Blue sky	Pvt. G. Salmon, A. H. C.
Galway, Queen's College																		D. clouds	
Gibraltar, (Mediterranean)	30.00	762.0	30.05	763.3	57.3	14.1		NW			5		1						Prof. A. H. Curtis.
Glasgow, Observatory	30.01	762.2	30.22	767.6	46.0	7.8		NNE			1		8					Blue sky	Corpl. C. Aitken, A. H. C.
Great Yarmouth	30.03	762.7	30.03	762.7	46	7.8		NE			5		5					Gloomy	D. G. Maclean.
Greenwich, Royal Obs'y	29.81	757.9	30.02	762.5	46.0	7.8		NE			2		0					D. clouds	G. T. Watson.
Guernsey	29.73	755.1	29.95	760.7	48.5	9.2		NE			2		7					Blue sky	The Staff, for G. B. Airy.
Helston			30.06	763.5	49	9.4		N			4		0					D. clouds	Dr. S. E. Hoskins, F. R. S.
Holyhead	30.12	765.0	30.18	766.6	47	8 3		NNE			3		2			0.19	4.8	Fine	M. P. Moyle.
Jersey	29.65	753.1	29.95	760.7	49.0	9.4		NNE			6		3					Blue sky	John Tilston.
Kew, Observatory			30.03	762.7	47.3	8.5		NE	17	7.6			3			Blank	Blank	Blue sky	J. Fisher.
Kingstown	30.17	766.3	30.20	767.1	43	6.1		WNW			3		6					Thin haze	The Staff.
Leicester, Museum			30.11	764.8	45.4	7.4		NE			2		5					D. clouds	George Mitchell.
Malta, (Mediterranean)	29.76	755.9	29.84	757.9	62.6	17.0		SE			3		1					D. clouds	Wm. J. Harrison, F. G. S.
Nairn	30.12	765.0	30.21	767.3	39	3.9		Calm			0		6					D. clouds	Sgt. Fred. Travis, A. H.
Nassau, (Bahamas)			30.18	766.6	69.8	21.0		N			2		0					Clear	W. D. Penny. [C.
Nottingham, Observatory	29.93	760.2	30.13	765.3	46.7	8.2		NNE			3		9					D. clouds	C. S. Duncombe.
Oscott, St. Mary's College	29.57	751.1	30.10	764.5	45.0	7.2		NNE			3		1k		NE	0	0	Blue sky	E. J. Lowe, F. R. S.
Oxford, Radcliffe Obs'y			30.06	763.5	46	7.8		N			3		7					D. clouds	Rev. Stephen Whitty
Plymouth	29.96	761.0	30.03	762.7	47.6	8.7		NNE			1		0					Blue sky	Mr. Lucas.
Roche's Point	30.13	765.3	30.18	766.6	47	8.3		N			3		1					D. clouds	John Merrifield.
Saint Ann's Head											3		5					Fine	W. Kennedy.
Sandwick Manse, (Orkneys)			30.22	767.6	38.6	3.7		NE	3	1.3									John C. Walker.
Scutari, Cemetery, (Turkey)			30.01	762.2	59.8	15.4		SW			1		5					D. clouds	Rev. C. Clouston, LL. D.
Sheffield	29.88	758.9	30.17	766.3	46.2	7.9		NNE			1		5					D. clouds	Sergt. W. H. Lyne.
Silloth Rectory	30.17	766.3	30.20	767.1	45.3	7.4	83	W			1		6			0.01	0.3	D. clouds	W. F. Cooper.
Stonyhurst, Observatory					45.0	7.2		NE			1		5			0	0	D. clouds	Rev. F. Redford, M. A.
Stornoway, Lews C. (Hebr.)			30.10	764.5	40	4.4		W			1		3					Blue sky	Rev. S. J. Perry.
Stratfield Turgiss	29.82	757.4	30.04	763.0	46.1	7.8		NE			1		8					D. clouds	John Smith.
Thurso			30.18	766.6	39	3.9		Calm			0		0					Blue sky	Rev. C. H. Griffith, F. M. S.
Truro, Royal Institution			30.09	764.3	50	10.0		NE			4		10					Foggy	John Trotter.
Valencia, Observatory			30.21	767.3	50.2	10.1		NNW	5	2.2			0					Blue sky	W. Newcombe.
Sub-Series.													4					D. clouds	The Staff.
Calf of Man, (Isle of Man)																			
Cape Good Hope, Obs'y	29.82	757.4	29.86	758.4	71.8	22.1	68	WNW	16	7.2		9	6						Henry Mercer.
Hobart Town, (Tasmania)			29.86	758.4	59.5	15.3	82	NW			3		10n			0.01	0.3	Covered	The Staff, for E. J. Stone.
Leith, Restalrig Park																			Francis Abbott, F. R. A. S.
Mauritius, Observatory	29.82	757.4	30.01	762.2	82.7	28.2	67	NNW	6.5	2.9		1	2	W	W	0	0	Fine	Andrew Gibb.
Melbourne, Observatory	29.92	759.9	30.01	762.2	54.9	12.7	74	SE	6	2.7			7			0	0	Fine	C. Meldrum.
Monach L't-house, (Hebrides)																			R. L. J. Ellery.
North Unst, (Shetland Is.)																			J. Youngclause.
																			Robert Burnet.

Note.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m.

Marine Series. Vessels.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea or swell. Height scale 0—9	Sea or swell. Direction from—	Weather.	Observer.
S. S. Algeria, Queenstown, Ireland			30.16	766.1	47	8.3		NNE			4		2			5*	WSW	D. clouds	Capt. W. Watson.
S. S. Batavia, N. 50° 15′, W. 20° 20′			30.19	766.8	57	13.9		SSW			4		10			3	SSW	Showery	Capt. J. E. Mouland.
Ship Camperdown																			Capt. A. T. Miller.
Brig Catherine																			Capt. Adam Smith.
Barque Celeste																			Capt. D. F. McKechnie.
S. S. Hibernia																			Capt. W. R. Cato
Barque Maroon																			Capt. A. T. Brown.
Ship Mikado																			Capt. C. C. Prehn.
S. S. Seine																			Capt. H. Manning.
Barque Sorata																			Capt. Jas. J. Price.
Schooner Traveller																			Capt. Alex Simpson.

Note.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. *Feet

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	BAROMETER. Corrected for instrum'tal error and temperature. Inches.	BAROMETER. Corrected for instrum'tal error and temperature. Millimeters.	BAROMETER. Reduced to sea-level. Inches.	BAROMETER. Reduced to sea-level. Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Upper. From—	CLOUDS. Direction. Lower. From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	WEATHER.	OBSERVER.
San José	26.23	666.2			67.6	19.8	91	SE			4	1ck	6ks;d		E	0	0		Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	30.02	762.4	30.07	763.6	43.5	6.4	84	E			6		10						
Fanöe	30.03	762.7	30.05	763.2	42.6	5.9	99	ENE			4		10						
Godthaab, (Greenland)	28.84	732.4	28.88	733.5	11.1	—11.6	85	NW			2		10						
Stykkisholm, (Iceland)	29.06	738.1	29.10	739.2	45.9	7.7	98	S			9		10					Raining	
Thorshavn, (Faröe)	30.01	762.3	30.05	763.2	47.3	8.5	88	SSW			6		10						
Vestervig	29.96	761.0	30.13	765.3	41.0	5.0	98	NE			6		10					Raining	

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

Alençon, Normal School	29.09	738.9	29.64	752.9	48.2	9	91	NE			3		10			0	0	Covered	Collignon, Director.
Amiens, Normal School	29.65	753.0	29.76	755.8	44.6	7.0	91	ENE			2		10			0.150	3.8	Covered	Bonvarne, Director.
Avignon, Normal School	29.60	751.8	29.68	753 8	50.7	10.4	62	N			3		0			0	0	Clear	Mr. Giraud, Director.
Bar-sur-Seine	29.23	742.4	29.80	757.0	43.9	6.6	88	S			1		10		S	0.051	1.3	Covered	C. Saillard.
Beaumette Obs'y (Angers)	29.03	752.7	29.79	756.7	45.5	7.5	88	NNE	10.3	4.6					E	0.035	0.9		Albert Cheux.
Beauvais	29.61	752.0	29.90	759.4	44.1	6.7	85	ENE			2		10		ENE	0.098	2.50	Covered	Normal School.
Besançon	28.92	734.6	29.83	757.6	44.2	6.8	88	S			3		8		SW	0.31	8.	Very cloudy	Normal School.
Bourg-en-Bresse	28.95	735.2	29.85	758.3	44.4	6.9	83	N			2	2c		E		0	0	Slightly cl'dy	Normal School.
Bourges, Normal School	29.25	742.9	29.81	757.2	43.5	6.4	97	SW			2		10		SW	0.12	3.	Covered	A. Wagner, Director.
Brest, Naval Observatory	29.69	754.2	29.91	759.8	48.4	9.1	65	NNE			4		4		NNE	0.108	2.75	Squally	The Staff.
Carcassonne, Normal School	29.37	746.1	29.80	756.8	47.8	8.8	94	W			2		1		NW	0	0	Clear	Vateau, Director.
Caen	29.81	757.1	29.89	759.2	48.9	9.4	70	NNE			4		2		SSW	0.150	3.8	Slightly cl'dy	Normal School.
Chartres, Normal School	29.23	742.5	29.81	757.1	49.2	7.9		N			2		10			0.16	4.	Covered	Lequin, Director.
Châlons-sur-Marne, N. Sch'l	29.51	749.6	29.82	757.5	45.5	7.5	69	Calm			0		8ck			0.114	2.9	Very cloudy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	29.39	721.1	29.76	755.9	46.2	7.9	63	E			1		8		N	0.150	3.8	Very cloudy	Alluard, Director.
Commercy, Normal School	28.94	735.0	29.83	757.7	43.0	6.1	94	SE			2		5		SE	0.28	7.	Cloudy	Dr. Goulet, Director.
Commune de Gréasque*	28.54	724.9	29.68	753.9	45.9	7.7	80	NE			1		10		S	0.098	2.5	Covered	V. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	29.55	750.5	29.76	756.0	45.0	7.2	91	N			2		10			0.039	1.0	Covered	Mouillot, Director.
Le Mans, Normal School	29.55	750.5	29.86	758.4	45.5	7.5	85	NE			2		8		N	0.138	3.5	Very cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	28.87	733.2	29.80	756 8	44.6	7	86	W			1		5		SW	0.177	4.50	Cloudy	Voudez, Director.
Lorient, Naval Observatory	29.83	757.7	29.93	760.2	50.0	10.0	60	N			3		8		N	0	0	¾ covered	T. Carré, Director.
Mâcon, Normal School	29.08	738.5	29.78	756.3	46.2	7.9	85	SW			2		10		SW	0.244	6.2	Covered	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	28.78	731.1	29.84	758.0	43.7	6.5	83	SSW			2		5		NNE	0	0	Cloudy	Normal School.
Nismes, Normal School	29.48	748.8	29.69	754.0	51.8	11	54	N			4		8		N	0	0	Very cloudy	Boyer, Director.
Orleans, Normal School	29.39	746.4	29.77	756.1	44.6	7	74	SW			2		8		E	0.24	6.	Very cloudy	Bernard, Director.
Paris, Observatory	29.59	751.5	29.83	757.7	41.8	7.1	84	NE			2		10k		E	0.020	0.65	Covered	National Observatory.
Privas	28.70	729.0	29.78	756.3	49 1	9.5	46	N			4		10		N	0	0	Covered	Normal School
Rochefort, Naval Obs'y	29.77	756.2	29.80	757.0	48.2	9.0	86	NW			2		10		SE	0.04	1.	Covered	Lt. Decante, Director.
Rouen, Normal School	29.78	756.5	29.87	758.7	48.6	9.2	72	NNE			3		2		E	0.213	5.4	Slightly cl'dy	F. Lucard, Director.
Tarbes, Normal School	28.76	730.4	29.85	758.3	48.2	9	98	WSW			2		5		W	0	0	Cloudy	T. Hugues, Director.
Villefranche	29.08	738.6	29.80	756.9	46.8	8.2	91	NE			2		2		NW	0.114	2.9	Slightly cl'dy	Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.85	758.1	29.87	758.8	80.6	27										0	0		L'Abbé Marchési.
Marseilles, Observatory			29.65	753 0	52.9	11.6	77	NW			1		8			0.031	0.80	Raining	The Staff.
Mont-Louis	24.55	623.5	29.86	758.5	30.9	— 0.6	64	WNW	9.3	4.17			8		WNW	0.016	0.4		Mr. Falguère.
Nice			29.03	752.7	53.6	12.0	54	N			2		10			0.098	2.5	Raining	Dr. A. Niepce.
Paris, Montsouris Obs'y	29.54	750.3	29.82	757.3	44.4	6.9	84	NNE			2		10		N	0.047	1.2		Marié Davy, Director.
Perpignan			29.75	755.7	53.2	11.8	52	NW	22.4	10.00			5		NW	0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.																			M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.16	562.8			22.3	— 5.4		NW			4		9			1.256	31.9	Snowy	Gen'l de Nansouty.
Saint Maur, (near Paris)	29.66	753.4	29.83	757.6	45.0	7.2	85	NNE			1		10		ENE	0	0		E. Renou.
Toulouse, Observatory	29.10	739.1	29.82	757.3	46.9	8.3	72	NW			1		7			0.028	0.70		The Staff.
Tours	29.60	751.8	29.80	756.8	44.2	6.8	76	ENE			2		10		ENE	0.217	5.5		C. Marguet.
Versailles, (near Paris)			29.84	757.8	48.9	6.6	85	NE			1		10			0.035	2.14	Covered	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.26	768.6	30.28	769 2	48.9	6.3	87	NE	2.2	1.0			5k			0	0	Clearing	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; for Montsouris, the barometer reduced to freezing but not to sea-level. At Mirecourt and Rochefort the cloud directions are apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,580.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time.

*Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg																			
Berlin	29.76	755.9	29.93	760.2	44.8	7.1	88	NE			1		10						Prof. Dr. Hoh.
Breslau	29.40	746.8	29.93	760.2	40 3	4.6	96	W			1		10			0.062	1.57	Raining	Prof. Arndt.
Carlsruhe	29.43	747.6	29.87	758.8	37.0	2.8	87	NE			2		10			0.051	1.31	Foggy	Royal University Obs'y.
Cassel	29.30	744.2	29.91	759.6	36.5	2.5	91	SSE			0		10	S		0	0		Albert Senz.
Crefeld	29.75	755.7	29.91	759.8	41.9	5.5	77	NE			3		3			0	0		Dr. H. Möhl.
Emden	30.16	766.0	30.19	766.9	43.9	6.6	96	NE			1		10			0	0		Director Lose.
Frankfort on the Main	29.56	750.9	29.94	760.4	41.4	5.2		ENE			2		1			0	0		Prof. Prestel.
Friedrichshafen	28.38	720.8	29.85	758.3	37.8	3.2	74	SE			3		7	SW		0	0		Physical Society.
Hamburg	29.89	759.3	29.97	761.1	41.9	5.5	99	E			1		10			0.102	2.6	Rain and fog	M. Wilhelm.
Kiel	29.98	761.6	30.00	762.0	43.2	6.2	96	NE			3		10			0	0		Captain F. Hegemann.
Königsberg, (Prussia)	29.98	761.5	30.16	766.1	44.2	6.8	87	E								0.005	0.12	Cloudy	Prof. G. Karsten.
Köslin			29.94	760.5	45.5	7.5		E			2		4			0	0		Prof. E. Luther.
Leipsic, Observatory	29.54	750.3	29.97	761.2	36.7	2.6	100	WNW			1		10	NW		0.035	0.9	Raining	H. Müller.
Memel, Naval School	30.08	763.9	30.12	765.1	43.0	6.1	88	ESE			2		10ks					Cloudy	Prof. Bruhns.
Neufahrwasser	30.01	762.2	30.02	762.6	44.8	7.1	94	E			2		2			0	0		Reinbrecht von Skalweit.
Posen	29.64	752.8	29.94	760.5	45.5	7.5	97	SE			2					0.154	3.92	Covered	A. Lothes.
Strassburg Obs., (in Alsace	29.32	744.6	29.88	759.0	36.7	2.6	91	NE			3		10			0	0		Dr. Magener.
Stuttgart	28.89	733.7	29.86	758.4	36.0	2.2	84	NE			1		6	E		0	0		Dr. Schur.
Treves, (Trier)	29.24	742.8	29.76	755.9	44.6	7.0	77	NE			4		2			0	0		Prof. Schoder.
Weissenburg, (Bavaria)	28.35	720.1	29.91	759.6	35.4	1.9	84	ENE	2	1			10		NE	0	0	Foggy	Prof. Flesch.
Wustrow, Naval School	29.98	761.5	30.02	762.5	43.5	6.4	92	NE			3		10			0.151	3.83	Foggy	Dr. Von Bebber.
German Naval Series.																			E. F. Schütz.

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet: Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4. Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines, Königsberg, Posen and Wustrow in cubic zolls. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.69	754.2	30.08	764.1	61.5	16.4		SW			2							½ Clear	Dr. J. F. J. Schmidt.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and wind-force; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.96	760.9	30.01	762.2	76.1	24.5	86	SSW	20.0?	8.9?		0				0	0	Blue sky	
Deesa	29.52	749.8	30.00	762.1	78.3	25.7	42	Calm				1	W			0	0	D. clouds	
Bombay	29.92	759.8	29.95	760.8	79.5	26.4	72	NNW	11.0	4.9		3	WNW			0	0	D. clouds	
Poona	27.91	708.9	29.91	759.8	79.6	26.4	56	SW				9	SW			0	0	D. clouds	
Lahore	29.29	744.0	30.08	763.9	57.4	14.2	78	Calm	0.5	0.2		0				0	0	Blue sky	
Belgaum	27.41	696.2	29.95	760.6	78.3	25.7	65	W	2.0	0.9		2			E	0	0	D. clouds	
Bangalore																			
Roorkee	29.14	740.0	30.07	763.8	63.2	17.3	55	Calm	1.7	0.8						0	0		
Agra	29.46	748.4	30.05	763.3	65.8	18.8	49	NE								0	0		
Trichinopoly																			
Nagpur	28.94	735.0	29.99	761.8	76.1	24.5	74	NE	2.8	1.2		4				0	0	Blue sky	
Madras																			
Lucknow	29.67	753.6	30.06	763.4	70.3	21.3	77	Calm	0.3	0.1									
Allahabad	29.73	755.2	30.05	763.4	64.2	17.9	51	Calm	0.4	0.2		0				0	0	Blue sky	
Patna	29.90	759.4	30.09	764.2	69.5	20.8	53	W	0.9	0.4		0				0	0	Blue sky	
Hazaribagh	27.99	711.0	30.06	763.6	66.6	19.2	46	N	3.3	1.5		4	W	W		0	0	D. clouds	
Cuttack	29.97	761.2	30.05	763.3	78.2	25.7	71	S	3.6	1.6		1				0	0	Blue sky	
Calcutta (Alipore)	30.04	763.0	30.06	763.6	71.7	22.1	81	ENE	2.0	0.9		2				0	0	Blue sky	
Goalpara	29.65	753.1	30.05	763.3	69.1	20.6	56	ENE	2.1	0.9		3				0	0	D. clouds	
Chittagong	29.97	761.3	30.07	763.7	70.8	21.6	52	NE	3.8	1.7		0				0	0	Blue sky	
Sibsagar	29.74	755.3	30.09	764.2	62.2	16.8	89	ENE	1.0	0.4		10				0	0		
Rangoon												5				0	0	D. clouds	
Jubbulpore	28.64	727.4	30.04	762.9	71.0	21.7	71	NE	1.8	0.8									
												0				0	0	Blue sky	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 1—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	21.85	555.0	29.84	757.9	19.2	— 7.1	74	E	.....	.....	6	.....	10	.....	.....	†39.380	†1000.0	.....	Ab. Dom. Morgini.
Stelvio	21.88	555.8	29.86	758.4	19.4	— 7.0	.....	SSE	.....	.....	1	.....	10	.....	.....	0	0	.....	Signora Ernesta Manfredi.
Udine	29.39	746.4	29.80	757.0	49.6	9.8	64	N	3.8	1.7	.....	.....	10	.....	.....	0.043	1.1	.....	Prof. Giovanni Clodig.
Padua	29.65	753.2	29.76	756.0	46.2	7.9	96	NE	13.7	6.1	.....	.....	10	NE	.....	0.445	11.3	.....	Prof. Dott. Lorenzoni.
Vicenza	29.59	751.6	29.79	756.6	45.3	7.4	89	NNW	4.9	2.2	.....	.....	10	.....	.....	0.244	6.2	.....	Conte Alm. Da Schio.
Verona	29.55	750.5	29.78	756.3	46.4	8.0	78	N	9.8	4.4	.....	.....	10	.....	.....	0.610	15.5	.....	Dott. B. Bertoncelli.
Bergamo	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Trionfini Carlo.
Domodossola	28.76	730.5	29.82	757.3	43.7	6.5	73	.....	.....	.....	.....	.....	10	.....	.....	0	0	.....	Prof. Giuseppe Calza.
Milan	29.20	743.1	29.79	756.6	43.2	6.2	.....	NNE	0	0	.....	.....	10	ESE	.....	0.024	0.6	.....	Ab. Gio. Capelli.
Pavia	29.42	747.3	29.78	756.3	41.9	5.5	89	E	.....	.....	2	.....	10	.....	.....	0.268	6.8	.....	Prof. Gio. Cantoni.
Moncalieri	28.88	733.6	29.81	757.2	40.1	4.5	95	NNW	1.3	0.6	.....	.....	10	E	.....	1.202	30.5	.....	Prof. P. F. Denza.
Mondovi	27.84	707.2	29.80	756.9	35.1	1.7	96	WSW	.....	.....	2	.....	10	.....	.....	0.197	5.0	.....	Prof. D. C. Bruno.
Porto Maurizio	29.41	746.9	29.63	752.6	53.1	11.7	40	NNE	.....	.....	2	.....	10	SE	.....	0	0	.....	Prof. L. Vassallo.
Genoa	29.51	749.6	29.65	753.2	48.2	9.0	59	N	9.4	4.2	.....	.....	10	S	.....	0.012	0.3	.....	Prof. G. M. Garibaldi.
Piacenza	29.51	749.5	29.73	755.1	41.0	5.0	89	NW	4.3	1.9	.....	.....	10	.....	.....	0.303	7.7	.....	Dott. G. Manzi.
Parma	29.42	747.3	29.74	755.5	42.8	6.0	95	SSW	.....	.....	2	.....	10	.....	.....	0.220	5.6	.....	Prof. P. Pigorini.
Florence	29.40	746.7	29.66	753.3	50.9	10.5	95	E	.....	.....	2	.....	10	.....	.....	0.756	19.2	.....	Cav. F. Meucci.
Leghorn	29.54	750.3	29.63	752.5	50.2	10.1	91	ENE	9.8	4.4	.....	.....	10	ENE	.....	0.303	7.7	.....	Prof. P. Monte.
Siena	28.46	722.5	29.07	738.0	47.8	8.8	98	SE	1.3	0.6	.....	.....	10	.....	.....	0.744	18.9	.....	Prof. L. Toscani.
Urbino	28.19	716 0	29.77	756.1	40.6	9.8	75	SSW	.....	.....	2	.....	10	.....	.....	0.386	9.8	.....	Prof. P. Serpieri.
Pesaro	29.69	754.2	29.74	755.5	50.2	10.1	88	SE	9.8	4.4	.....	.....	10	W	.....	0.047	1.2	.....	Prof. Luigi Guidi.
Ancona	29.64	752.8	29.75	755.6	52.9	11.6	81	SE	.....	.....	4	.....	10	SE	.....	0.063	1.6	.....	Prof. F. DeBosis.
Grosseto	29.54	750.2	29.65	753.1	57.2	14.0	88	ENE	.....	.....	6	.....	9	S	.....	0.213	5.4	.....	Avv. P. Ponticelli.
Rome	29.55	750.6	29.73	755.1	58.5	14.7	66	S	17.4	7.8	.....	.....	10	.....	.....	1.701	43.2	.....	Prof. P. A. Secchi.
Naples, O. U	29.64	752.9	29.84	758.0	62.2	16.8	68	SSE	.....	.....	6	.....	10	S	.....	1.339	34.0	.....	Prof. L. Palmieri.
Lecce	29.72	755.0	29.98	761.4	60.4	15.8	78	S	15.4	6.9	.....	.....	4	S	.....	0.008	0.2	.....	Prof. C. De Giorgi.
Cosenza	29.02	737.1	29.02	759.9	59.7	15.4	75	NE	4.3	1.9	.....	.....	4	.....	.....	0.031	0.8	.....	Prof. F. D. Conti.
Cagliari	.....	.....	.....	.....	55.8	13.2	80	S	.....	.....	2	.....	10	.....	.....	0.441	11.2	.....	Prof. A. Pacinotti.
Riposto, (Sicily)	.....	.....	.....	.....	63.0	17.2	63	WSW	.....	.....	4	.....	9	ENE	.....	0.346	8.8	.....	Prof. F. Cafiero.
Palermo	29.50	749.4	29.76	755.9	63.9	17.7	51	SW	11.2	5.0	.....	.....	10	.....	.....	0.047	1.2	.....	Prof. G. Cacciatore.
Caltanissetta	27.93	709.3	29.89	759.1	53.6	12.0	78	S	.....	.....	4	.....	10	N	.....	0	0	.....	Prof. A. Pagani.
Syracuse	29.79	756.6	29.86	758.5	63.7	17.6	67	SSE	.....	.....	4	.....	8	SW	.....	0	0	.....	Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.28	743.6	29.83	757.7	57.7	14.3	77	WNW	11.9	5.3	.....	.....	10	.....	.....	0.480	12.2	.....	Prof. F. Brioschi.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,543.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Siena, 348.5 m., or 1,143.3 ft.; Urbino, 461 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft. †Unmelted snow.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Tokei (Yeddo)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	The Observatory.
Tokei (Yeddo) University	29.93	760.2	30.03	762.7	56.0	13.3	78	NNE	3	1.3	.....	.....	9s	.....	.....	0.14	3.6	Cloudy	Prof. P. V. Veeder.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the cooperation of Señor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Aguascallientes	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	I. N. Marin, M. D.
Córdoba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	C. Peña, M. D.
Cuernavaca	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	L. Castillo, A. E.
Guadalajara	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. L. Perez.
Guanajuato	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. V. Fernandez.
Leon	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. M. Leal.
Mexico	23.13	587.5	30.20	768 5	52.3	11.3	78	SW	0.3	0.12	.....	1c	1s	SW	.....	0	0	Clear	Central Observatory.
Orizaba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	N. N.
Orizaba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	I. Orozco, M. D.
Pabellon, (Aguascalts)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Y. de Leon, M. E.
Puebla	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. B. Gonzalez.
Toluca	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. C. Velazquez.
Tlacotalpam	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. F. R. Bayly.
San Luis Potosi	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	G. Barroeta, M. D.
Vera-Cruz	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. J. Rossell.
Zacatecas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. A. Bonilla, M. E.
Puebla, (Catholic Institute)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	P. Spina. [M. M. D. D.
Morelia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Tena, F. L. Páramo

NOTE.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,239 m., or 7,312.9 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabell m, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m,, or 8,611.8 ft.; San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

Furnished by the cooperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	29.97	761.2	29.97	761.2	43.2	6.2	.....	NE	.....	.....	4	.....	.....	.....	.....	0.024	0.6	.....	
Groningen	29.94	760.5	30.00	761.9	40.8	4.9	.....	NE	.....	.....	1	.....	.....	.....	.....	0	0	.....	
Helder	30.01	762.2	30.01	762.2	42.8	6.0	.....	NE	.....	.....	3	.....	.....	.....	.....	0	0	.....	
Hellevoetsluis	.....	.....	29.97	761.2	38.3	3.5	90	ENE	.....	.....	3	.....	.....	.....	.....	.....	.....	.....	
Utrecht	29.95	760.7	30.00	761.9	40.1	4.5	87	NE	.....	.....	2	.....	2	.....	.....	0	0	Light cloudy	H. v d Brink.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	30.18	766.6	30.24	768.0	35.6	2.0	89	Calm	0	0	.....	.....	0	.....	.....	0	0	.....	
Brönö	30.15	765.7	30.19	766.7	42.1	5.6	75	S	20	9	.....	.....	9	.....	.....	0.220	5.6	.....	
Christiania	30.15	765.7	30.30	769.5	37.2	2.9	82	NNW	0	0	.....	.....	8	.....	.....	0.154	3.9	.....	
Tromsö	29.81	757.2	29.85	758.3	40.3	4.6	60	SW	18	8	.....	.....	10	.....	.....	0.346	8.8	.....	

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	30.13	765.3	30.32	770.2	63.3	17.4	96	S	1.3	0.6	.....	.....	10	.....	.....	0	0	.....	Dr. J. A. Sampaio.
Campo Major	29.05	737.9	30.09	764.2	54.5	12.5	48	NW	19.2	8.6	.....	.....	3	.....	.....	0.059	1.5	.....	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.16	766.1	30.23	767.9	69.4	20.8	58	SW	6.9	3.1	.....	.....	2	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.80	756.9	30.16	766.1	55.2	12.9	68	N	22.4	10.0	.....	.....	8	NNW	.....	0.008	0.2	.....	The Staff.
Ponta Delgada, (Azores)	30.28	769.1	30.35	770.9	64.8	18.2	84	SE	7.4	3.3	.....	.....	10	.....	.....	0	0	.....	

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

Naval Series. Vessels.	Sea or swell. Height scale 0—9	Sea or swell. Direction from—		
S. S. Bartholomew Dias.	.....	.....	.....	R. A. T. Pinha, Com'd't.
S. S. India.	.....	.....	.....	A. D. Pedroso, Com'd't.
S. S. Mindello.	.....	.....	.....	J. F. R. R. Bastos, Com'd't.
S. S. Sado.	.....	.....	.....	A. N. P. Sampaio, Com'd't.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.50	749.2	29.93	760.2	43.7	6.5	94	E	11	5	.....	.....	10ks	.....	.....	.....	.....	.....	Astronomical Obs.
Wilna	29.74	755.4	30.17	766.4	39.6	4.2	96	ESE	2	1	.....	.....	10	.....	.....	.....	.....	Heavy clouds	Astronomical Obs.
Dorpat	30.11	764.7	30.36	771.2	34.9	1.6	93	ESE	7	3	.....	.....	10n	.....	.....	.....	.....	.....	Prof. Dr. Weihrauch.
St. Petersburg	30.42	772.7	30.44	773.1	33.3	0.7	95	SE	9	4	.....	.....	10n	.....	.....	.....	.....	.....	Central Physical Obs.
Kuopio	30.06	763.4	30.39	772.0	30.9	— 0.6	92	S	13	6	.....	.....	10	.....	.....	Blank	Blank	.....	Ch. Forsten.
Kieff	29.33	744.9	29.98	761.6	37.2	2.9	66	E	9	4	.....	.....	10	.....	.....	.....	.....	.....	Physical Cabinet.
Nikolaiev	29.75	755.6	29.82	757.4	49.6	9.8	84	ESE	9	4	.....	.....	10n	.....	.....	.....	.....	.....	Kurdakof.
Kertch	29.95	760.7	29.97	761.2	55.8	13.2	86	E	7	3	.....	.....	7	.....	.....	.....	.....	.....	Lagorio.
Moscow	29.94	760.5	30.52	775.3	31.3	— 0.4	92	SSE	4	2	.....	.....	10s	.....	.....	.....	.....	.....	Meteorological Obs.
Lugan	29.91	759.8	30.13	765.2	34.3	1.3	57	E	22	10	.....	.....	9s	.....	.....	.....	.....	Light clouds	Meteorological Obs.
Archangel	30.56	776.1	30.58	776.6	26.2	— 3.2	96	ESE	18	8	.....	.....	10	.....	.....	.....	.....	.....	Ogorodnikof.
Tiflis	28.71	729.3	30.16	766.1	48.6	9.2	76	Calm	0	0	.....	.....	8ks	.....	.....	.....	.....	.....	Physical Observatory.
Astrakhan	30.32	770.0	30.23	767.9	32.7	0.4	61	NE	7	3	.....	.....	2s	.....	.....	.....	.....	.....	Sebastianof.
Kasan	30.25	768.4	30.55	775.9	18.1	— 7.7	63	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Physical Cabinet.
Orenburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Tschernischef.
Ekaterinburg	29.48	748.7	30.51	774.9	15.6	— 9.1	91	Calm	0	0	.....	.....	1cs	.....	.....	.....	.....	.....	Meteorological Obs.
Nukuss	29.98	761.6	30.23	767.8	35.2	1.8	90	NNW	4	2	.....	.....	10n	.....	.....	.....	.....	Light clouds	
Kasaly	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Tashkend	28.55	725.1	30.31	769.8	45.3	7.4	83	Calm	0	0	.....	.....	3	.....	.....	.....	.....	.....	Bobrof.
Barnaul	29.72	754.8	30.29	769.3	12.4	—10.9	86	S	4	2	.....	.....	0	.....	.....	.....	.....	.....	Michelson.
Yeniseisk	29.61	752.2	29.96	760.9	18.0	— 7.8	91	SSW	9	4	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Snowing	Marks.
Oorga	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Usolzef.
Krotkowo	29.93	760.3	30.43	772.9	22.8	— 5.1	59	N	2	1	.....	.....	.....	.....	.....	.....	.....	.....	Mossin.
Peking, (China)	30.29	769.3	30.43	772.9	26.2	— 3.2	44	NW	27	12	.....	.....	1s	.....	.....	.....	.....	.....	Cand. Fatjanow.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3cs	.....	.....	.....	.....	.....	Physical Observatory.
Vladivostock	30.07	763.8	30.11	764.8	28.0	— 2.2	67	NW	9	4	.....	.....	0	.....	.....	.....	.....	.....	Meteorological Obs.
Nikolaievsk, on the Amoor	.....	.....	.....	.....	15.4	— 9.2	91	Calm	0	0	.....	.....	7n	.....	.....	.....	.....	.....	

NOTE.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Viennasymbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Ar.tonio Rave, Director.
Bilbao, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Manuel de Naveran
Burgos, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Domingo Martin y Perez.
Madrid, Royal Observatory	27.68	703.1	29.95	760.6	46.9	8.3	62	NW	14.9	6.67	.....	0	3	.....	.....	0	0	Cloudy	The Staff.
Murcia, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Olayo Diaz, Director.
Santiago, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	30.18	766.5	30.25	768.2	63.6	17.6	66	NNE	15.2	6.8	.....	6ck	8kn	SW	NE	0	0	Cloudy	Benito Vines, S. J.
San Fernando, Naval Obs'y	30.00	762.0	30.10	764.6	55.8	13.2	67	WNW	9.5	4.3	.....	1	4	NNW	NW	0	0	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.	.....	.....	29.95	760.8	78.4	25.8	86	SE	0	0	.....	2s	2k	Calm	Calm	0	0	Clear.	Leonardo de Tejeda, Chief of Engineers.

NOTE.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the cöoperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Low'r 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	30.27	768.8	30.31	769.8	32.7	0.4	.....	S	.....	.....	4	.....	10	.....	.....	.....	.....	Snowing	
Umea	30.28	769.1	30.33	770.4	36.3	2.4	100	SW	.....	.....	2	.....	10	.....	.....	0.283	7.2	.....	
Hernosand	30.25	768.4	30.30	769.7	38.1	3.4	97	S	.....	.....	2	.....	10	.....	.....	0.543	13.8	.....	
Stockholm	30.04	763.0	30.22	767.5	39.9	4.4	97	NE	.....	.....	2	.....	10	.....	.....	0.043	1.1	.....	
Wisby	30.06	763.5	30.12	765.0	41.7	5.4	94	ESE	.....	.....	4	.....	10	.....	.....	0.024	0.6	Raining	
Sub-Series.																			
Upsala	30.18	766.5	30.25	768.4	39.6	4.2	99	NE	3.8	1.7	.....	.....	10	.....	.....	0.014	0.35	Raining	Dr. Hildebrandsson.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.35	720.0	29.81	757.1	42.8	6.0	80	NE	.....	.....	1	.....	7	.....	.....	0.130	3.3	Cloudy	The Observatory.
Zurich	28.17	715.5	29.86	758.4	39.2	4.0	79	NW	.....	.....	1	.....	2	.....	.....	0	0	Clear	The Observatory.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—For Geneva the corresponding departures from the normal values are: Barometer, —7.0 mm; Thermometer, +2.0 cent.; Relative Humidity, +1 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	30.06	763.5	61.0	16.1	68	SW	8	3.5	.....	.....	0	.....	.....	0	0	.....	The Observatory.
Fao, (Persian Gulf)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salonica	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	B. Stefanidès.
Valona	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. Bertrand.
Varna	.....	.....	30.02	762.6	59.9	15.5	.....	S	.....	.....	2	.....	10	.....	.....	0.08	2.	Covered	Imperial Observatory.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	30.03	762.7	30.15	765.7	68.2	20.1	71	N	.....	.....	1	.....	0	.....	.....	0	0	Blue sky	Prof. C. V. A. Van Dyck

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Hon. J. Ferguson.
Brockville, Ontario	30.10	764.5	30.45	773.4	6	—14.4	.....	Calm	0	0	.....	0	2s	.....	W	0	0	Fair	W. R. Bigg.
*Chatham, N. B	30.19	766.8	30.26	768.6	5	—15.0	87	SW	3	1.3	.....	0	0	.....	.....	0	0	Clear	G. A. Blair.
Charlottetown, P. E. Island.	30.16	766.1	30.20	767.1	19	— 7.2	91	W	8	3.6	.....	.....	10s	.....	Calm	0.075	1.91	Cloudy	H. J. Cundall, C. E.
Cornwall, Ontario	30.17	766.3	30.30	771.9	5.9	—14.5	100	S	.....	.....	1	0	1s	.....	.....	0	0	Clear	James Smith, M. A.
Dalhousie, N. B	30.08	764.0	.....	.....	.....	.....	.....	SW	.....	.....	1	.....	.....	.....	.....	0	0	Fine	H. A. Johnson.
Esquimault, B. C.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.08	2.0	.....	W. H. Bevis.
*Father Point, Quebec	30.23	767.8	30.25	768.3	16	— 8.9	83	SW	15	6.7	.....	.....	10s	.....	W	0	0	Cloudy	J. McWilliams.
Fredericton, N. B	30.28	769.1	30.35	770.9	8.1	—13.3	82	W	6.0	2.7	.....	0	0	.....	.....	0	0	Clear	Prof. Harrison.
*Fort Garry, Manitoba	28.91	734.3	29.77	756.1	24	— 4.4	87	SW	4	1.8	.....	5k	5n	W	W	0	0	Cloudy	James Stewart.
Goderich, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	H. J. Strang, M. A.
Granton, Ontario	29.21	741.9	30.44	773.2	4.7	—15.2	82	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	James Grant.
*Halifax, N. S	30.09	764.3	30.24	768.1	13	—10.6	81	N	11	4.9	.....	0	0	.....	.....	Inap.	Inap.	Clear	F. Allison, M. A.
Hamilton, Ontario	30.06	763.5	30.46	773.7	21.7	— 5.7	83	NW	.....	.....	2	.....	.....	.....	.....	0	0	Clear	Geo. Dickson, M. A
Heart's Content, N. F	29.90	759.4	29.92	760.0	15	— 9.4	64	NW	.....	.....	5	8k	4ks	NW	.....	0	0	Cloudy	E. Weedon.
*Kingston, Ontario	30.07	763.8	30.44	773.2	12	—11.1	90	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	S. Woods, M. A.
Little Glace Bay, N. S	30.13	765.3	30.17	766.3	22.0	— 5.6	.....	N	8	3.6	.....	7k	.....	N	.....	0	0	Fair	C. H. Rigby.
*Montreal, Quebec	30.19	766.8	30.42	772.7	10	—12.2	79	Calm	0	0	.....	0	Sm'e	.....	.....	0	0	Clear	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.61	752.1	30.37	771.4	15	— 9.4	82	SE	.....	.....	.....	2ok	5ks	SW	SW	0	0	Fair	Rev. R. Mosley.
Peterboro, Ontario	29.61	752.1	30.44	773.2	10.9	—11.7	44	SE	.....	.....	1	0	0	.....	.....	0	0	Clear	J. F. Jeffers, B. A.
Port Dover, Ontario	29.67	753.6	30.44	773.2	12	—11.1	94	N	5	2.2	.....	0	0	.....	.....	0	0	Clear	H. Morgan.
Port Hastings, N. S	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Peter Grant.
Port Stanley, Ontario	29.70	754.4	30.42	772.7	13	—10.6	96	NW	1	0.4	.....	0	0	.....	.....	0	0	Clear	M. Payne.
*Quebec, Quebec	30.08	762.7	30.38	771.6	10	—12.2	58	Calm	0	0	.....	0	Fog	.....	.....	0	0	Clear	Capt. Ashe, R. N
*Rockliffe, Ontario	29.89	759.2	30.40	772.1	4	—15.6	85	SE	5	2.2	.....	0	5s	.....	SE	0	0	Fair	W. H. McIntyre.
St. John, N. B	30.25	768.3	30.43	772.9	10	—12.2	79	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	G. Murdock, C. E.
*Saugeen, Ontario	29.57	751.1	30.33	770.4	16	— 8.9	97	S	9	4.0	.....	.....	10n	.....	W	0	0	Cloudy	K. Stewart.
Stayner, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. J. Cole.
Stratford, Ontario	29.03	737.3	30.45	773.4	9.6	—12.4	93	Calm	0	0	.....	0	.....	.....	.....	0	0	Fine	C. J. MacGregor, M. A.
*Sydney, C. B	30.09	764.3	30.13	765.3	22	— 5.6	71	NW	8	3.6	.....	8k	5ks	NW	NW	0	0	Cloudy	T. C. Hill.
*Toronto, Ontario	30.01	762.2	30.43	772.9	15	— 9.4	83	N	3	1.3	.....	0	2ks	.....	.....	0	0	Clear	Magnetic Observatory.
Windsor, N. S	30.16	766.1	30.26	768.6	17.5	— 8.1	92	W	0	0	.....	0	2k	.....	.....	0	0	Clear	Prof. John E. Oram.
Woodstock, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Montgomery.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	19.0	— 7.2	.....	S	.....	.....	.....	5k	5s	.....	.....	0.06	1.5	Fair	John Delany.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

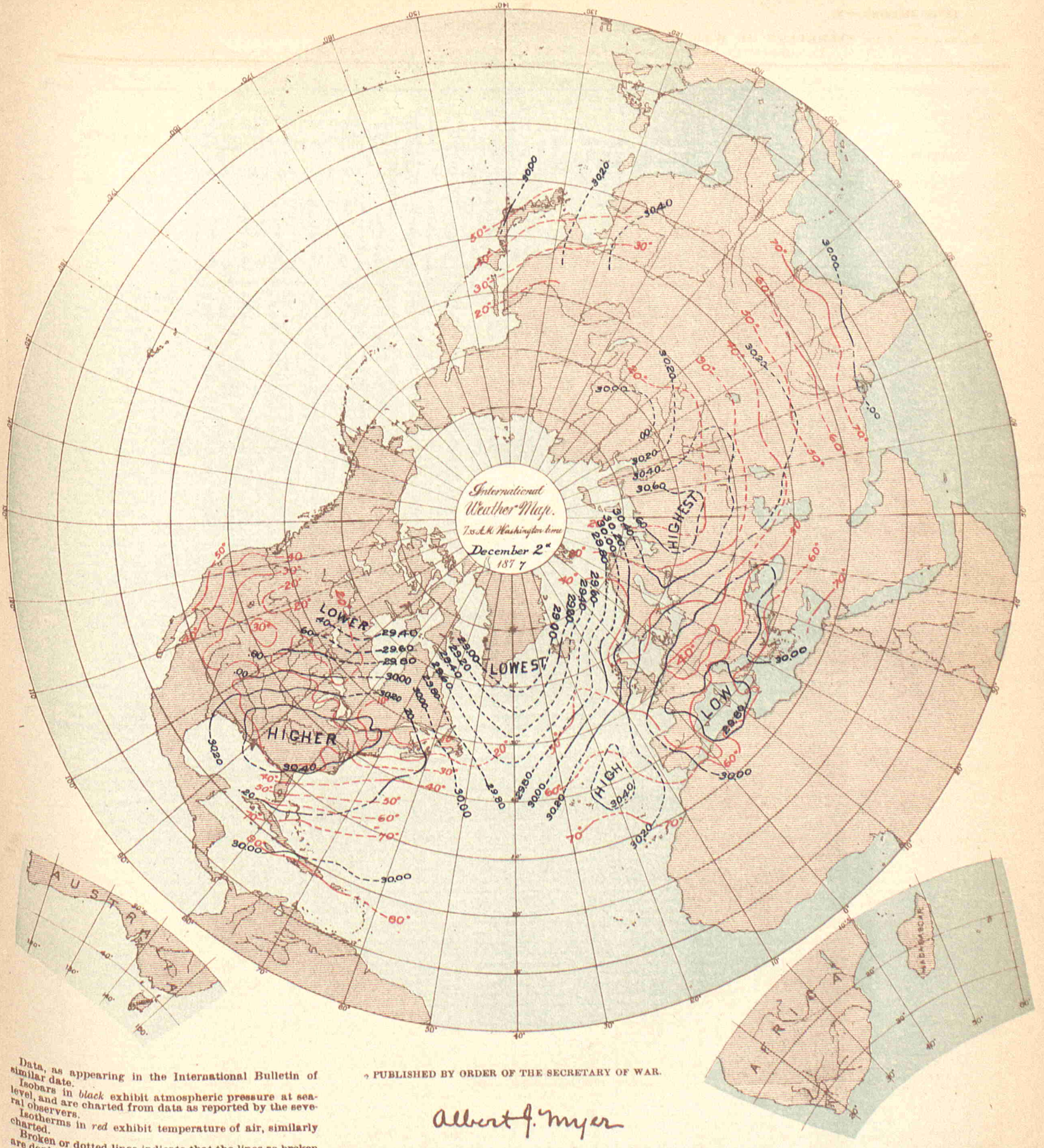
Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

UNITED STATES SERIES.

By authority of the SECRETARY OF WAR.

Furnished by the coöperation of Byt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rainfall or melted snow in the past 24 hours. Inches.	Rainfall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	30.15	765.8	30.40	772.1	15	— 9.4	82	NW	5	2.2		0	0			0	0	Clear.	
Alpena, Michigan	29.58	751.3	30.28	769.1	20	— 6.7	70	SW	8	3.6			10s		SW	Inap.	Inap.	Cloudy	
Atlantic City, New Jersey	30.36	771.1	30.38	771.6	27	— 2.8	77	NW	12	5.4		2k	0	Calm		0	0	Clear	
Augusta, Georgia	30.23	767.8	30.43	772.9	29	— 1.7	66	NE	1	0.4		0	Sm'e		NE	0	0	Smoky	
Baltimore, Maryland	30.36	771.1	30.41	772.4	31	— 0.6	79	NW	4	1.8		5ck	2s	NW	NW	0	0	Fair	
Barnegat, New Jersey	30.31	769.9	30.34	770.6	27	— 2.6	88	N	22	9.8			2ks		N	0	0	Fair	
Bismarck, Dakota	28.02	711.7	29.70	754.4	17	— 8.3	67	Calm	0	0		0	5s		Calm	0	0	Fair	
Boise City, Idaho	27.22	691.4	29.98	761.5	22	— 5.6	72	S	1	0.4		0	0			0	0	Clear	
Boston, Massachusetts	30.19	766.8	30.36	771.1	17	— 8.3	67	NW	13	5.8		1k	0	N		0	0	Clear	
Brackettville, Texas	29.06	738.1	30.11	764.8	46	7.8	54	SE	5	2.2			10s		Calm	0	0	Cloudy	
Breckenridge, Minnesota	28.83	732.3	29.90	759.4	13	—10.6	91	S	6	2.7			10s		Calm	0	0	Cloudy	
Brownsville, Texas	30.13	765.3	30.20	767.1	59	15.0	100	E	2	0.9			10n		Calm	0.55	14.0	Light rain	
Buffalo, New York	29.63	752.6	30.39	771.9	22	— 5.6	72	NW	1	0.4		2ck	2s	NW	Calm	Inap	Inap.	Fair	
Burkes, Arizona					33	0.6	42	NW				0	0					Clear	
Burlington, Vermont	30.13	765.3	30.42	772.7	5	—15.0	76	E	4	1.8		0	0			0	0	Clear	
Cairo, Illinois	30.11	764.8	30.54	775.7	24	— 4.4	74	SE	4	1.8		0	0			0	0	Clear	
Camp Grant, Arizona																			
Camp Verde, Arizona	26.54	674.1	30.03	762.7	26	— 3.3	52	NW				0	0			0	0	Clear	
Campo, California																			
Cape Hatteras, N. Carolina	30.29	769.4	30.30	769.6	38	3.3	63	N	20	8.9		0	2ks		N			Fair	
Cape Henry, Virginia	30.33	770.4	30.35	770.9	37	2.8	71	NE	16	7.2			10s		NE	0	0	Cloudy	
Cape Lookout, N. Carolina	30.32	770.1	30.34	770.6	35	1.7	61	N	14	6.3		0	0			0	0	Clear	
Cape May, New Jersey	30.33	770.4	30.36	771.1	31	— 0.6	79	N	16	7.2		0	0			0	0	Clear	
Charleston, South Carolina	30.33	770.4	30.40	772.1	34	1.1	61	NW	11	4.9		0	0			0	0	Clear	
Cheyenne, Wyoming	23.82	605.0	29.75	755.6	37	2.8	63	W	9	4.0		0	5s		Calm	0	0	Fair	
Chicago, Illinois	29.62	752.3	30.37	771.4	23	— 5.0	73	SW	8	3.6		1k	0	W		0	0	Clear	
Cincinnati, Ohio	29.76	755.9	30.46	773.7	29	— 1.7	78	S	2	0.9		5k	5s	SW	SW	0.01	0.3	Cloudy	
Cleveland, Ohio	29.66	753.4	30.50	774.7	23	— 5.0	73	SW	11	4.9			10s		Calm	0.27	6.9	Cloudy	
Concho, Texas	28.21	716.5	29.97	761.2	35	1.7	79	Calm	0	0		8cs	0	S		0	0	Cloudy	
Corsicana, Texas	29.86	758.4	30.38	771.6	26	— 3.3	76	SE	4	1.8		2cs	0	Calm		0	0	Clear	
Davenport, Iowa	29.63	752.6	30.32	770.1	22	— 5.6	72	SW	5	2.2		Haze	0	Calm		Inap.	Inap.	Fair	
Denison, Texas	29.51	749.5	30.37	771.4	31	— 0.6	48	SE	12	5.4		0	0			0	0	Clear	
Denver, Colorado	24.59	624.6	29.81	757.2	28	— 2.2	57	S	8	3.6		0	0			0	0	Clear	
Detroit, Michigan	29.67	753.6	30.40	772.1	20	— 6.7	70	W	4	1.8		0	0			0	0	Clear	
Dodge City, Kansas	27.33	694.2	29.70	754.4	30	— 1.1	68	S	6	2.7		0	5s		S	0	0	Fair	
Dubuque, Iowa	29.50	749.3	30.26	768.6	19	— 7.2	69	SW	3	1.3		0	Haze			0	0	Clear	
Duluth, Minnesota	29.27	743.4	29.99	761.7	17	— 8.3	83	NW	7	3.1		0	0			0	0	Clear	
Eagle Pass, Texas	29.45	748.0	30.22	767.6	45	7.2	76	SE	7	3.1			10s		Calm	0	0	Cloudy	
Eastport, Maine	30.26	768.6	30.33	770.4	14	—10.0	63	N	8	3.6		0	0			0	0	Clear	
Erie, Pennsylvania	29.63	752.6	30.39	771.9	27	— 2.8	77	SW	4	1.8			10s			0.04	1.0	Cloudy	
Escanaba, Michigan	29.50	749.3	30.20	767.1	19	— 7.2	84	SW	20	8.9		5k	0	S		0	0	Fair	
Florence, Arizona	28.29	718.6	29.89	759.2	45	7.2	24	Calm				0	0			0	0	Clear	
Fort Bayard, New Mexico	23.94	680.1	29.94	760.5	29	— 1.7	59	NW	8	3.6		0	0			0	0	Clear	
Fort Craig, New Mexico	25.50	647.7			18	— 7.8	53	NW	2	0.9		0	0			0	0	Clear	
Fort Gibson, Indian Ter	29.73	755.1	30.31	769.9	28	— 2.2	60	SE	7	3.1		0	0			0	0	Clear	
Fort Griffin, Texas	29.91	759.7	30.28	769.1	26	— 3.3	75	Calm				0	0			0	0	Clear	
Fort St. Michael, Alaska																			
Fort Sill, Indian Territory	28.99	736.3	30.18	766.6	26	— 3.3	88	SW	4	1.8		0	0			0	0	Clear	
Galveston, Texas	30.30	769.6	30.34	770.6	47	8.3	69	E	12	5.4			10s		W	0	0	Cloudy	
Grand Haven, Michigan	29.61	752.1	30.30	769.6	34	1.1	79	W	5	2.2			10s		W	0	0	Cloudy	
Indianapolis, Indiana	29.62	752.3	30.46	773.7	27	— 2.8	88	Calm	0	0			2s		Calm	Inap.	Inap.	Clear	
Indianola, Texas	30.30	769.6	30.33	770.4	46	7.8	77	NE	12	5.4			10s		Calm	0	0	Cloudy	
Jacksboro, Texas																			
Jacksonville, Florida	30.35	770.9	30.37	771.4	33	0.6	50	NW	8	3.6		0	0			0	0	Clear	
Keokuk, Iowa	29.62	752.3	30.28	769.1	24	— 4.4	75	S	5	2.2		0	Haze		Calm	0	0	Clear	
Key West, Florida	30.23	767.8	30.26	768.6	55.0	12.8	55	N	22	9.8		5k	5s	W	W	0	0	Cloudy	
Kityhawk, North Carolina	30.30	769.6	30.33	770.4	35	1.7	80	NW	20	8.9		0	5ks		N	0	0	Fair	
Knoxville, Tennessee	29.38	746.2	30.47	773.9	21	— 6.1	85	Calm	0	0		0	Sm'e			0	0	Smoky	
La Crosse, Wisconsin	29.35	745.5	30.13	765.3	23	— 5.0	60	S	15	6.7		0	0			0.01	0.3	Clear	
La Mesilla, New Mexico	26.04	661.4	30.29	767.1	21	— 6.1	57	N	1	0.4		0	0			0	0	Clear	
Laredo, Texas					44	6.7	92	NE	2	0.9			10n		Calm	0.01	0.3	Light rain	
Leavenworth, Kansas	29.28	743.7	30.18	766.6	27	— 2.8	77	S	6	2.7		0	0			0	0	Clear	
Los Angeles, California	29.57	751.1	29.91	759.7	52	11.1	43	N	12	5.4		0	0			0	0	Clear	
Louisville, Kentucky	29.88	758.9	30.48	774.2	27	— 2.8	88	W	4	1.8			Fog		Calm	Inap.	Inap.	Foggy	
Lynchburg, Virginia	29.70	754.4	30.42	772.7	36	2.2	45	NW	4	1.8		1c	0	S		0	0	Clear	
Maricopa Wells, Arizona					30	— 1.1	47	N				0	0			0	0	Clear	
Marquette, Michigan	29.38	746.2	30.13	765.3	20	— 6.7	70	S	4	1.8		0	0			0.07	1.8	Clear	
Mason, Texas	28.56	725.4	30.40	772.1	37	2.8	53	S	4	1.8			10s			0	0	Cloudy	
Memphis, Tennessee	30.16	766.1	30.51	774.9	23	— 5.0	65	Calm	0	0		0	Sm'e		Calm	0	0	Clear	
Milwaukee, Wisconsin	29.58	751.3	30.33	770.4	17	— 8.3	67	SW	11	4.9		0	2s			0	0	Fair	
Mobile, Alabama	30.44	773.2	30.48	774.2	27	— 2.8	88	N	5	2.2		0	0			0	0	Clear	
Montgomery, Alabama	30.23	767.8	30.49	774.4	26.5	— 3.1	82	NW	1	0.4		0	Sm'e		Calm	0	0	Clear	
Morgantown, West Virginia	29.35	745.5	30.49	774.4	26	— 3.3	70	SW	2	0.9			10s		SW	0.01	0.3	Cloudy	
Mt. Washington, N. H.	23.62	599.9	29.98	761.5	— 4	—20.0	64	NW	24	10.7		0	0			0	0	Clear	
Nashville, Tennessee	29.93	760.2	30.53	775.4	19	— 7.2	84	Calm	0	0		0	Haze		Calm	0	0	Clear	
New Haven, Connecticut	30.26	768.6	30.30	771.9	17	— 8.3	67	N	1	0.4		0	0			0	0	Clear	
New London, Connecticut	30.29	769.4	30.34	770.6	20	— 6.7	70	N	11	4.9		0	18;hz		Calm	0	0	Clear	
New Orleans, Louisiana	30.37	771.4	30.44	773.2	34	1.1	61	NE	10	4.5		0	0			0	0	Clear	
Newport, Rhode Island	30.30	769.6	30.35	770.9	22	— 5.6	58	N	12	5.4		0	0			0	0	Clear	
New York, New York	30.20	767.1	30.30	771.9	24	— 4.4	74	N	10	4.5		0	Sm'e			0	0	Clear	
Norfolk, Virginia	30.31	769.9	30.37	771.4	33	0.6	90	N	11	4.9		5k	Haze	W	Calm	0	0	Fair	
North Platte, Nebraska	26.92	683.8	29.63	752.6	16	— 8.9	83	NW	8	3.6		0	0			0	0	Clear	
Olympia, Washington Ter.	29.98	761.5	30.02	762.5	42	5.6	91	S	3	1.3			10n		Calm	0.07	1.8	Light rain	
Omaha, Nebraska	28.90	734.0	30.04	763.0	25	— 3.9	88	S	6	2.7		2cs	0	Calm		0	0	Clear	
Oswego, New York	30.08	764.0	30.42	772.7	19	— 7.8	79	SE	4	1.8		0	5s		NW	0.05	1.3	Fair	
Pembina, Dakota	28.91	734.3	29.77	756.1	29.5	— 1.4	73	W	4	1.8			10s		Calm	0	0	Cloudy	
Philadelphia, Pennsylvania	30.35	770.9	30.40	772.1	27	— 2.8	77	N	17	7.6		2ck	0	Calm		0	0	Clear	
Phœnix, Arizona					35	1.7	45	E				0	0			0	0	Clear	
Pike's Peak, Colorado	17.58	446.5	29.79	756.7	7	—13.9	64	W	42	18.8		0	0			0	0	Clear	
Pioche, Nevada	23.81	604.8	29.58	751.3	32	0.0	40	NW	6	2.7			10s		Calm	0	0	Cloudy	
Pittsburg, Pennsylvania	29.55	750.6	30.43	772.9	24	— 4.4	87	W	5	2.2		5k	5s	NW	W	Inap.	Inap.	Cloudy	
Port Huron, Michigan	29.66	753.4	30.39	771.9	19	— 7.2	69	SW	8	3.6		0	0			0.21	5.3	Clear	
Portland, Maine	30.33	770.4	30.38	771.6	18	— 7.8	84	NE	11	4.9		1k	Haze	Calm		0	0	Clear	
Portland, Oregon	30.08	764.0	30.18	766.6	40	4.4	91	S	1	0.4			10s		Calm	0	0	Cloudy	
Prescott, Arizona	24.52	622.8	29.88	758.9	38	3.3	25	SW				10cs	0	SE		0	0	Cloudy	
Punta Rassa, Florida	30.32	770.1	30.33	770.4	43	6.1	61	NE	16	7.2		0	5ks		NE	0	0	Fair	
Red Bluff, California	29.73	755.1	30.10	764.5	41	5.0	82	N	4	1.8		0	0			0	0	Clear	
Rochester, New York	29.73	755.1	30.40	772.1	20	— 6.7	85	SW	4	1.8		0	8s		W	0.05	1.3	Fair	



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

UNITED STATES SERIES.—CONTINUED.

STATIONS.	BAROMETER. Corrected for instrum'tal error and temperature. Inches.	BAROMETER. Corrected for instrum'tal error and temperature. Millimeters.	BAROMETER. Reduced to sea-level. Inches.	BAROMETER. Reduced to sea-level. Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Upper. From—	CLOUDS. Direction. Lower. From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	WEATHER.	OBSERVER.
Roseburg, Oregon	29.59	751.6	30.18	766.6	39	3.9	95	Calm	0	0	.....	Haze	0	.....	.....	0.01	0.3	Clear	
Sacramento, California	29.97	761.2	30.06	763.5	38	3.3	80	N	1	0.4	.....	0	0	.....	.....	0	0	Clear	
St. Louis, Missouri	29.80	756.9	30.42	772.7	22	—5.6	72	SE	10	4.5	.....	0	0	.....	.....	Inap.	Inap.	Clear	
St. Marks, Florida	30.39	771.9	30.41	772.4	25	—3.9	94	N	3	1.3	.....	0	0	.....	.....	0	0	Clear	
St. Paul, Minnesota	29.12	739.6	30.00	762.0	19	—7.2	69	SE	6	2.7	.....	0	0	.....	.....	Inap.	Inap.	Clear	
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salt Lake City, Utah	25.52	648.2	29.85	758.2	28	—2.2	66	E	4	1.8	.....	0	0	.....	.....	0	0	Clear	
San Antonio, Texas	29.60	751.8	30.21	767.3	44	6.7	52	E	4	1.8	.....	.....	10s	.....	Calm	0	0	Cloudy	
San Diego, California	29.89	759.2	29.96	761.0	56	13.3	66	N	16	7.2	.....	0	2s	.....	NW	0.01	0.3	Fair	
Sandusky, Ohio	29.72	754.9	30.44	773.2	24	—4.4	87	SW	8	3.6	.....	0	4ks	.....	Calm	Inap.	Inap.	Fair	
Sandy Hook, New Jersey	30.35	770.9	30.37	771.4	26	—3.3	64	NE	19	8.5	.....	2k	Sm'e	N	.....	0	0	Fair	
San Francisco, California	29.99	761.7	30.06	763.5	48	8.9	78	NW	2	0.9	.....	0	0	.....	.....	0.23	5.8	Clear	
Santa Fé, New Mexico	23.16	588.2	29.70	754.4	25.5	—3.6	64	E	4	1.8	.....	0	5s	.....	Calm	0	0	Fair	
Savannah, Georgia	30.30	769.6	30.40	772.1	31	—0.6	79	N	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Shreveport, Louisiana	30.23	767.8	30.47	773.9	25	—3.9	75	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Smithville, North Carolina	30.35	770.9	30.39	771.9	27	—2.8	88	N	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Springfield, Massachusetts	30.22	767.6	30.36	771.1	18	—7.8	68	N	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Stockton, Texas	26.99	685.5	29.99	761.7	31	—0.6	69	S	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Thatcher's Island, Mass	30.30	769.6	30.36	771.1	26	—3.3	64	NE	12	5.4	.....	8k	0	N	.....	0	0	Fair	
Toledo, Ohio	29.69	754.1	30.41	772.4	27	—2.8	77	SW	2	0.9	.....	0	2s	.....	SW	0.01	0.3	Fair	
Tucson, Arizona	27.41	696.2	29.96	761.0	35	1.7	35	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Tybee Island, Georgia	30.37	771.4	30.41	772.4	37	2.8	71	N	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Umatilla, Oregon	29.82	757.4	.....	.....	32	0.0	79	SE	6	2.7	.....	.....	10s	.....	W	0	0	Cloudy	
Vicksburg, Mississippi	30.23	767.8	30.52	775.2	27	—2.8	76	E	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Virginia City, Montana	24.15	613.4	29.63	752.6	14	—10.0	82	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Visalia, California	29.67	753.6	30.05	763.3	45	7.2	92	S	2	0.9	.....	.....	10s	.....	Calm	0.39	9.9	Cloudy	
Washington, D. C	30.30	769.6	30.42	772.7	28	—2.2	77	NW	9	4.0	.....	0	2s	.....	N	0	0	Fair	
Wickenburg, Arizona	.....	.....	.....	.....	23	—5.0	47	N	.....	.....	.....	0	5ks	.....	NW	0	0	Threatening	
Wilmington, N. Carolina	30.30	769.6	30.38	771.6	28	—2.2	67	N	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Winnemucca, Nevada	25.64	651.2	30.00	762.0	29	—1.7	89	Calm	0	0	.....	5k	0	Calm	.....	Inap.	Inap.	Fair	
Wood's Holl, Mass	30.27	768.8	30.33	770.4	26	—3.3	88	N	10	4.5	.....	Haze	0	.....	.....	0	0	Clear	
Yankton, Dakota	28.62	726.9	30.00	762.0	15	—9.4	82	E	3	1.3	.....	0	8s	.....	W	0	0	Cloudy	
Yuma, Arizona	29.69	754.1	29.86	758.4	45	7.2	48	W	20	8.9	.....	0	0	.....	.....	0	0	Clear	
SUB-SERIES.																			
York Factory, B. A	29.20	741.7	29.25	742.9	16.0	—8.9	92	S	8	3.6	.....	0	8s	.....	W	0	0	Cloudy	J. Fortescue, W. Wood.
Havana, Cuba, W. I	30.15	765.8	30.17	766.3	64	17.8	68	NE	24	1.1	.....	8ck	4n	Calm	NE	0	0	Cloudy	Chas. Hasselbrink.
Kingston, Jamaica, W. I	30.16	766.1	30.17	766.3	79	26.1	91	Calm	0	0	.....	5c	8n	Calm	.....	0	0	.....	James Gall.
Navassa, W. I	29.91	759.7	29.99	761.7	80	26.7	.....	NE	20	8.9	.....	.....	.....	.....	.....	0.40	10.2	Fair	F. M Everett.
St. Thomas, W. I	.....	.....	.....	.....	32	0.0	78	E	2	0.9	.....	2c	5k	E	.....	0	0	.....	G. O. Gellich.
Paramaribo, D. Guiana, S. A	.....	.....	29.99	761.7	84	28.9	76	SE	.....	.....	2	6ck	6k	E	.....	0.150	3.81	Fair	C. J. Hering.
Batavia, Dutch Guiana, S. A	30.03	762.8	30.04	763.0	85.1	29.5	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.98	25.	Rainy	Dr. H. Groot.
Medellin, Colombia, S. A	25.24	641.1	.....	.....	63.5	17.5	77	Calm	.....	.....	0	2c	1ks	.....	.....	0	0	Fair	Thomas Herran.
Honolulu, Oahu, H. I	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Daniel Smith.
Makawao, Maui, H. I	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,893 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.8 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,676 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,862.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not certain. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard Mare Island, Cal.	30.02	762.5	42	5.6	40	4.4	91	N	4	1.8	....	.....	0	.....	.....	0.045	1.14	.....	.....	Clear.	
Navy Yard, Pensacola, Fla.	30.44	773.2	.....	.....	33	0.6	??	N	4	1.8	....	.....	1	.....	.....	0	0	.....	.....	D. clouds.	
Navy Yard, Portsmouth, N.H	30.32	770.1	52	11.1	13	—10.6	100	N	2	0.9	.....	.....	.....	.....	.....	0	0	.....	.....	Clear	
Naval Hospital, Yokohama, Japan	29.92	760.0	62.5	16.9	56	13.3	90	Calm	.....	.....	0	.....	8ks;am.	.....	SSW	0	0	.....	.....	Cloudy.	
Adams. Tamar, Island, Chili	29.42	747.3	44	6.7	43	6.1	83	WNW	.....	.....	2	.....	7	.....	NW	Heavy	Heavy	Long	WNW	D. clouds.	
Alert, Yokohama, Japan	30.08	764.0	.....	.....	61	16.1	82	NNE	.....	.....	2	.....	8	.....	N	.....	.....	Smooth	.....	D. clouds.	
Alliance, Constantinople, Turkey.	30.16	766.1	76	24.4	65	18.3	58	WSW	.....	.....	2	.....	2	.....	WSW	.....	.....	.....	.....	Clear	
Ashuelot. Shanghai, China	30.35	770.9	58	14.4	47	8.3	85	NE	.....	.....	2	.....	3	.....	NE	.....	.....	.....	.....	D. clouds.	
Canonicus, New Orleans, La	30.27	768.8	35	1.7	37	2 8	90	E	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	Clear	
Colorado, New York, N. Y.	30.34	770.6	25	—3.9	24	—4.4	??	NNE	6	2.7	.....	.....	2	.....	NNE	0	0	.....	.....	Fair.	
Despatch, Constantinop'e, Turkey.	30.13	765.3	63	17.2	63	17.2	72	WSW	.....	...	2	.....	2	.....	Calm	.....	.....	.....	.....	Clear.	
Essex, Libreville, Lower Guinea.	29.81	757.2	84	28.9	86	30.0	92	W	.....	.....	2	.....	7	.....	S	.....	.....	.....	.....	D. clouds.	
Franklin, Norfolk, Va	30.42	772.7	38	3.3	36	2.2	80	NW	10.5	4.7	.....	.....	5	.....	NW	0	0	Smooth	W	D. clouds.	
Guard, Lisbon, Portugal	30.16	766.1	60	15.6	63	17.2	57	NNW	.....	.....	2–4	.....	8	.....	N	.....	.....	.....	.....	Overcast.	
Lackawana, Mare Island, Cal.	30.13	765.3	.....	.....	47	8.3	92	Calm	.....	.....	0	.....	0	.....	.....	.....	.....	.....	.....	Showery.	
Marion, Gulf of Smyrna	30.09	764.3	66	18.9	64	17.8	100	SW	.....	.....	1	.....	9	.....	Calm	Light	Light	Smooth	WSW	Blue sky.	
Michigan, Erie, Pa	29.84	757.9	60	15.6	29	—1.7	66	WSW	.....	.....	2	.....	5	.....	W	.....	.....	.....	.....	D. clouds.	
Monocacy, Nagasaki, Japan	30.08	764.0	58	14.4	47	8.3	92	N	.....	.....	1	.....	6	.....	N	.....	.....	.....	.....	Snowing.	
Monongahela, Suez Canal	30.20	767.1	72	22.2	72	22.2	100	NE	.....	.....	2	.....	c	.....	.....	.....	.....	.....	.....	Showery.	
New Hampshire, Port Royal, S.C.	30.46	773.7	.....	.....	35	1.7	70	N	12	5.4	.....	.....	.....	.....	.....	0	0	.....	.....	D. clouds.	
Omaha, Callao, Peru	30.07	763.8	73.5	23.1	70.5	21.4	95	Calm	0	0	.....	.....	4	.....	Calm	0	0	.....	.....	Blue sky.	
Onward, Callao, Peru	30.04†	763 0†	73	22.8	72	22.2	85	SSE	.....	.....	1	.....	4	.....	.....	.....	.....	Smooth	.....	Pleasant.	
Ossipee, Norfolk, Va	30.38	771.6	64	17.8	37	2.8	71	N	.....	.....	3	.....	8	.....	NNW	.....	.....	Long	W	D. clouds.	
Palos, Shanghai, China	30.30	769.6	57	13.9	45	7.2	92	NE	.....	.....	0–1	.....	1	.....	.....	.....	.....	.....	.....	D. clouds.	
Plymouth, N. 25° 6′, W. 67° 03′	30.19	766.8	76	24.4	75	23.9	86	NNE	.....	.....	4	.....	6	.....	.....	.....	.....	.....	.....	Clear.	
Powhatan, Hampton Roads, Va.	.....	.....	.....	.....	38	3.3	??	N	10.8	4.8	.....	.....	8	.....	.....	0	0	Smooth	.....	Pleasant.	
Ranger, Shanghai, China	30.41	772.4	.....	.....	53	11.7	80	ENE	.....	.....	1	.....	3	.....	Calm	.....	.....	.....	.....	Cloudy.	
Rio Bravo, Brownsville, Texas	30.08	764.0	.....	.....	56	13.3	94	NNW	.....	.....	3	.....	10	.....	NW	.....	.....	.....	.....	Pleasant.	
Santee, Annapolis, Md	30.44	773.2	60	15.6	32	0.0	.....	NW	.....	.....	3	.....	9	.....	NE	0	0	.....	.....	Raining.	
Saratoga, Hampton Roads, Va.	.....	.....	.....	.....	35	1.7	100	N	.....	.....	3	.....	9	.....	N&E	0	0	.....	.....	Cloudy.	
St. Louis, League Island, Pa	30.11	764.8	32	0.0	32	0.0	90	SW	5	2.2	.....	.....	4	.....	SE	0	0	.....	.....	Overcast.	
Swatara, Norfolk, Va.	30.44	773.2	.....	.....	60	15.6	50	N	.....	.....	2	.....	8	.....	N&W	.....	.....	.....	.....	Fair.	
Tennessee, Yokohama, Japan	30.01	762.2	68	20.0	58	14.4	94	N	5	2.2	.....	.....	9	.....	N	0.605	0.13	.....	.....	D clouds.	
Trenton, Villefranche, France	29.68	753.9	.....	.....	56	13.3	57	NE	4	1.8	.....	.....	10	.....	S&E	0.2	5.	None	.....	D. clouds.	
Vandalia, Villefranche, France	29.63	752.6	58	14.4	54	12.2	55	NE	.....	.....	2–3	.....	10	.....	NE	.....	.....	.....	.....	Raining.	
Wabash, Boston, Mass	30.32	770.1	29	—1 7	17	— 8.3	.....	N	7	3.1	.....	.....	2	.....	Calm	0	0	Long smooth	SW	Showery.	
Wyoming, Washington, D. C.	30.56†	776.2†	.....	.....	40	4.4	.....	N	.....	.....	1	.....	4	.....	N	.....	.....	.....	.....	D. clouds.	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	D. clouds.	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. The position given for the Plymouth is that at noon, local time, instead of that at 7:35 a. m., Washington time.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Character.	Direction from—		
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama, N. 17° 00′ 48″, W. 100° 35′			29.74	755.4	78	25.6	86	NW			2		3		N	Light	SW	D. clouds	Capt. Howard.
S. S. City of Peking																			Lt. Z. L. Tanner, U.S.N.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio, Hong-Kong, China			30.14	765.5	68	20.0		WSW			2		2		W			D. clouds	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

NOTE.—The originals give the wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Auriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.

S. S. Belgic																			Capt. John Metcalf.
S. S. Gaelic, N. 30° 02′, E. 174° 25′			30.35*	770.9*	68	20.0	??	ENE			5		c;n		NNE	Swell	NW	Overcast	Capt. W. H. Kidley
S. S. Oceanic																			Capt. H. Parsell.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. *Aneriod.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andresen
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig																			Capt. K. Undütsch.
S. S. Nürnberg, N. 35° 38′, W. 27° 1′			30.28	769.1	69.5	20.8	87	SSE			4		kn		SSW	Smooth	S	Squally	Capt. A. Jaeger.
S. S. Ohio, N. 39° 29′, W. 66° 30′			30.20	767.1	40.0	4.4	94	N			5		ks		NNE	Rough	NNW	Threatening	Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, nor distinguish between upper and lower clouds.

UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level,		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Lo'wr	Upper.	Lower.	Character	Direction from—		
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second	0—10.	0—10.	0—10.	From—	From—				
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, N. 51° 25′, W. 23° 23′			30.17*	766.3*	55	12.8	100	SSW			4		6		SSE	Moderate.	SW	Squally	Captain Sargent.
S. S. Ohio. N. 39° 00′, W. 75° 05′			30.41	772.4	38	3.3	81	NW			6		2		NW	None		Clear.	Captain Morrison.
S. S. Pennsylvania, N. 50° 46′, W. 13° 00′			30.29†	769.4†	53	11.7	100	NNE			2		9		NNE	Light	NW	Cloudy	Captain Harris.

Note.—The originals give the barometer as read off; wind-force by the scale 0 to 12. *Aneroid. † Corrected for temperature and elevation, instrumental error not known.

RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

S. S. Nederland																				Capt. Randle.
S. S. Switzerland																				Capt. Jackson.
S. S. Vaderland																				Capt. Nichols.

ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

S. S. Hibernian																				
S. S. Scandinavian, N. 52° 14′, W. 23° 44′			29.90	759.4	50	10.0		S			5		10		S	Mod'ate	S	Drizzling		Capt. W. Richardson.

Note.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller Kennebunk, Maine			30.32	770.1	31	—0.6	79	Calm	0	0			0					Clear		Capt. James Jorgensen.

Note.—The originals for the schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4.

Collated at the Office of the CHIEF SIGNAL OFFICER OF THE ARMY, Washington, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^{d}.) Chief Signal Officer, U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON DECEMBER 3, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:48 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.

1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.

1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:28 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Barometer: Corrected for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours	.....	.....	30.03	762.7	60.1	15.6	62	NW	.....	.....	4	.....	6	.....	.....	0.110	2.8	Cloudy.....	Michel.
Algiers	.....	.....	29.84	758.0	52.2	11.2	75	NW	.....	.....	8	.....	10	.....	.....	0.709	18.0	Covered.....	Peter.
La Calle	.....	.....	29.80	756.8	59.5	15.3	56	W	.....	.....	3	.....	6	.....	.....	0	0	Cloudy.....	Fleury.
Tunis	.....	.....	29.76	755.9	58.5	14.7	60	W	.....	.....	3	.....	5	.....	.....	0.016	0.4	Cloudy.....	Jacques.
Sfax	.....	.....	29.90	759.5	64.4	18.0	.....	SW	.....	.....	3	.....	8	.....	.....	0	0	Very cloudy	Husson.
Saida	.....	.....	29 98	761.6	45.3	7.4	75	WSW	.....	.....	4	.....	7	.....	.....	0.465	11.8	Very cloudy	Millot.
Tebessa	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Bassières.
Geriville	.....	.....	29.96	761.7	48.9	9.4	89	NNW	.....	.....	4	.....	5	.....	.....	0.079	2.0	Cloudy.....	Lemaillot.
Laghouat	.....	.....	29.99	761.0	53.6	12.0	75	N	.....	.....	4	.....	2	.....	.....	0	0	Fair.....	Guyot.
Biskra	.....	.....	29.89	759.3	60.4	15.8	42	NW	.....	.....	1	.....	4	.....	.....	0	0	Cloudy.....	Kuntz.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m.; or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

Agram	29.39	746.5	29.95	760.7	46.4	8.0	72	NE	.....	.....	2	.....	10	.....	.....	0.343	8.7	Raining... ...	Prof. Ivan Stozir
Cracow, I. R. Observatory	29.41	747.0	30.20	767.1	41.7	5.4	87	NE	.....	.....	2	.....	8	.....	.....	0.004	0.1	.....	Dr. Wierzbiski.
Eperies	29.26	743.1	30.16	766.0	44.6	7.0	81	Calm	.....	.....	0	.....	9;8	.....	.....	0	0	.....	Julius Mikolik.
Gratz	28.79	731.2	30.07	763.6	44.2	6.8	65	NNE	.....	.....	3	.....	10	.....	.....	0.197	5.0	.....	Andreas Rospini.
Hermannstadt	28.68	728.4	30.17	766.2	34.9	1.6	93	SE	.....	.....	1	.....	10	.....	.....	0	0	.....	Prof. Reissenberger.
Kremsmünster	28.54	724.8	29.91	759.7	40.3	4.6	90	E	.....	.....	5	.....	8	.....	.....	0	0	.....	Prof. C. Wagner.
Lemberg	29.19	741.5	30.22	767.5	39.2	4.0	93	SE	.....	.....	1	.....	10	.....	.....	0.008	0.2	.....	Dr. T. Stanecki.
Pola	29.57	751.0	29.98	763.9	50.5	10.3	82	E	.....	.....	7	.....	10s	.....	.....	1.644	41.76	.....	I.R.Hydrographic Office
Szathmar	29.73	755.1	30.21	767.3	43.9	6.6	71	E	.....	.....	3	.....	5	.....	.....	0	0	.....	Johann Tamas, S. J.
Szegedin	29.75	755.7	30.04	762.9	47.5	8.6	81	NE	.....	.....	1	.....	3	.....	.....	0	0	.....	Karl Stancel.
Trieste	29.69	754.0	29.79	756.6	49.6	9.8	64	ENE	.....	.....	4	.....	10	.....	.....	0.220	5.6	Raining.....	P. Busin.
Vienna	29.38	746.3	30.10	764.5	41.5	5.3	89	Calm	.....	.....	0	.....	10	.....	.....	0	0	.....	I.R. Central Met. Obs'y
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 388.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

Arlon	28.46	722.8	30.02	762.4	35.1	1.7	87	N	.....	.....	5	.....	10	.....	.....	0.008	0.2	.....	Prof. M. Passau.
Brussels	29.84	758.0	30.05	763.2	41.7	5.4	92	ENE	.....	.....	4	.....	10	.....	NE	.....	.....	Light rain....	Royal Observatory.
Furnes	30.06	763.5	30.08	764.1	43.3	6.3	96	NNE	.....	.....	2	.....	10	.....	.....	0	0	.....	M. E. de Cae.
Maeseyck	29.91	759.7	30.04	763.0	42.1	5.6	92	NE	.....	.....	4	.....	10	.....	.....	0	0	.....	M. Pierrot.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

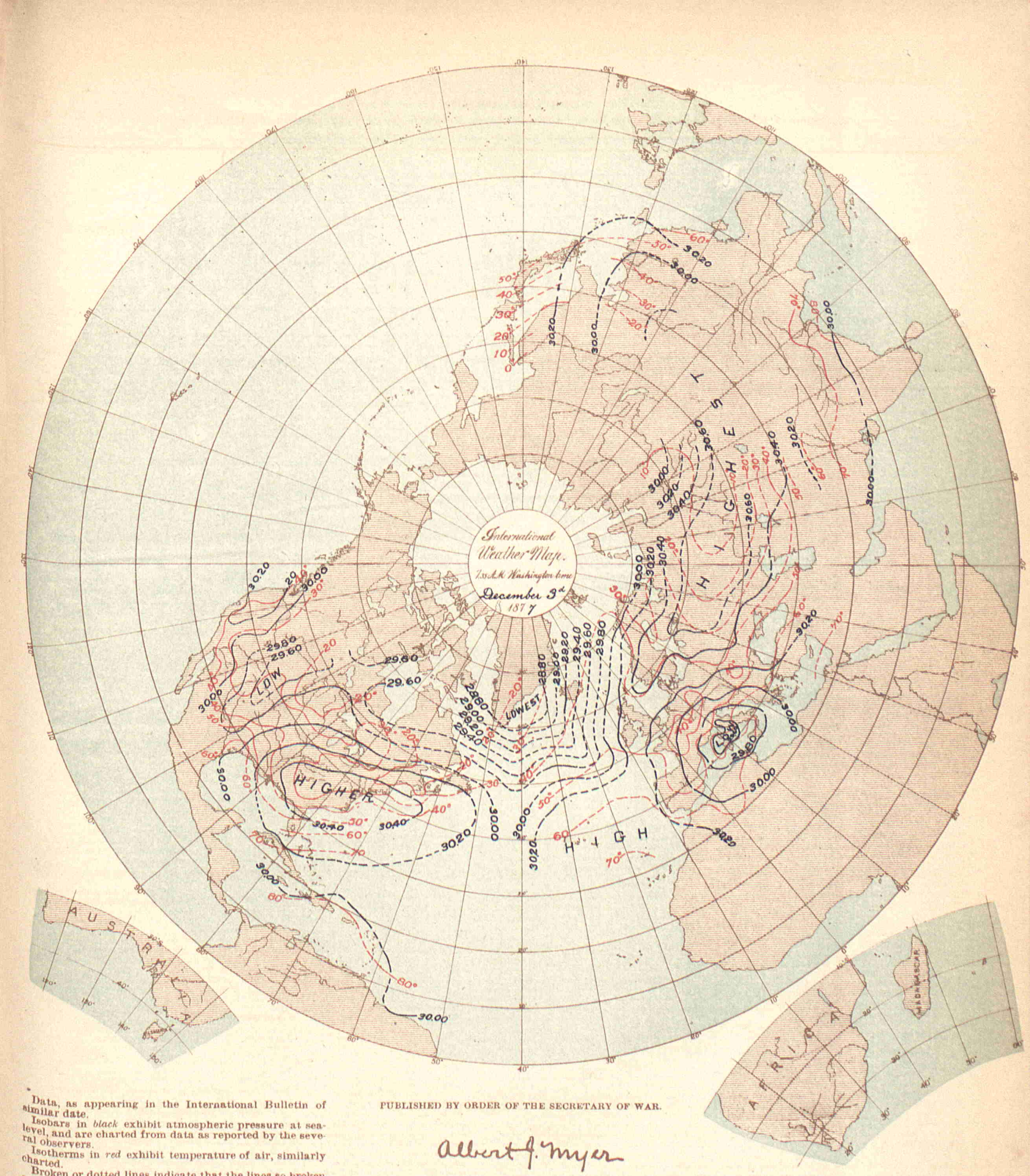
Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum't'al error and temperature. Inches.	Barometer. Corrected for instrum't'al error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	30.25	768.3	30.35	770.9	42.0	5.6	.....	SW	6	2.7	.....	.....	9	.....	.....	0.040	1.02	Misty	W. Boswell.
Ardrossan	30.29	769.4	30.30	769.6	43	6.1	.....	ENE	.....	.....	2	.....	0	.....	.....	.....	.....	Hazy	William McNeil.
Armagh, Observatory	.....	.....	30.31	769.9	42.4	5.8	.....	E	4	1.8	.....	.....	10	.....	.....	.....	.....	Overcast	S. Cull, for Dr. Robinson
Bidston, (Liverpool Obs.)	.....	.....	30.28	769.1	44.0	6.7	.....	NNE	6	2.7	.....	.....	10	.....	.....	.....	.....	Overcast	John Hartnup.
Birr Castle, (Parsonstown)	.....	.....	30.27	768.8	40.2	4.6	.....	SE	.....	.....	1	.....	4	.....	.....	.....	.....	D. clouds	J. Dreyer.
Bradford, Yorkshire	29.87	758.7	30.26	768.6	45.1	7.3	.....	S	.....	.....	2	.....	10	.....	.....	0.01	0.3	Overcast	J. McLandsborough.
Bridgetown, (Barbados)	29.89	759.2	29.92	760.0	79.0	26.1	.....	NE	.....	.....	1	.....	4	.....	.....	.....	.....	D. clouds	Pvt. G. W. Roberts, A.
Cambridge, Observatory	.....	.....	30.17	766.3	46.0	7.8	.....	N	.....	.....	1	.....	10	.....	.....	.....	.....	Drizzling	H. Todd. [H. C.
Cardington	.....	.....	30.19	766.8	45.0	7.2	.....	NE	.....	.....	1	.....	10	.....	.....	.....	.....	Overcast	John McLaren.
Chatham, School M. E	29.98	761.5	30.11	764.8	46.2	7.9	.....	NE	.....	.....	2	.....	10	.....	.....	.....	.....	Drizzling	Lt. W. G. Morris, R. E.
Dartmoor	28.60	726.4	30.11	764.8	41.0	5.0	.....	NE	.....	.....	3	.....	7	.....	.....	.....	.....	Foggy	Alexander Watt.
Davos Platz (Switzerland)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Francis Redford, M. A.
Donaghadee	30.27	768.8	30.30	769.6	46	7.8	.....	SSE	.....	.....	3	.....	10	.....	.....	.....	.....	Overcast	J. Mac Gowan.
Dover	30.08	764.0	30.10	764.5	48	8.9	.....	ENE	.....	.....	4	.....	7	.....	.....	.....	.....	¾ clouded	J. Costello.
Eccles, (near Manchester)	.....	.....	30.27	768.8	45.7	7.6	.....	NE	0.4	0.2	.....	.....	10	.....	.....	.....	.....	Gloomy	Thomas Mackereth.
Falmouth, Observatory	30.00	762.0	30.23	767.8	45.1	7.3	.....	NNW	.....	.....	1	.....	10	.....	.....	.....	.....	Foggy	The Staff.
Fort Napier, (Natal)	27.51	698.7	29.68	753.9	91.2	32.9	.....	NE	.....	.....	2	.....	4	.....	.....	.....	.....	D. clouds	Pvt. G. Salmon, A. H. C.
Free Town, (Sierra Leone)	.....	.....	29.93	760.2	82	27.8	.....	Calm	.....	.....	0	.....	5	.....	.....	.....	.....	D. clouds	.....
Galway, Queen's College	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	29.99	761.7	30.04	763.0	57.5	14.2	.....	NW	.....	.....	1	.....	0	.....	.....	.....	.....	Blue sky	Corpl. C. Aitken, A. H. C.
Glasgow, Observatory	30.11	764.8	30.32	770.1	40.9	4.9	.....	NNE	.....	.....	1	.....	.....	.....	.....	.....	.....	Dense fog	D. G. Maclean.
Great Yarmouth	30.16	766.1	30.17	766.3	46	7.8	.....	ENE	.....	.....	3	.....	7	.....	.....	.....	.....	Drizzling	G. T. Watson.
Greenwich, Royal Obs'y	29.98	761.5	30.15	765.8	45.9	7.7	.....	NE	.....	.....	1	.....	10	.....	.....	.....	.....	Raining	The Staff, for G. B. Airy.
Guernsey	29.91	759.7	30.13	765.3	48	8.9	.....	NNE	.....	.....	2	.....	8	.....	.....	.....	.....	Showery	Dr. S. E. Hoskins, F.R.S.
Helston	.....	.....	30.20	767.1	46	7.8	.....	N	.....	.....	4	.....	8k	.....	.....	0	0	Gloomy	M. P. Moyle.
Holyhead	30.21	767.3	30.27	768.8	45	7.2	.....	ENE	.....	.....	2	.....	10	.....	.....	.....	.....	Overcast	John Tilston.
Jersey	29.86	758.4	30.15	765.8	48.0	8.9	.....	NNE	.....	.....	3	.....	10	.....	.....	Blank	Blank	Overcast	J. Fisher.
Kew, Observatory	.....	.....	30.15	765.8	46.5	8.1	.....	N	11	4.9	.....	.....	10	.....	.....	.....	.....	Overcast	The Staff.
Kingstown	30.27	768.8	30.30	769.6	46	7.8	.....	SE	.....	.....	3	.....	4	.....	.....	.....	.....	D clouds	George Mitchell.
Leicester, Museum	.....	.....	30.24	768.1	45.0	7.2	.....	W	.....	.....	2.	.....	10	.....	.....	.....	.....	Drizzling	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.78	756.4	29.85	758.2	63.2	17.3	.....	SW	.....	.....	4	.....	6	.....	.....	.....	.....	D. clouds	Sgt. Fred. Travis, A. H.
Nairn	30.18	766.6	30.27	768.8	35	1.7	.....	Calm	.....	.....	0	.....	0	.....	.....	.....	.....	Clear	W. D. Penny. [O.
Nassau, (Bahamas)	.....	.....	30.27	768.8	69.5	20.8	.....	NE	.....	.....	7	.....	8	.....	.....	.....	.....	D. clouds	C. S. Duncombe.
Nottingham, Observatory	30.07	763.8	30.20	768.6	44.3	6.8	.....	NE	.....	.....	3	.....	10d	.....	NE	0.018	0.45	Overcast	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.70	754.4	30.24	768.1	43.0	6.1	.....	NE	.....	.....	3	.....	10	.....	.....	.....	.....	Overcast	Rev. Stephen Whitty.
Oxford, Radcliffe Obs'y	.....	.....	30.19	766.8	45	7.2	.....	NNE	.....	.....	1	.....	10	.....	.....	.....	.....	Misty	Mr. Lucas.
Plymouth	30.14	765.5	30.22	767.6	43.1	6.2	.....	NW	.....	.....	1	.....	10	.....	.....	.....	.....	Foggy	John Merrifield.
Roche's Point	30.22	767.6	30.27	768.8	45	7.2	.....	NE	.....	.....	2	.....	10	.....	.....	.....	.....	Dull	W. Kennedy.
Saint Ann's Head	30.07	763.8	30.24	768.1	45	7.2	.....	NE	.....	.....	1	.....	10	.....	.....	.....	.....	Overcast	John C. Walker.
Sandwick Manse, (Orkneys)	.....	.....	30.26	768.6	40.1	4.5	.....	S	19	8.5	.....	.....	0	.....	.....	.....	.....	Blue sky	Rev. C. Clouston, LL. D
Scutari, Cemetery, (Turkey)	.....	.....	30.16	766.1	57.2	14.0	.....	Calm	.....	.....	0	.....	9	.....	.....	.....	.....	Misty	Sergt. W. H. Lyne.
Sheffield	30.00	762.0	30.30	769.6	44.0	6.7	.....	NE	.....	.....	2	.....	10	.....	.....	0.07	1.8	Overcast	W. F. Cooper.
Silloth Rectory	30.27	768.8	30.30	769.6	44.3	6.8	90	NW	.....	.....	1	.....	8	.....	.....	0.010	0.25	D. clouds	Rev. F. Redford, M. A.
Stonyhurst, Observatory	.....	.....	.....	.....	44.8	7.1	.....	E	.....	.....	2	.....	10	.....	.....	.....	.....	Overcast	Rev. S. J. Perry.
Stornoway, Lews C. (Hebr.)	.....	.....	30.18	766.6	45	7.2	.....	SSW	.....	.....	6	.....	10	.....	.....	.....	.....	Overcast	John Smith.
Stratfield Turgiss	29.95	760.7	30.17	766.3	46.1	7.8	.....	NE	.....	.....	1	.....	10	.....	.....	.....	.....	Raining	Rev. C. H. Griffith, F.M.S.
Thurso	.....	.....	30.22	767.6	40	4.4	.....	S	.....	.....	2	.....	0	.....	.....	.....	.....	Blue sky	John Trotter.
Truro, Royal Institution	.....	.....	30.23	767.8	47	8.3	.....	NE	.....	.....	4	.....	8	.....	.....	.....	.....	Gloomy	W. Newcombe.
Valencia, Observatory	.....	.....	30.22	767.6	47.9	8.8	.....	SE	18	8.0	.....	.....	8	.....	.....	.....	.....	D. clouds	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Henry Mercer.
Cape Good Hope, Obs'y	30.17	766.3	30.21	767.3	71.6	22.0	49	SSE	17	7.6	.....	4	6	.....	.....	.....	.....	.....	The Staff, for E. J. Stone.
Hobart Town, (Tasmania)	.....	.....	29.62	752.3	56.5	13.6	82	S	.....	.....	2	.....	4k	.....	.....	0	0	.....	Francis Abbott, F.R.A.S.
Leith, Restalrig Park	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Andrew Gibb.
Mauritius, Observatory	29.91	759.7	30.10	764.4	78.7	25.9	78	ESE	8.0	3.6	.....	1	8	.....	ESE	0.04	1.0	Cld'y; gloomy	C. Meldrum.
Melbourne, Observatory	29.75	755.6	29.84	757.9	55.1	12.8	77	E	4	1.8	.....	.....	2	.....	.....	0	0	Fine	R. L. J. Ellery.
Monach L't-house, (Hebrides)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Youngclause.
North Unst, (Shetland Is.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Robert Burnet.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,1057 ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m.

Marine Series. Vessels.	Sea or swell. Height scale 0—9	Sea or swell. Direction from—		
S. S. Algeria, N. 51° 23', W. 14° 50	10*	WNW	Raining	Capt. W. Watson.
S. S. Batavia, N. 51° 10', W. 12° 40'	4	SSE	Overcast	Capt. J. E. Mouland.
Ship Camperdown	.....	.....	.....	Capt. A. T. Miller.
Brig Catherine	.....	.....	.....	Capt. Adam Smith.
Barque Celeste	.....	.....	.....	Capt. D. F. McKechnie.
S. S. Hibernia	.....	.....	.....	Capt. W. R. Cato
Barque Maroon	.....	.....	.....	Capt. A. T. Brown.
Ship Mikado	.....	.....	.....	Capt. C. C. Prehn.
S. S. Seine	.....	.....	.....	Capt. H. Manning.
Barque Sorata	.....	.....	.....	Capt. Jas. J. Price.
Schooner Traveller	.....	.....	.....	Capt. Alex Simpson.
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. *Feet



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	BAROMETER. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	Low'r 0—10.	Direction. Upper. From—	Lower. From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	Millimeters.	WEATHER.	OBSERVER.
San José	26.21	665.7	.....	.....	67.1	19.5	83	NE	.....	.....	4	.....	1ks;d	E	E	0	0	.....	Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	30.27	768.8	30.32	770.0	42.4	5.8	88	E	.....	.....	4	.....	10	.....	.....	.....	.....	.....	
Fanöe	30.28	769.1	30.30	769.6	42.3	5.7	93	E	.....	.....	4	.....	10	.....	.....	.....	.....	.....	
Godthaab, (Greenland)	28.74	730.1	28.79	731.2	13.3	-10.4	.....	WSW	.....	.....	7	.....	10	.....	.....	.....	.....	Snowing	
Stykkisholm, (Iceland)	29.13	739.9	29.17	741.0	36.9	2.7	93	S	.....	.....	8	.....	10	.....	.....	.....	.....	Raining	
Thorshavn, (Faröe)	29.91	759.6	29.94	760.5	49.1	9.5	86	SSW	.....	.....	5	.....	10	.....	.....	.....	.....	.....	
Vestervig	30.15	765.8	30.32	770.1	41.4	5.2	97	ENE	.....	.....	6	.....	10	.....	.....	.....	.....	.....	

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

Alençon, Normal School	29.60	751.8	30.15	765.8	46.4	8	93	NE	.....	.....	3	.....	5	.....	E	0	0	Cloudy	Collignon, Director.
Amiéns, Normal School	29.94	760.5	30.05	763.3	40.6	4.8	88	ENE	.....	.....	2	.....	10	.....	.....	0	0	Covered	Bonvarne, Director.
Avignon, Normal School	29.72	754.8	29.80	756.8	47.1	8.4	72	N	.....	.....	3	.....	0	.....	.....	0	0	Clear.	Mr. Giraud, Director.
Bar-sur-Seine	29.39	746.4	29.97	761.3	37.0	2.8	89	NNE	.....	.....	1	.....	10	.....	.....	Inap.	Inap.	Light rain	C. Saillard.
Beaumette Obs'y (Angers)	29.85	758 1	30.01	762.3	45.1	7.3	66	N	6 7	3.0	.....	.....	.....	.....	NNE	0	0	.....	Albert Cheux.
Beauvais	29.78	756.4	30.08	764.0	39.4	4.1	88	NE	.....	.....	1	.....	10	.....	.....	0	0	Covered	Normal School.
Besançon	29.61	756.8	29.92	760.0	41.0	5.	84	NE	.....	.....	3	.....	10	.....	.....	0	0	Covered	Normal School.
Bourg-en-Bresse	29.90	736.5	29.91	759.6	39.0	3.9	83	NW	.....	.....	2	2c	.....	NW	.....	0	0	Slightly cl'dy	Normal School.
Bourges, Normal School	29.42	747.2	29.98	761.6	37.4	3	89	N	.....	.....	2	.....	10	.....	N	0.091	2.3	Covered	A. Wagner, Director.
Brest, Naval Observatory	29.90	759.4	30.11	764.9	49.5	9.7	69	NNE	.....	.....	3	.....	2	.....	NNE	0.010	0.25	.....	The Staff.
Carcassonne, Normal School	29.51	749.5	29.93	760.3	42.3	5.7	97	W	.....	.....	2	.....	2	.....	NW	0	0	Slightly cl'dy	Vateau, Director.
Caen	30.02	762.6	30.08	764.1	45.7	7.6	77	NNE	.....	.....	4	.....	2	.....	SSW	0.04	1.	Slightly cl'dy	Normal School.
Chartres, Normal School	29.43	747.4	30.01	762.2	40.6	4.8	.....	NE	.....	.....	2	.....	10	.....	.....	0.04	1.	Covered	Lequin, Director.
Châlons-sur-Marne, N. Sch'l	29.67	753.6	30.00	762.1	35.8	2.1	93	NW	.....	.....	2	.....	10n	.....	.....	0	0	Covered	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	29.53	724.7	29.94	760.4	36.5	2.5	75	N	.....	.....	1	.....	10	.....	.....	0	0	Covered	Alluard, Director.
Commercy, Normal School	29.66	753.6	29.97	761.1	38.3	3.5	83	N	.....	.....	4	.....	10	.....	N	0.04	1.	Covered	Dr. Goulet, Director.
Commune de Gréasque*	28.63	727.2	29.77	756.2	45.9	7.7	94	NW	.....	.....	2	.....	8	.....	NW	0.04	1.	¾ covered	V. Kina.
Grenoble	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Normal School.
La Roche-sur-Yon, N. School	29.89	759.2	30.11	764.8	46 0	7.8	89	N	.....	.....	6	.....	0	.....	.....	0	0	Clear	Mouillot, Director.
Le Mans, Normal School	29.75	755.6	30.07	763.8	39.4	4.1	80	N	.....	.....	2	.....	8	.....	N	0	0	Very cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	28.95	735.4	29.89	759.2	41.0	5	84	W	.....	.....	1	.....	10	.....	Calm	0	0	Covered	Voudez, Director.
Lorient, Naval Observatory	30.05	763.3	30.15	765.8	50.7	10.4	58	N	.....	.....	3	.....	8	.....	N	0	0	¾ covered	T. Carré, Director.
Lorient, Normal School	29.19	741.5	29 90	759.4	41.2	5.1	93	Calm	.....	.....	0	.....	10	.....	.....	0	0	Covered	M. Marchal, Director.
Mâcon, Normal School	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. A. Schuster, Dir.
Metz	28.85	732.9	29.89	759.3	37.2	2.9	86	SSW	.....	.....	4	.....	10	.....	NNE	0	0	Covered	Normal School.
Mirecourt	29.69	751.5	29.79	756.7	50.0	10	64	N	.....	.....	4	.....	8	.....	N	0	0	Very cloudy	Boyer, Director.
Nismes, Normal School	29.68	751.4	29.97	761.2	38.1	3.4	80	N	.....	.....	6	.....	10	.....	.....	0	0	Covered	Bernard, Director.
Orleans, Normal School	29.78	756.5	30.03	762.8	39.4	4.1	86	NE	.....	.....	2	.....	10k	.....	NE	0	0	Covered	National Observatory.
Paris, Observatory	29.82	732.0	29.90	759.5	47.3	8.5	63	N	.....	.....	2	.....	10	.....	N	0	0	Covered	Normal School
Privas	30.00	761.9	30.03	762.7	49.3	9.6	79	NNE	.....	.....	3	.....	0	.....	.....	0	0	Clear	Lt. Decante, Director.
Rochefort, Naval Obs'y	30.00	761.9	30.08	764.1	42.1	5.6	78	NNE	.....	.....	3	.....	10	.....	NE	0	0	Covered	F. Lucard, Director.
Rouen, Normal School	28.80	731.5	29.90	759.5	48.2	9	73	SW	.....	.....	2	.....	5	.....	SW	0	0	Cloudy	T. Hugues, Director.
Tarbes, Normal School	29.21	741.8	29.94	760.5	39.7	4.3	83	NW	.....	.....	2	.....	10	.....	Calm	0	0	Covered	Vilot, Director.
Villefranche	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.47	12.	.....	L'Abbé Marchési.
SUB-SERIES.																			
Fort de France, Martinique	29.85	758.3	29.88	759.0	78.8	26	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0	Covered	The Staff.
Marseilles, Observatory	.....	.....	29.73	755.1	50.0	10.0	74	NW	.....	.....	1-2	.....	8	.....	.....	0	0	.....	Mr. Falguère.
Mont-Louis	24.61	625.0	29.92	760.0	32.0	0.0	53	NNW	11.2	5.00	.....	.....	5	.....	NW	0.012	0.3	.....	Dr. A. Niepce.
Nice	.....	.....	29.68	753.9	56.8	13.8	62	N	.....	.....	2	.....	8	.....	.....	0.433	11.0	Raining	Dr. A. Davy, Director.
Paris, Montsouris Obs'y	29.74	755.5	30.02	762.5	38.5	3.6	90	NNE	.....	.....	4	.....	10	.....	.....	0	0	.....	Marié Davy, Director.
Perpignan	.....	.....	29.86	758.4	49.3	9.6	56	NW	26.1	11.67	.....	.....	2	.....	.....	0	0	.....	Dr. Fines.
Pic du Midi, (Summit,) H. P.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.27	565.7	.....	.....	18.5	7.5	.....	N	.....	.....	4	.....	10	.....	.....	0.906	23.0	Snowy	Gen'l de Nansouty.
Saint Maur, (near Paris)	29.85	758.2	30.02	762.4	39.2	4.0	90	N	.....	.....	2	.....	10	.....	NNE	0	0	Covered	E. Renou.
Toulouse, Observatory	29.24	742.7	29.96	761.0	40.5	4.7	97	WNW	.....	.....	4	.....	10	.....	.....	0.260	6.60	Light rain	The Staff.
Tours	29.83	757.6	30.02	762.0	39.2	4.0	84	NE	.....	.....	1	.....	10	.....	ENE	0.016	0.4	.....	C. Marquet.
Versailles, (near Paris)	.....	.....	30.02	762.5	39.2	4.0	87	NE	.....	.....	3	.....	10	.....	.....	0	0	Light fog	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.41	772.5	30.44	773.1	44.6	7.0	75	N	6.3	2.8	.....	.....	1k	.....	.....	0	0	Clear	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; for Montsouris, the barometer reduced to freezing but not to sea-level. At Mirecourt and Rochefort the cloud directions are apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,368 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 185 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time.

*Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg																			Prof. Dr. Hoh.
Berlin	30.03	762.7	30.20	767.1	44.6	7.0	87	S			1		9			0.029	0.74	Raining	Prof. Arndt.
Breslau	29.68	753.8	30.21	767.4	42.1	5.6	84	E			2		10			0	0	Foggy	Royal University Obs'y.
Carlsruhe	29.50	749.3	29.94	760.4	41.0	5.0	81	NE			2		10			0	0		Albert Senz.
Cassel	29.53	750.1	30.14	765.6	40.6	4.8	65	E			2		10	E		0	0		Dr. H. Möhl.
Crefeld	29.87	758.6	30.03	762.7	43.9	6.6	83	NE			4		9			0	0		Director Lose.
Emden	30.21	767.2	30.24	768.1	45.1	7.3	97	ENE			2		10			0	0		Prof. Prestel.
Frankfort on the Main	29.69	754.2	30.07	763.7	43.2	6.2		NNE			3		7			0.118	3.0		Physical Society.
Friedrichshafen	28.43	722.2	29.91	759.7	37.4	3.0	83	NE			6		10	NNE		0	0		M. Wilhelm.
Hamburg	30.13	765.3	30.20	767.1	44.8	7.1	96	ENE			3		10			0.024	0.6	Light rain	Captain F. Hegemann.
Kiel	30.20	767.0	30.21	767.4	43.9	6.6	96	ENE			4		10			0.055	1.4	Light fog	Prof. G. Karsten.
Königsberg, (Prussia)	30.25	768.3	30.33	770.4	40.1	4.5	86	SE								0.120	3.04		Prof. E. Luther.
Köslin			30.23	767.9	43.3	6.3		E			2		4			0.001	0.02	Cloudy	H. Müller.
Leipsic, Observatory	29.72	754.9	30.16	766.0	39.4	4.1	88	ENE			4		10	ENE		0	0		Prof. Bruhns.
Memel, Naval School	30.35	770.9	30.40	772.1	37.6	3.1	83	E			1		10cs;ks			0.126	3.2		Reinbrecht von Skalweit.
Neufahrwasser	30.30	769.5	30.31	769.9	42.3	5.7	85	ESE			1		10						A. Lothes.
Posen	29.95	760.7	30.25	768.3	44.2	6.8	78	E			2		7			0.024	0.6		Dr. Magener.
Strassburg Obs., (in Alsace	29.39	746.5	29.95	760.8	40.1	4.5	80	NE			3		10			0	0	Cloudy	Dr. Schur.
Stuttgart	28.95	735.2	29.91	759.8	39.6	4.2	80	NE			1		10			0	0		Prof. Schoder.
Treves, (Trier)	29.35	745.6	29.87	758.8	40.6	4.8	79	E			3		10			0	0		Prof. Flesch.
Weissenburg, (Bavaria)	28.38	720.8	29.91	759.8	41.4	5.2	84	NE	4	2			8ck	NW	ENE	0	0		Dr. Von Bebber.
Wustrow, Naval School	30.26	768.6	30.29	769.4	42.4	5.8	96	E			3		10			0.020	0.51	Foggy	E. F. Schütz.
German Naval Series.																			

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet: Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4. Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines, Königsberg, Posen and Wustrow in cubic zolls. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.74	755.4	30.13	765.3	64.0	17.8		SW			2							Clear	Dr. J. F. J. Schmidt.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and wind-force; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.99	761.5	30.04	763.0	77.8	25.4	82	WSW	10.0?	4.5?			0			0	0	Blue sky	
Deesa	29.54	750.2	30.02	762.5	79.4	26.3	29	W					0			0	0	Blue sky	
Bombay	29.91	759.8	29.95	760.7	79.8	26.6	73	NNW	14.0	6.3			10		WNW	0	0	Overcast	
Poona	27.94	709.6	29.94	760.4	80.8	27.1	58	SW					10	S		0	0	D. clouds	
Lahore	29.33	745.0	30.11	764.8	61.6	16.4	69	Calm	0.7	0.3			3			0	0	Cloudy	
Belgaum	27.42	696.5	29.96	761.0	77.7	25.4	42	SE	1.0	0.4			1			0	0	D. clouds	
Bangalore																			
Roorkee	29.09	738.9	30.02	762.6	65.2	18.4	55	NW	0.6	0.3						0	0		
Agra	29.47	748.4	30.05	763.4	67.3	19.6	50	S								0	0		
Trichinopoly																			
Nagpur	28.94	735.1	30.00	761.9	76.6	24.8	73	E	3.4	1.5			3			0	0	D. clouds	
Madras																			
Lucknow	29.66	753.4	30.05	763.2	70.5	21.4	70	Calm	0.3	0.1			0			0	0	Blue sky	
Allahabad	29.71	754.6	30.03	762.8	64.7	18.2	58	Calm	0.5	0.2			0			0	0	Blue sky	
Patna	29.88	759.0	30.07	763.8	68.2	20.1	58	W	1.4	0.6			6	W	W	0	0	D. clouds	
Hazaribagh	27.98	710.6	30.05	763.2	66.3	19.1	47	NW	4.7	2.1			2			0	0	Blue sky	
Cuttack	29.92	760.0	30.00	762.1	80.0	26.7	65	SSE	0.6	0.3			4			0	0	D. clouds	
Calcutta (Alipore)	30.02	762.5	30.04	763.0	70.7	21.5	78	W	3.0	1.3			0			0	0	Blue sky	
Goalpara	29.92	752.4	30.02	762.6	69.8	21.0	63	E	0.8	0.4			0			0	0	Blue sky	
Chittagong	29.95	760.8	30.05	763.2	69.8	21.0	55	NNE	3.6	1.6			0			0	0	Blue sky	
Sibsagar	29.70	754.4	30.05	763.4	62.8	17.1	87	ENE	1.0	0.4			4			0	0	Blue sky	
Rangoon																			
Jubbulpore	28.64	727.6	30.04	763.1	70.0	21.1	71	NE	1.5	0.7			4	N		0	0	D. clouds	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instru-m'tal error and temperature. Inches.	Barometer. Corrected for instru-m'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 1—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	21.93	557.0	29.85	758.2	24.4	— 4.2	80	E	.....	.....	4	.....	10	SE	.....	†3.628	†600.0	.....	Ab. Dom. Mongini.
Stelvio	21.95	557.4	29.80	756.9	27.7	— 2.4	.....	ENE	.. ....	.....	2	.....	10	.....	.....	0.744	18.9	.....	Signora Ernesta Manfredi.
Udine	29.38	746.3	29.80	756.9	50.0	10.0	74	SE	3.6	1.7	.....	.....	10	.....	.....	0.780	19.8	.....	Prof. Giovanni Clodig.
Padua	29.62	752.3	29.78	755.1	49.5	9.7	87	NE	25.5	11.4	.....	.....	10	.....	.....	1.284	32.6	.....	Prof. Dott. Lorenzoni.
Vicenza	29.56	750.9	29.76	755.9	48.2	9.0	95	NNE	4.3	1.9	.....	.....	10	E	.....	1.858	47.2	.....	Conte Alm. Da Schio.
Verona	29.52	749.7	29.74	755.5	50.2	10.1	92	N	19.9	8.9	.....	.....	10	.....	.....	1.276	32.4	.....	Dott. B. Bertoncelli.
Bergamo	28.43	722.2	29.78	756.5	47.8	8.8	89	... .	.....	.....	.....	.....	10	.....	.....	1.284	32.6	.....	Prof. Trionfini Carlo.
Domodossola	28.78	731.1	29.84	757.9	43.2	6.2	92	.....	.....	.....	.....	.....	10	.....	.....	1.921	48.8	.....	Prof. Giuseppe Calza.
Milan	29.24	742.6	29.76	756.0	48.2	9.0	.....	N	.....	.....	4	.....	10	ENE	.....	0.823	20.9	.....	Ab. Gio. Capelli.
Pavia	29.42	747.3	29.78	756.3	41.7	5.4	94	W	.....	.....	2	.....	10	.....	.....	1.067	27.1	.....	Prof. Gio. Cantoni.
Moncalleri	28.89	733.9	29.80	756.8	45.0	7.2	96	NW	0.7	0.3	.....	.....	9	E	.....	1.071	27.2	.....	Prof. P. F. Denza.
Mondovi	27.87	707.9	29.83	757.6	38.1	3.4	90	SW	.....	.....	4	.....	10	.....	.....	1.117	29.9	.....	Prof. D. C. Bruno.
Porto Maurizio	29.44	747.8	29.66	753.4	57.9	14.4	86	N	.....	.....	2	.....	9	S	.....	0.287	7.3	.....	Prof. L. Vassallo.
Genoa	29.50	749.3	29.67	753.7	49.1	9.5	63	N	12.5	5.6	.....	.....	10	N	.....	1.512	38.4	.....	Prof. G. M. Garibaldi.
Piacenza	29.51	749.5	29.77	756.1	42.8	6.0	95	NW	8.7	3.9	.....	.....	10	.....	.....	1.673	42.5	.....	Dott. G. Manzi.
Parma	29.37	746.0	29.69	754.2	48.2	9.0	97	NNE	.....	.....	8	.....	10	.....	.....	1.272	32.3	.....	Prof. P. Pigorini.
Florence	29.34	745.2	29.60	751.8	53.1	11.7	74	NE	.....	.....	4	.....	10	.....	.....	0.295	7.5	.....	Cav. F. Meucci.
Leghorn	29.52	749.8	29.61	752.0	50.0	10.0	97	NE	6.9	3.1	.....	.....	10	.....	.....	0.020	0.5	.....	Prof. P. Monte.
Siena	28.46	722.9	29.69	754.0	48.4	9.1	94	NW	1.8	0.8	.....	.....	10	E	.....	0.177	4.5	.....	Prof. L. Toscani.
Urbino	28.08	713.1	29.65	753.2	47.1	8.4	99	NE	0	0	.....	.....	10	.....	.....	0.583	14.8	.....	Prof. P. Serpieri.
Pesaro	29.58	751.3	29.63	752.6	51.3	10.7	96	N	16.1	7.2	.....	.....	10	E	.....	0.134	3.4	.....	Prof. Luigi Guidi.
Ancona	29.52	749 8	29.63	752.6	54.7	12.6	82	SE	.....	.....	4	.....	7	SE	.....	0.138	3.5	.....	Prof. F. DeBosis.
Grosseto	29.60	749.3	29.61	752.2	51.6	10.9	99	ENE	.....	.....	2	.....	9	SE	.....	0.953	24.2	.....	Avv. P. Ponticelli.
Rome	29.41	747.0	29.59	751.5	53.1	11.7	80	S	8.1	3.6	.....	.....	10	.....	.....	1.535	30.0	.....	Prof. P. A. Secchi.
Naples, O. U	29.49	749.1	29.69	754.2	60.4	15.8	71	SSW	.....	.....	6	.....	10	SW	.....	0.520	13.2	.....	Prof. L. Palmieri.
Lecce	29.66	753.1	29.71	754.5	61.2	16.2	83	SW	29.8	13.3	.....	.....	9	S	.....	0.028	0.7	.....	Prof. C. De Giorgi.
Cosenza	29.88	733.5	29.78	756.3	53.2	11.8	74	SW	0	0	.....	.....	10	.....	.....	1.748	44.4	.....	Prof. F. D. Conti.
Cagliari	29.44	747.7	29.69	752.6	56.3	13.5	73	... ..	.....	.....	.....	.....	9	W	.....	0.232	5.9	.....	Prof. A. Pacinotti.
Riposto, (Sicily)	29.76	756.0	29.81	757.2	63.0	17.2	63	WSW	.....	.....	4	.....	9	ENE	.....	0	0	.....	Prof. F. Cafiero.
Palermo	29.41	746.9	29.66	753.4	57.9	14.4	64	WSW	11.9	5.3	.....	.....	10	.....	.....	0.181	4.6	.....	Prof. G. Cacciatore.
Caltanissetta	27.76	705.1	29.72	754.9	61.4	16.8	82	SW	.....	.....	4	.....	10	N	.....	1.654	42.0	.....	Prof. A. Pagani.
Syracuse	29.65	753.0	29.72	754.9	61.7	16.5	65	SSW	.....	.....	4	.....	10	WSW	.....	0.098	2.5	.....	Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.12	739.7	29.68	753.8	55.2	12.9	78	SW	9.8	4.4	.....	.....	10	.....	.....	0.516	13.1	.....	Prof. F. Brioschi.

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,543.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Siena, 348.5 m., or 1,143.3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft. †Unmelted snow.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Tokei (Yeddo)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0	Cloudy	The Observatory.
Tokei (Yeddo) University	30.00	762.0	30.10	764.6	52.5	11.4	80	E	4	1.8	.....	.....	9s	.....	.....	.....	.....	.....	Prof. P. V. Veeder.

MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Aguascallentes	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	I. N. Marin, M. D.
Córdoba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	C. Peña, M. D.
Cuernavaca	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	L. Castillo, A. E.
Guadalajara	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. L. Perez.
Guanajuato	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. V. Fernandez.
Leon	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. M. Leal.
Mexico	23.09	586.5	30.20	767.1	55.4	13.0	81	NW	0.2	0.08	.....	1c	6ks	N	S	Inap.	Inap.	Cloudy	Central Observatory.
Orizaba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	N. N.
Orizaba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	I. Orozco, M. D.
Pabellon, (Aguascalts)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. V. de Leon, M. E.
Puebla	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. B. Gonzalez.
Toluca	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. C. Velazquez.
Tlacotalpam	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. F. R. Bayly.
San Luis Potosi	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	G. Barroeta, M. D.
Vera-Cruz	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. J. Rossell.
Zacatecas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. A. Bonilla, M. E.
Puebla, (Catholic Institute)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	P. Spina. [M. M. D. D.
Morelia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Tena, F. L. Páramo

NOTE.—The elevation of Aguascallentes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,299 m., or 7,542.9 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabell m, 1,934.4 m., or 6,343.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m,, or 8,611.8 ft.; San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	30.11	764.8	30.11	764.8	44.2	6.8	.....	NNE	.....	.....	4	.....	.....	.....	.....	0	0	.....	H. v d Brink.
Groningen	30.11	764.8	30.17	766.2	44.8	7.1	.....	E	.....	.....	2	.....	.....	.....	.....	0.008	0.2	.....	
Helder	30.15	765.8	30.15	765.8	44.4	6.9	.....	NE	.....	.....	4	.....	.....	.....	.....	0	0	.....	
Hellevoetsluis	.....	.....	30.10	764.5	43.7	6.5	97	NE	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	
Utrecht	30.07	763.6	30.11	764.8	43.3	6.3	98	NE	.....	.....	3	.....	10	.....	.....	0	0	Dull	

NOTE.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	30.38	771.7	30.44	773.1	33.4	0.8	85	Calm	0	0	.....	.....	1	.....	.....	0	0	.....	
Brönö	30.26	768.5	30.30	769.5	42.8	6.0	85	S	18	8	.....	.....	0	.....	.....	0	0	.....	
Christiania	30.34	770.5	30.49	774.4	35.8	2.1	84	E	0	0	.....	.....	10	.....	.....	0.004	0.1	.....	
Tromsö	29.91	759.7	29.95	760.8	44.6	7.0	71	SW	34	15	.....	.....	10	.....	.....	0.173	4.4	Raining	

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	30.11	764.7	30.30	769.5	65.8	18.8	88	SW	13.0	5.8	.....	.....	9	.....	.....	0.118	3.0	.....	Dr. J. A. Sampaio.
Campo Major	29.06	738.0	30.10	764.4	53.6	12.0	49	NW	21.0	9.4	.....	.....	0	.....	.....	0	0	.....	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.21	767.2	30.28	769.0	69.8	21.0	58	SW	3.8	1.7	.....	.....	5	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.79	756.6	30.15	765.9	55.8	13.2	54	N	24.8	11.1	.....	.....	8	.....	.....	0.004	0.1	.....	The Staff.
Ponta Delgada, (Azores)	30.28	769.0	30.35	770.8	65.3	18.5	92	S	6.3	2.8	.....	.....	10	.....	.....	0.028	0.7	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

Naval Series. Vessels.	Sea or swell. Height scale 0–9.	Sea or swell. Direction from—	
S. S. Bartholomew Dias.	.....	.....	
S. S. India.	.....	.....	R. A. T. Pinha, Com'd't.
S. S. Mindello.	.....	.....	A. D. Pedroso, Com'd't.
S. S. Sado.	.....	.....	J. F. R. R. Bastos, Com'd't.
			A. N. P. Sampaio, Com'd't.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.83	757.7	30.27	768.8	41.4	5.2	92	E	7	3	.....	.....	10ks	.....	.....	.....	.....	.....	Astronomical Obs.
Wilna	29.97	761.2	30.41	772.5	34.9	1.6	93	Calm	0	0	.....	.....	6	.....	.....	.....	.....	.....	Astronomical Obs.
Dorpat	30.26	768.7	30.52	775.3	33.1	0.6	92	ESE	7	3	.....	.....	9n	.....	.....	.....	.....	.....	Prof. Dr. Weihrauch.
St. Petersburg	30.65	778.6	30.67	779.0	33.3	0.7	98	SSE	4	2	.....	.....	10n	.....	.....	.....	.....	.....	Central Physical Obs.
Kuopio	30.08	764.0	30.42	772.6	32.5	0.3	100	W	13	6	.....	.....	10	.....	.....	Blank	Blank	.....	Ch. Forsten.
Kieff	29.66	753.4	30.34	770.5	32.4	0.2	92	E	4	2	.....	.....	10ks	.....	.....	.....	.....	.....	Physical Cabinet.
Nikolaiev	30.18	766.5	30.25	768.3	49.1	9.5	96	NE	18	8	.....	.....	10n	.....	.....	.....	.....	.....	Kurdakof.
Kertch	30.19	766.7	30.21	767.2	51.3	10.7	94	E	7	3	.....	.....	10	.....	.....	.....	.....	Foggy	Lagorio.
Moscow	30.07	763.7	30.67	778.9	20.5	— 6.4	90	S	7	3	.....	.....	8ks	.....	.....	.....	.....	.....	Meteorological Obs.
Lugan	30.14	765.5	30.35	770.9	34.9	1.6	59	E	18	8	.....	.....	0	.....	.....	.....	.....	.....	Meteorological Obs.
Archangel	30.28	769.2	30.30	769.7	31.6	— 0.2	96	SW	22	10	.....	.....	10	.....	.....	.....	.....	.....	Ogorodnikof.
Tiflis	28.82	731.9	30.26	768.6	49.3	9.6	71	SE	9	4	.....	.....	6c	.....	.....	.....	.....	.....	Physical Observatory.
Astrakhan	30.54	775.7	30.46	773.6	34.2	1.2	79	Calm	0	0	.....	.....	9ks	.....	.....	.....	.....	.....	Sebastianof.
Kasan	30.37	771.4	30.67	778.9	19.0	— 7.2	81	Calm	0	0	.....	.....	3ck	.....	.....	.....	.....	.....	Physical Cabinet.
Orenburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Tschernischet.
Ekaterinburg	29.67	753.6	30.73	780.6	6.3	—14.3	100	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Meteorological Obs.
Nukuss	30.10	764.4	30.34	770.6	33.8	1.0	85	ENE	4	2	.....	.....	10kn	.....	.....	.....	.....	.....	
Kasaly	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Bobrof.
Tashkend	28.65	727.7	30.42	772.6	43.9	6.6	98	Calm	0	0	.....	.....	10n	.....	.....	.....	.....	.....	Michelson.
Barnaul	29.67	753.5	30.24	768.1	9.9	—12.3	89	W	13	6	.....	.....	5	.....	.....	.....	.....	.....	Meteorological Obs.
Yeniseisk	29.53	750.0	29.88	758.9	8.6	—13.0	79	E	2	1	.....	.....	0	.....	.....	Blank	Blank	.....	Marks.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Usolzef.
Oorga	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Mossin.
Krotkowo	30.16	766.0	30.67	779.0	18.9	— 7.3	94	NE	2	1	.....	.....	10	.....	.....	.....	.....	Light fog.....	Cand. Fatjanow.
Peking, (China)	30.39	772.0	30.54	775.6	24.4	— 4.2	64	N	13	6	.....	.....	0	.....	.....	.....	.....	.....	Physical Observatory
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Vladivostock	30.20	767.0	30.24	768.0	18.9	— 7.3	92	NW	4	2	.....	.....	0	.....	.....	.....	.....	.....	
Nikolaievsk, on the Amoor	.....	.....	.....	.....	0.1	—17.7	78	W	2	1	.....	.....	0	.....	.....	.....	.....	.....	

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Viennasymbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft.

SPANISH SERIES.

Furnished by the cooperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Rave, Director.
Bilbao, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Manuel de Naveran
Burgos, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Domingo Martin y Perez.
Madrid, Royal Observatory	27.76	705.0	30.03	762.7	47.1	8.4	47	N	28.3	12.67	.....	0	3	.....	.....	Inap.	Inap.	Cloudy.....	The Staff.
Murcia, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Olayo Diaz, Director.
Santiago, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	30.15	765.9	30.22	767.6	67.2	19.6	84	Calm	0	0	.....	9ck	3k	W	E	0	0	Cloudy.....	Benito Vines, S. J.
San Fernando, Naval Obs'y	30.01	762.2	30.11	764.7	54.0	12.2	71	NW	7.3	3.3	.....	0	5	.....	NW	0	0	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.	.....	.....	29.98	761.5	80.2	26.8	80	NE	5.5	2.46	.....	2c	2k	NE	NE	0	0	Clear.....	Leonardo de Tejeda, Chief of Engineers.

Note.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the cöoperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	30.31	769.9	30.35	770.9	30.2	— 1.0	.....	Calm	.....	.....	0	.....	0	.....	.....	0.079	2.0	.....	
Umea	30.38	771.7	30.43	773.0	36.3	2.4	96	Calm	.....	.....	0	.....	10	.....	.....	0	0	.....	
Hernosand	30.10	764.5	30.15	765.8	29.8	— 1.2	96	.....	.....	.....	.....	.....	5	.....	.....	0.012	0.3	.....	
Stockholm	30.27	768.8	30.45	773.3	39.2	4.0	93	Calm	.....	.....	0	.....	10	.....	.....	0.020	0.5	.....	
Wisby	30.27	768.8	30.33	770.3	40.6	4.8	90	E	.....	.....	4	.....	10	.....	.....	0.051	1.3	.....	
Sub-Series.																			
Upsala	30.39	771.8	30.46	773.7	39.4	4.1	96	E	0	0	.....	.....	10	.....	.....	0.011	0.27	Foggy	Dr. Hildebrandsson.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.44	722.4	29 91	759.8	33.8	3.8	75	NE	.....	.....	2	.....	10	.....	.....	0	0	Covered	The Observatory.
Zurich	28.24	717.2	29.94	760.4	35.6	2.0	91	N	.....	.....	1	.....	10	.....	.....	0.020	0.5	Covered	The Observatory.
.....																			
.....																			
.....																			

Note.—For Geneva the corresponding departures from the normal values are: Barometer, —4.6 mm; Thermometer, 0.0 cent.; Relative Humidity, —4 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	30.21	767.4	58.8	14.9	77	SE	0	0	.....	.....	7	.....	SW	0	0	.....	The Observatory.
Fao, (Persian Gulf)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salonica	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	B. Stéfanidès.
Valona	.....	.....	29.89	759.1	66.7	19.3	.....	SE	.....	.....	2	.....	10	.....	.....	0	0	Covered	A. Bertrand.
Varna	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Imperial Observatory.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	30.03	762.7	30.15	765.7	69.4	20.8	60	NE	.....	.....	1	.....	7c	.....	.....	0	0	D. clouds.....	Prof. C. V. A. Van Dyck

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	30.05	763.3	30.12	765.0	17.4	— 8.1	87	SW	5.0	2.2	.....	10	.....	.....	.....	.....	0	.....	Hon. J. Ferguson.
Brockville, Ontario	29.90	759.4	30.32	767.6	28	— 2.2	.....	SW	10	4.5	.....	.....	10s	.....	W	0	0	Cloudy.....	W. R. Bigg.
*Chatham, N. B	30.14	765.5	30.21	767.3	9	—12.8	89	SW	9	4.0	.....	5c	0	SW	.....	0	0	Fair.....	G. A. Blair.
Charlottetown, P. E. Island.	30.24	768.1	30.28	769.1	22	— 5.6	70	W	4	1.8	.....	0	0	.....	.....	0	0	Clear.	H. J. Cundall, C. E.
Cornwall, Ontario	29.96	761.0	30.16	766.1	27.1	— 2.7	87	SW	.....	.....	6	.....	10s	.....	.....	0	0	Stormy.....	James Smith, M. A.
Dalhousie, N. B	30.05	763.3	30.08	764.0	16.5	— 8.6	92	W	.....	.....	1	.....	.....	.....	.....	0	0	Gloomy	H. A. Johnson.
Esquimault, B. C	30.02	762.5	30.07	763.8	38.6	3.7	100	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear.....	W. H. Bevis.
*Father Point, Quebec	29.99	761.7	30.01	762.2	22	— 5.6	86	S	10	4.5	.....	Haze	5s	Calm	W	0	0	Cloudy.....	J. McWilliams.
Fredericton, N. B	30.28	769.1	30.34	770.6	0.1	—12.8	98	Calm	0	0	.....	1c	.....	.....	.....	0	0	Clear	Prof. Harrison.
*Fort Garry, Manitoba	28.91	734.3	29.79	756.7	15	— 9.4	91	SW	6	2.7	.....	0	2ks	.....	SW	0	0	Fair.....	James Stewart.
Goderich, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	H. J. Strang, M. A.
Granton, Ontario	29.02	737.1	30.18	766.6	26.0	— 3.3	85	SW	.....	.....	2	1cs	0	N	.....	0	0	Clear.....	James Grant.
*Halifax, N. S	30.21	767.3	30.36	771.1	18	— 7.8	82	W	7	3.1	.....	0	0	.....	.....	0	0	Clear.....	F. Allison, M. A.
Hamilton, Ontario	29.74	755.4	30.13	765.3	32.2	0.1	83	NW	.....	.....	3	.....	.....	.....	.....	0	0	Clear.....	Geo. Dickson, M. A
Heart's Content, N. F	29.16	740.7	29.18	741.2	30	— 1.1	67	W	.....	.....	4	2k	4ks	W	.....	0	0	Cloudy.....	E. Weedon.
*Kingston, Ontario	29.89	759.2	30.24	768.1	33	0.6	95	SW	11	4.9	.....	.....	10ks	.....	SW	0	0	Cloudy.....	S. Woods, M. A.
Little Glace Bay, N. S	30.26	768.6	30.30	769.6	22.2	— 5.4	.....	W	5	2.2	.....	2k	.....	W	.....	0	0	Fair	C. H. Rigby.
*Montreal, Quebec	29.96	761.0	30.17	766.3	25	— 3.9	82	SW	16	7.2	.....	.....	10n	.....	.....	Inap.	Inap.	Light snow.	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.94	745.2	30.06	763.5	33	0.6	80	SW	.....	.....	.....	5k	5ks	SW	SW	Inap.	Inap.	Cloudy.....	Rev. R. Mosley.
Peterboro, Ontario	29.37	746.0	30.16	766.1	31.7	— 0.2	65	SW	.....	.....	3	0	0	.....	.....	0	0	.....	J. F. Jeffers, B. A.
Port Dover, Ontario	29.51	749.5	30.22	767.6	33	0.6	89	S	23	10.3	.....	10k	0	SW	.....	0	0	Fair.....	H. Morgan.
Port Hastings, N. S	30.28	769 1	30.33	770.4	35.3	1.8	.....	W	4	1.8	.....	.....	.....	.....	.....	0	0	Fine	Peter Grant.
Port Stanley, Ontario	29.54	750 3	30.22	767.6	35	1.7	75	SW	34	15.2	.....	2k	0	SW	.....	0	0	Clear.	M. Payne.
*Quebec, Quebec	29.85	758.2	30.19	766.8	22	— 5.6	72	W	3	1.3	.....	.....	10n	.....	W	0	0	Cloudy.....	Capt. Ashe, R. N
*Rockliffe, Ontario	29.54	750.3	30.02	762.5	31	— 0.6	93	W	3	1.3	.....	.....	10s	.....	W	0	0	Cloudy.....	W. H. McIntyre.
St. John, N. B	30.18	766.6	30.36	771.1	14	—10.0	81	Calm	0	0	.....	7c	0	.....	.....	0	0	Fair	G. Murdock, C. E.
*Saugeen, Ontario	29.34	745.2	30.07	763.8	32	0.0	100	SW	12	5.4	.....	5cs	0	.....	.....	0	0	Fair	K. Stewart.
Stayner, Ontario	29.32	744.7	30.13	765.3	28	— 2.2	78	SW	18	8.0	.....	5c	0	NW	.....	0	0	Fair	R. J. Cole.
Stratford, Ontario	28.84	732.5	30.19	766.8	25.2	— 3.8	83	SW	14.0	6.3	.....	0	.....	.....	.....	0	0	Fine.....	C. J. MacGregor, M. A.
*Sydney, C. B	30.29	769.4	30.32	770.1	22	— 5.6	81	SW	9	4.0	.....	0	0	.....	.....	0	0	Clear.....	T. C. Hill.
*Toronto, Ontario	29.80	756.9	30.20	767.1	32	0.0	80	SW	16	7.2	.....	5c	2ks	Calm	SW	0	0	Cloudy.....	Magnetic Observatory.
Windsor, N. S	30.25	768.8	30.36	770.9	17.5	— 8.0	92	W	7	3.1	.....	0	1k	.....	.....	0	0	Clear.....	Prof. John E. Oram.
Woodstock, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Montgomery.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	26.0	— 3.3	.....	S	.....	.....	.....	0	0	.....	.....	0	0	Fair.....	John Delany
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

By authority of the **SECRETARY OF WAR.** UNITED STATES SERIES.

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	30.16	766.1	30.41	772.4	21	— 6.1	70	SE	7	3.1	.....	0	5s	.....	S	0	0	Fair	
Alpena, Michigan	29.34	745.2	30.01	762.2	27	— 2.8	77	SW	12	5.4	.....	0	5s	.....	SW	0	0	Fair	
Atlantic City, New Jersey	30.52	775.2	30.54	775.7	26	— 3.3	67	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Augusta, Georgia	30.37	771.4	30.57	776.5	29	— 1.7	83	Calm	0	0	.....	0	Sm'e	.....	Calm	0	0	Smoky	
Baltimore, Maryland	30.49	774.4	30.54	775.7	28	— 2.2	77	N	2	0.9	.....	2cs	Sm'e	Calm	Calm	0	0	Fair	
Barnegat, New Jersey	30.50	774.7	30.52	775.2	27	— 2.8	77	W	7	3.1	.....	0	0	.....	.....	0	0	Clear	
Bismarck, Dakota	27.95	709.9	29.71	754.6	17	— 8.3	67	SE	4	1.8	.....	.....	10s	.....	Calm	0	0	Cloudy	
Boise City, Idaho	27.16	689.8	29.82	757.4	32	0.0	89	Calm	0	0	.....	.....	10n	.....	Calm	0.01	0.3	Light snow	
Boston, Massachusetts	30.27	768.8	30.44	773.2	24	— 4.4	61	W	8	3.6	.....	7c	Sm'e	W	.....	0	0	Fair	
Brackettville, Texas	28.69	728.7	29.72	754.9	50	10.0	86	Calm	0	0	.....	.....	10n	.....	Calm	0.11	2.8	Light rain	
Breckenridge, Minnesota	28.84	732.5	29.91	759.7	10	—12.2	100	S	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Brownsville, Texas	29.93	760.2	30.00	762.0	60	15.6	88	Calm	0	0	.....	.....	10s	.....	Calm	0.41	10.4	Cloudy	
Buffalo, New York	29.50	749.3	30.24	768.1	28	— 2.2	77	S	16	7.2	.....	0	2s	.....	SW	0.01	0.3	Fair	
Burkes, Arizona	.....	.....	.....	.....	30	— 1.1	57	Calm	..	.....	.....	0	0	.....	.....	0	0	Clear	
Burlington, Vermont	30.01	762.2	30.29	769.4	27	— 2.8	77	S	15	6.7	.....	.....	10s	.....	S	0	0	Cloudy	
Cairo, Illinois	29.95	760.7	30.37	771.4	33	0.6	70	S	8	3.6	.....	1cs	0	Calm	.....	0	0	Clear	
Camp Grant, Arizona	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Camp Verde, Arizona	26.80	680.7	30.29	769.4	32	0.0	89	Calm	.....	.....	.....	.....	10s	.....	.....	0.16	4.1	Cloudy	
Campo, California	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Cape Hatteras, N. Carolina	30.53	775.4	30.54	775.7	39	3.9	63	N	10	4.5	.....	2k	0	N	.....	0	0	Fair	
Cape Henry, Virginia	30.55	776.0	30.58	776.7	31	— 0.6	79	N	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Cape Lookout, N. Carolina	30.55	776.0	30.56	776.2	35	1.7	79	N	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Cape May, New Jersey	30.50	774.7	30.54	775.7	35	1.7	69	W	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Charleston, South Carolina	30.46	773.7	30.53	775.4	40	4.4	64	N	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Cheyenne, Wyoming	23.76	603.5	29.70	754.4	31	— 0.6	79	W	3	1.3	.....	.....	10s	.....	Calm	0	0	Cloudy	
Chicago, Illinois	29.40	746.7	30.12	765.0	32	0.0	79	SW	6	2.7	.....	0	Fog	.....	Calm	0	0	Clear	
Cincinnati, Ohio	29.67	753.6	30.36	771.1	28	— 2.2	77	SE	1	0.4	.....	0	Fg.;sm.	.....	SE	0	0	Foggy	
Cleveland, Ohio	29.54	750.3	30.31	769.9	28	— 2.2	67	S	12	5.4	.....	.....	Haze	.....	Calm	0	0	Hazy	
Concho, Texas	27.98	710.7	29.65	753.1	50	10.0	85	W	12	5.4	.....	8cs	0	W	.....	0	0	Cloudy	
Corsicana, Texas	29.55	750.6	30.03	762.7	45	7.2	85	SE	14	6.3	.....	.....	10s	.....	Calm	0	0	Cloudy	
Davenport, Iowa	29.43	747.5	30.09	764.3	32	0.0	68	SW	10	4.5	.....	Haze	0	Calm	.....	0	0	Fair	
Denison, Texas	29.19	741.4	30.01	762.2	42	5.6	66	SE	15	6.7	.....	.....	10ks	.....	SE	0	0	Threatening	
Denver, Colorado	24.52	622.8	29.74	755.4	30	— 1.1	68	N	4	1.8	.....	0	5s	.....	Calm	0	0	Fair	
Detroit, Michigan	29.49	749.0	30.20	767.1	28	— 2.2	77	SW	14	6.3	.....	0	0	.....	.....	0	0	Clear	
Dodge City, Kansas	27.19	690.6	29.49	749.0	38	3.3	100	S	14	6.3	.....	.....	10s	.....	Calm	0.01	0.3	Threatening	
Dubuque, Iowa	29.31	744.5	30.04	763.0	29	— 1.7	78	S	1	0.4	.....	0	Haze	.....	.....	0	0	Clear	
Duluth, Minnesota	29.21	741.9	29.92	760.0	21	— 6.1	78	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Eagle Pass, Texas	29.08	738.6	29.83	757.7	50	10.0	93	Calm	0	0	.....	.....	10s; fg	.....	.....	0.09	2.3	Cloudy	
Eastport, Maine	30.27	768.8	30.34	770.6	21	— 6.1	71	W	4	1.8	.....	5c	Haze	Calm	Calm	0	0	Fair	
Erie, Pennsylvania	29.50	749.3	30.26	768.6	28	— 2.2	67	S	18	8.0	.....	0	0	.....	.....	0	0	Clear	
Escanaba, Michigan	29.30	744.2	29.98	761 5	26	— 3.3	88	Calm	0	0	.....	.....	10s	.....	Calm	0	0	Cloudy	
Florence, Arizona	28.41	721.6	30.03	762.7	40	4.4	32	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Fort Bayard, New Mexico	23.88	606.5	29.88	758.9	29	— 1.7	59	NW	12	5.4	.....	0	8s	.....	NW	0.02	0.5	Light snow	
Fort Craig, New Mexico	25.34	643.6	.....	.....	31	— 0.6	79	NW	6	2.7	.....	0	2s	.....	NW	0	0	Fair	
Fort Gibson, Indian Ter	29.50	749.3	30.05	763.3	40	4.4	40	SE	14	6.3	.....	.....	10s	.....	SW	0	0	Cloudy	
Fort Griffin, Texas	28.61	726.7	29.89	759.2	45	7.2	100	E	12	5.4	.....	.....	10n	.....	Calm	0.01	0.3	Light rain	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	28.69	728.7	29.82	757.4	39	3.9	91	E	8	3.6	.....	.....	10n	.....	W	0.43	10.9	Light rain	
Galveston, Texas	30.03	762.7	30.07	763.8	59	15.0	100	SE	10	4.5	.....	.....	10s	.....	Calm	0.23	5.8	Threatening	
Grand Haven, Michigan	29.41	747.0	30.08	764.0	39	3.9	64	W	16	7.2	.....	0	0	.....	.....	0	0	Clear	
Indianapolis, Indiana	29.46	748.3	30.29	769.4	29	— 1.7	78	S	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Indianola, Texas	29.98	761.5	30.00	762.0	65	18.3	94	SE	18	8.0	.....	.....	10n	.....	SE	0.14	3.6	Light rain	
Jacksboro, Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Jacksonville, Florida	30.41	772.4	30.43	772.9	41	5.0	82	N	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Keokuk, Iowa	29.44	747.8	30.08	764.0	35	1.7	70	SW	12	5.4	.....	0	4s	.....	Calm	0	0	Fair	
Key West, Florida	30.22	767.6	30.26	768.6	62.0	16.7	80	NE	12	5.4	.....	2ck	2s	W	Calm	0	0	Fair	
Kityhawk, North Carolina	30.54	775.7	30.57	776.5	33	0.6	69	N	10	4.5	.....	0	0	.....	.....	Inap.	Inap.	Clear	
Knoxville, Tennessee	29.47	748.5	30.57	776.5	23	— 5.0	73	Calm	0	0	.....	0	Sm'e	.....	.....	0	0	Smoky	
La Crosse, Wisconsin	29.22	742.2	29.99	761.7	28	— 2.2	77	S	4	1.8	.....	0	0	.....	.....	0	0	Clear	
La Mesilla, New Mexico	25.97	659.6	30.12	765.0	34	1.1	71	SW	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Laredo, Texas	.....	.....	.....	.....	52	11.1	100	Calm	0	0	.....	.....	10n	.....	Calm	0.29	7.4	Light rain	
Leavenworth, Kansas	29.14	740.1	30.00	762.0	37	2.8	62	S	6	2.7	.....	8cs	0	Calm	.....	0	0	Cloudy	
Los Angeles, California	29.74	755.4	30.09	764.3	46	7.8	47	N	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Louisville, Kentucky	29.78	756.4	30.38	771.6	33	0.6	69	SE	6	2.7	.....	0	Fog	.....	Calm	0	0	Clear	
Lynchburg, Virginia	29.81	757.2	30.54	775.7	30	— 1.1	78	Calm	0	0	.....	0	Haze	.....	Calm	0	0	Hazy	
Maricopa Wells, Arizona	.....	.....	.....	.....	25	— 3.9	38	N	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Marquette, Michigan	29.19	741.4	29.92	760.0	29	— 1.7	67	SW	4	1.8	.....	.....	10s	.....	Calm	0	0	Cloudy	
Mason, Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Memphis, Tennessee	30.05	762.7	30.38	771.6	30	— 1.1	67	SE	2	0.9	.....	0	Sm'e	.....	NW	0	0	Clear	
Milwaukee, Wisconsin	29.33	745.0	30.05	763.3	27	— 2.8	77	W	10	4.5	.....	0	Sm'e	.....	.....	0	0	Clear	
Mobile, Alabama	30.33	770.4	30.38	771.6	37	2.8	62	E	4	1.8	.....	1ck	0	W	.....	0	0	Clear	
Montgomery, Alabama	30.22	767.6	30.47	773.9	32.5	0.3	69	E	12	5.4	.....	0	Sm'e	.....	E	0	0	Clear	
Morgantown, West Virginia	29.32	744.7	30.47	773.9	22	— 5.6	58	E	1	0.4	.....	2c	Sm'e	W	.....	0	0	Fair	
Mt. Washington, N. H.	23.66	601.0	30.02	762.5	6	—14.4	76	NW	72	32.2	.....	5c	0	SE	.....	0	0	Fair	
Nashville, Tennessee	29.86	758.4	30.44	773.2	24	— 4.4	87	Calm	0	0	.....	0	Haze	.....	Calm	0	0	Clear	
New Haven, Connecticut	30.36	771.1	30.49	774.4	27	— 2.8	88	W	2	0.9	.....	5c	0	Calm	.....	0	0	Fair	
New London, Connecticut	30.44	773.2	30.49	774.4	25	— 3.9	75	Calm	0	0	.....	1cs	1s; hz	E	Calm; W	0	0	Clear	
New Orleans, Louisiana	30.23	767.8	30.30	769.6	43	6.1	67	E	12	5.4	.....	2ck	2ks	W	S	0	0	Fair	
Newport, Rhode Island	30.43	772.9	30.48	774.2	29	— 1.7	67	W	16	7.2	.....	5c	0	W	.....	0	0	Fair	
New York, New York	30.32	770.1	30.51	774.9	28	— 2.2	67	W	17	7.6	.....	2cs	0	W	.....	0	0	Fair	
Norfolk, Virginia	30.54	775.7	30.60	777.2	31	— 0.6	49	N	1	0.4	.....	0	0	.....	.....	0	0	Clear	
North Platte, Nebraska	26.85	682.0	29.48	748.8	28	— 2.2	83	E	5	2.2	.....	.....	10s	.....	Calm	0	0	Cloudy	
Olympia, Washington Ter.	30.07	763.8	30.11	764.8	38	3.3	90	SW	6	2.7	.....	0	1s	.....	Calm	0.34	8.6	Clear	
Omaha, Nebraska	28.82	732.0	29.94	760.5	38	3.3	88	S	3	1.3	.....	2c	2s	Calm	Calm	0	0	Fair	
Oswego, New York	29.94	760.5	30.28	769.1	31	— 0.6	68	S	8	3.6	.....	10cs	0	W	.....	Inap.	Inap.	Cloudy	
Pembina, Dakota	28.96	735.6	29.84	757.9	13	—10.6	81	S	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Philadelphia, Pennsylvania	30.49	774.4	30.54	775.7	30	— 1.1	89	SW	6	2.7	.....	2c	Sm'e	Calm	Calm	0	0	Smoky	
Phœnix, Arizona	.....	.....	.....	.....	33	0.6	70	E	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Pike's Peak, Colorado	17.36	440.9	29.57	751.1	3	—16.1	100	N	9	4.0	.....	.....	10n	.....	Calm	Inap.	Inap.	Light snow	
Pioche, Nevada	23.99	609.3	29.76	755.9	25	— 3.9	62	NW	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Pittsburg, Pennsylvania	29.54	750.3	30.41	772.4	25	— 3.9	87	S	3	1.3	.....	2c	0	NW	.....	0	0	Fair	
Port Huron, Michigan	29.47	748.5	30.18	766.6	28	— 2.2	77	SW	14	6.3	.....	5ck	0	Calm	.....	0	0	Fair	
Portland, Maine	30.32	770.1	30.37	771.4	19	— 7.2	69	W	2	0.9	.....	2k	Haze	NW	.....	0	0	Fair	
Portland, Oregon	30.16	766.1	30.26	768.6	42	5.6	83	Calm	0	0	.....	0	2s	.....	Calm	0.14	3.6	Clear	
Prescott, Arizona	24.75	628.6	30.11	764.8	22	— 5.6	45	N	.....	.....	.....	0	0	.....	.....	0.05	1.3	Clear	
Punta Rassa, Florida	30.31	769.9	30.32	770.1	53	11.7	78	NE	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Red Bluff, California	29.84	757.9	30.22	767.6	39	3.9	86	N	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Rochester, New York	29.58	751.3	30.23	767.8	28	— 2.2	88	SW	10	4.5	.....	.....	10s	.....	W	0	0	Cloudy	

UNITED STATES SERIES.—Continued.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Roseburg, Oregon	29.73	755 1	30.32	770.1	40	4.4	100	Calm	0	0	.....	.....	Fog	.....	Calm	0.07	1.8	Foggy	
Sacramento, California	30.09	764.3	30.18	766.6	41	5.0	83	SE	5	2.2	.....	1c	0	NW	.....	0	0	Clear.	
St. Louis, Missouri	29.62	752.3	30.23	767.8	30	—1.1	78	E	12	5.4	.....	0	5s	.....	Calm	0	0	Fair	
St. Marks, Florida	30.40	772.1	30.41	772.4	37	2.8	71	NE	10	4.5	.....	0	0	.....	.....	0	0	Clear.	
St. Paul, Minnesota	29.05	737.9	29.93	760.2	19	—7.2	84	Calm	0	0	.....	0	Fog	.....	.....	0	0	Clear.	
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salt Lake City, Utah	25.62	650.7	29.95	760.7	28	—2.2	77	E	4	1.8	.....	.....	10s	.....	Calm	0	0	Cloudy	
San Antonio, Texas	29.21	741.9	29.80	756.9	55	12.8	100	E	4	1.8	.....	.....	10n	.....	Calm	0.35	8.9	Light rain	
San Diego, California	30.07	763.8	30.15	765.8	46	7.8	61	NE	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Sandusky, Ohio	29.56	750.8	30.28	769.1	30	—1.1	78	SW	18	8.0	.....	Haze	1s	Calm	Calm	0	0	Fair	
Sandy Hook, New Jersey	30.48	774.2	30.50	774.7	34	1.1	90	SW	18	8.0	.....	2ck	Sm'e	W	.....	0	0	Fair	
San Francisco, California	30.11	764.8	30.18	766.6	48	8.9	93	N	4	1.8	.....	0	1s	.....	Calm	0	0	Clear	
Santa Fé, New Mexico	22.9!	582.7	29.48	748.8	23	—5.0	100	SW	6	2.7	.....	.....	10n	.....	Calm	0.12	3.0	Light snow.	
Savannah, Georgia	30.42	772.7	30.53	775.4	35	1.7	70	NE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Shreveport, Louisiana	29.98	761.5	30.20	767.1	44	6.7	52	SE	8	3.6	.....	.....	10s	.....	E	0	0	Cloudy	
Smithville, North Carolina	30.52	775.2	30.56	776.2	32	0.0	69	N	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Springfield, Massachusetts	30.24	768.1	30.38	771.6	20	—6.7	70	SW	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Stockton, Texas	29 87	682.5	29.87	758.7	37	2.8	71	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Thatcher's Island, Mass	30.37	771.4	30.43	772.9	23	—5.0	60	W	4	1.8	.....	2cs	0	W	.....	0	0	Fair	
Toledo, Ohio	29.51	749.5	30.23	767.8	30	—1.1	68	S	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Tucson, Arizona	27.61	701.3	30.16	766.1	36	2.2	37	NW	.....	.....	.....	0	0	.....	.....	0.04	1.0	Clear	
Tybee Island, Georgia	30.48	774.2	30.51	774.9	42	5.6	83	NE	18	8.0	.....	0	0	.....	.....	0	0	Clear	
Umatilla, Oregon	29.75	755.6	.....	.....	39	3.9	71	W	16	7.2	.....	0	2s	.....	W	0	0	Clear	
Vicksburg, Mississippi	30.06	763.5	30.34	770.6	34	1.1	61	SE	14	6.3	.....	2ck	0	SE	.....	0	0	Clear	
Virginia City, Montana	23.98	609.1	29.46	748 3	27	—2.8	88	S	12	5.4	.....	.....	10s	.....	Calm	0	0	Threatening	
Visalia, California	29.88	757.7	30.22	767.6	37	2.8	90	Calm	0	0	.....	1c	0	Calm	.....	0	0	Clear	
Washington, D. C	30.42	772.7	30.54	775.7	25	—3.9	81	W	2	0.9	.....	2c	Sm'e	W	.....	0	0	Smoky	
Wickenburg, Arizona	.....	.....	.....	.....	22	—5.6	5	W	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Wilmington, N. Carolina	30.48	774.2	30.57	776.5	31	—0.6	68	NE	5	2.2	.....	0	Sm'e	.....	Calm	0	0	Clear	
Winnemucca, Nevada	25.65	651.5	30.01	762.2	30	—1.1	78	SW	9	4.0	.....	0	5s	.....	SW	0	0	Fair	
Wood's Holl, Mass	30.44	773.2	30.49	774.4	33	0.6	79	NE	8	3.6	.....	Haze	0	.....	.....	0	0	Clear	
Yankton, Dakota	28.63	727.2	30.01	762.2	15	— 9.4	82	N	1	0.4	.....	2cs	0	NW	.....	0	0	Fair	
Yuma, Arizona	29.94	760.5	30.11	764.8	39	3.9	67	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Sub-Series.																			
York Factory, B. A	29.71	754.6	29.77	756.1	10.0	—12.2	100	N	7	3.1	.....	.....	10n	.....	.....	0.50	12.7	Snowing	J. Fortescue, W. Wood.
Havana, Cuba, W. I	30.13	765.3	30.15	765.8	69	20.6	79	Calm	0	0	.....	8ck	4ks	W	E	0	0	Cloudy	Chas. Hasselbrink.
Kingston, Jamaica, W. I	30.18	766.6	30.19	766.8	78	25.6	90	Calm	0	0	.....	2c	2n	Calm	Calm	1.11	28.2	.....	James Gall.
Navassa, W. I	29.95	760.7	30.03	762.7	79	26.1	.....	NE	30	13.4	.....	.....	.....	.....	.....	0	0	Cloudy	F. M Everett.
St. Thomas, W. I	.....	.....	.....	.....	77	25.0	86	NE	4	1.8	.....	2c	2n	E	.....	0.1	3.	Clearing	G. O. Gellich.
Paramaribo, D. Guiana, S. A	.....	.....	30.00	762.0	84	28.9	79	E	.....	.....	2	5k	7ks	E	.....	0.740	18.80	⅝ Cloudy	C. J. Hering.
Batavia, Dutch Guiana, S. A	30.03	762.8	30.04	763.0	85.6	29.8	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.807	20.25	Misty	Dr. H. Groot.
Medellin, Colombia, S. A	25.24	641.1	.....	.....	66.5	19.2	84	SW	.....	.....	1	.....	9n;s	.....	.....	0.17	4.3	Cloudy	Thomas Herran.
Honolulu, Oahu, H. I	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Daniel Smith.
Makawao, Maui, H. I	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. L. Clarke.

Note.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,802 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573,4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.0 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,916.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Ploche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,460 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Ploche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er. 0—10.	Clouds. Amount. Low'r. 0—10.	Clouds. Direction. Up'er. From—	Clouds. Direction. Low'r. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard Mare Island, Cal.	30.14	765.5	45	7.2	41	5.0	100	NNW	2	0.9	.....	.....	6ks	.....	Calm	0	0	.....	.....	Misty.....	
Navy Yard, Pensacola, Fla.	30.42	727.7	.....	.....	45	7.2	??	NE	10	4.5	.....	.....	7	.....	SE	0.11	2.8	.....	.....	D. clouds.....	
Navy Yard, Portsmouth, N.H	30.30	769.6	52	11.1	18	— 7.8	84	WSW	1	0.4	.....	.....	.....	.....	.....	0	0	.....	.....	Clear.....	
Naval Hospital, Yokohama, Japan.....	30.05	763.3	61	16.1	53.5	11.9	86	ENE	.....	.....	3	.....	8ks	.....	SW	0	0	.....	.....	Cloudy.....	
Adams. Mayne Harbor, Chili.....	29.57	751.1	48	8.9	48	8.9	78	Var.	.....	.....	1	.....	10	.....	SW	Heavy	Heavy	None	.....	Raining.....	
Alert, Yokohama, Japan.....	30.15	765.8	.....	.....	60	15.6	76	ENE	.....	.....	3	.....	9	.....	N&E	.....	.....	Smooth	.....	D. clouds....	
Alliance, Constantinople, Turkey.	30.30	769.6	70	21.1	61	16.1	71	Calm	.....	.....	0	.....	4	.....	Calm	.....	.....	.....	.....	Pleasant.....	
Ashuelot. Shanghai, China.....	30.36	771.1	50	10.0	46	7.8	77	N	.....	.....	2	.....	1	.....	.....	.....	.....	.....	.....	D. clouds.....	
Canonicus, New Orleans, La.....	30.20	767.1	38	3.3	43	6.1	100	E	.....	.....	2	.....	6	.....	E	.....	.....	.....	.....	Cloudy.....	
Colorado, New York, N. Y.....	30.47	773.9	31	—0.6	31	— 0.6	??	SW	9	4.0	.....	.....	2	.....	wsw	0	0	.....	.....	Fair	
Despatch, Constantinople, Turkey.	30.29	769.4	64	17.8	59	15.0	82	SE	.....	.....	0–1	.....	7	.....	SW	.....	.....	.....	.....	Misty.	
Essex, Libreville, Lower Guinea.	29.85	758.2	84	28.9	86	30.0	68	W	.....	.....	3	.....	10	.....	E	.....	.....	Smooth	W	D. clouds.....	
Franklin, Norfolk, Va.....	30.63	778.0	34	1.1	33	0.6	70	SW	.....	.....	1	.....	9?	.....	SW	0	0	.....	.....	Clear	
Guard, Lisbon, Portugal.....	30.12	765.0	61	16.1	62	16.7	61	N	.....	.....	3–5	.....	5	.....	N	.....	.....	.....	.....	Squally	
Lackawana, Mare Island, Cal.....	30.21	767.3	.....	.....	50	10.0	72	Calm	.....	.....	0	.....	0	.....	.....	.....	.....	.....	.....	Foggy	
Marion, N. 37° 00,′ E. 23° 38′.....	30.03	762.7	66	18.9	65	18.3	84	S	.....	.....	2	.....	8	.....	NW	0	0	Smooth	.....	D. clouds.....	
Michigan, Erie, Pa.....	29.70	754.4	52	11.1	27	— 2.8	64	WSW	.....	.....	1	.....	0	.....	.....	.....	.....	.....	.....	Clear.....	
Monocacy, Nagasaki, Japan.....	30.11	764.8	60	15.6	46	7.8	84	NE	.....	.....	0–1	.....	1	.....	NE	.....	.....	.....	.....	D. clouds.....	
Monongahela, Suez Canal.....	30.13	765.3	77	25.0	77	25.0	86	N	.....	.....	2	.....	cs	.....	.....	.....	.....	.....	.....	D. clouds.....	
New Hampshire, Port Royal, S.C.....	30.62	777.7	.....	.....	40	4.4	73	NNE	15	6.7	.....	.....	.....	.....	.....	0	0	.....	.....	Blue sky.....	
Omaha, Callao, Peru.....	30.04	763.0	74	23.3	71	21.7	90	SE	2	0.9	.....	.....	10	.....	S	0	0	Smooth	.....	Cloudy.....	
Onward, Callao, Peru.....	30.04†	763.0†	74	23.3	71	21.7	90	SE	.....	.....	3	.....	10	.....	.....	.....	.....	Long	W	Hazy..	
Ossipee, Norfolk, Va.....	30.61	777.5	61	16.1	32	0.0	90	SW	.....	.....	1	.....	1	.....	Calm	.....	.....	.....	.....	D. clouds.....	
Palos, Shanghai, China.....	30.42	772.7	62	16.7	47	8.3	85	NNW	.....	.....	1	.....	2	.....	.....	.....	.....	.....	.....	Clear	
Plymouth. N. 22° 11′, W. 65° 35′.....	30.28	769.1	78	25.6	77	25.0	95	NE	.....	.....	4–5	.....	8	.....	.....	.....	.....	Moderate.	NE	Overcast.....	
Powhatan, Hampton Roads, Va.....	.....	.....	.....	.....	39	3.9	100	NW	1.2	0.5	.....	.....	.....	.....	.....	0	0	.....	.....	Clear.....	
Ranger, Shanghai, China.....	30.54	775.7	.....	.....	54	12.2	87	N	.....	.....	1	.....	2	.....	Calm	.....	.....	.....	.....	Clear.....	
Rio Bravo, Brownsville, Texas.....	29.90	759.4	.....	.....	59	15.0	94	ESE	.....	.....	1	.....	9	.....	S	.....	.....	.....	.....	Raining.....	
Santee, Annapolis, Md	30.60	777.2	63	17 2	29	— 1.7	.....	SW	.....	.....	1	.....	2	.....	.....	0	0	.....	.....	Clear.	
Saratoga, Hampton Roads, Va.....	.....	.....	.....	.....	34	1.1	100	NNW	.....	.....	1	.....	.....	.....	.....	0	0	.....	.....	Clear.....	
St. Louis, League Island, Pa	30.30	769.6	27	—2.8	26	— 3.3	88	SSW	9	4.0	.....	.....	3	.....	SSW	0	0	.....	.....	Fair.....	
Swatara, Norfolk, Va.....	30.65	778.5	.....	.....	37	2.8	62	NNW	.....	.....	1	.....	1	.....	N&W	.....	.....	.....	.....	D. clouds.....	
Tennessee, Yokohama, Japan.....	30.09	764.3	67	19.4	57	13.9	94	NNE	15	6.7	.....	.....	9	.....	E	0	0	Slight	S	D. clouds. ...	
Trenton, Villefranche, France.....	29.72	754.9	.....	.....	60	15.6	50	NW	3	1.3	.....	.....	7	.....	S&W	1.3	33.	.....	.....	D. clouds.....	
Vandalia, Villefranche, France.....	29.68	753.9	58	14.4	58	14.4	58	WNW	.....	.....	2	.....	2	.....	NE	.....	.....	.....	.....	D. clouds.....	
Wabash, Boston, Mass.....	30.45	773.4	46	7.8	22	— 5.6	.....	W	7	3.1	.....	.....	7	.....	Calm	0	0	.....	.....	D clouds.....	
Wyoming, Washington, D. C.....	30.62†	777.7†	41	5.0	25	— 3.9	.....	SE	.....	.....	1	.....	0	.....	.....	.....	.....	.....	.....	Hazy..	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from: they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. The position given for the Plymouth is that at noon, local time, instead of that at 7:35 a. m., Washington time.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.	Character.	Direction from—		
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—				
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama, N. 16° 28′ 40″, W. 104° 26′ 50″			29.71	754.6	80	26.7	91	NW			2		2		NW	Light	S	D. clouds	Capt. Howard.
S. S. City of Peking																			Lt. Z. L. Tanner, U.S.N.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio, Hong-Kong, China			30.16	766.1	67	19.4		E			3		10					Overcast	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

NOTE.—The originals give the wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.

S. S. Belgic																			Capt. John Metcalf.
S. S. Gaelic, N. 30° 00′, E. 170° 18′			30.32*	770.1*	70	21.1	95	S			4		8		SSW	Smooth	NW	D. clouds	Capt. W. H. Kidley
S. S. Oceanic																			Capt. H. Parsell.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. *Aneriod.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig																			Capt. K. Undütsch.
S. S. Nürnberg, N. 33° 17′, W. 32° 17′			30.24	768.1	74.0	23.3	76	S			6		k		S	Smooth	S	D. clouds	Capt. A. Jaeger.
S. S. Ohio, N. 40° 54′, W. 61° 44′			30.36	771.1	42.5	5.8	75	NNE			5		k		NNE	Rough	NNE	Threatening	Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, nor distinguish between upper and lower clouds.

UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Lo'wr	Upper.	Lower.	Character.	Direction From—		
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second	0—10.	0—10.	0—10.	From—	From—				
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, N. 51° 12′, W. 29° 58′			30.02*	762.5*	53	11.7	? ?	SSW			3		10			Smooth		Dull	Captain Sargent.
S. S. Ohio. Philadelphia, Pa			30.51	774.9	37	2.8	100	NNW			1		7		Calm			Hazy	Captain Morrison.
S. S. Pennsylvania, St. George's Channel			30.35†	770.9†	50	10.0	93	NE			1		7		ENE	Smooth	NE	Cloudy	Captain Harris.

Note.—The originals give the barometer as read off; wind-force by the scale 0 to 12. *Aneroid. † Corrected for temperature and elevation, instrumental error not known.

RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

S. S. Nederland																			Capt. Randle.
S. S. Switzerland																			
S. S. Vaderland																			Capt. Jackson.
																			Capt. Nichols.

ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

S. S. Hibernian																			
S. S. Scandinavian, N. 52° 22′, W. 30° 22′			29.92	760.0	42	5.6		W			6		3		W	Mod'ate	W	Blue sky	Capt. W. Richardson.

Note.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller. Kennebunk, Maine			30.38	771.6	26	— 3.3	88	N	2	0.9			2ck		NW			Clear	Capt. James Jorgensen.

Note.—The originals for the schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4.

Collated at the Office of the Chief Signal Officer of the Army, Washington, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^{d}.) Chief Signal Officer, U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON DECEMBER 4, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSÉ mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.

1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.

1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours	.....	.....	30.12	765.1	58.6	14.8	63	NW	.....	.....	3	.....	4	.....	.....	0	0	Cloudy	Michel.
Algiers	.....	.....	29.94	760.5	56.1	13.4	68	NW	.....	.....	1	.....	9	.....	.....	0.429	10.9	Covered.....	Peter.
La Calle	.....	.....	29.86	758.5	49.3	9.6	79	W	.....	.....	3	.....	5	.....	.....	0.354	9.0	Cloudy.....	Fleury.
Tunis	.....	.....	29.90	759.4	51.6	10.9	77	NW	.....	.....	5	.....	10	.....	.....	0.315	8.0	Covered	Jacques.
Sfax	.....	.....	29.93	760 1	62.6	17.0	.....	W	.....	.....	3	.....	4	.....	.....	0	0	Cloudy.....	Husson.
Saida	.....	.....	30.06	763.5	43.2	6.2	70	WNW	.....	.....	4	.....	5	.....	.....	0.843	21.4	Cloudy.....	Millot.
Tebessa	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Bassières.
Geriville	.....	.....	30.09	764.2	46.8	8.2	91	NNW	.....	.....	4	.....	5	.....	.....	0	0	Cloudy.....	Lemaillot.
Laghouat	.....	.....	30.04	763.1	49.1	9.5	54	N	.....	.....	6	.....	4	.....	.....	0	0	Cloudy.....	Guyot.
Biskra	.....	.....	29.97	761.1	57.7	14.3	95	NW	.....	.....	4	.....	0	.....	.....	0	0	Clear.....	Kuntz.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890 ? meters, or 2,919.9 ? feet; Tebessa, 1,088 ? m., or 3,569.4 ? ft.; Geriville, 1,360 ? m.; or 4,461.7 ? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

Agram	29.30	744.1	29.85	758.3	45.0	7.2	86	SW	.....	.....	2	.....	10	.....	.....	0.197	5.0	.....	Prof. Ivan Stozir
Cracow, I. R. Observatory	29.22	742 2	30.01	762.2	41.7	5.4	87	NE	.....	.....	3	.....	10	.....	.....	0.020	0.5	.....	Dr. Wierzbiski.
Eperies	29.12	739.6	30.03	762.7	37.8	3.2	97	Calm	.....	.....	0	.....	10	.....	.....	0	0	.....	Julius Mikolik.
Gratz	28.61	726.8	29.89	759.3	39.0	3.9	85	WSW	.....	.....	2	.....	10	.....	.....	0.047	1.2	.....	Andreas Rospini.
Hermannstadt	28.58	725.8	30.02	762.6	45.3	7.4	78	ESE	.....	.....	3	.....	10	.....	.....	0	0	.....	Prof. Reissenberger.
Kremsmünster	28.41	721.5	29.77	756.2	36.7	2.6	89	E	.....	.....	5	.....	10	.....	.....	0	0	.....	Prof. C. Wagner.
Lemberg	29.08	738.7	30.11	764.8	38.1	3.4	93	SE	.....	.....	1	.....	10	.....	.....	0.016	0.4	.....	Dr. T. Stanecki.
Pola	29.61	752.0	29.72	754.8	57.4	14.1	68	SE	.....	.....	3	.....	3ks	.....	.....	1.753	44.53	.....	I.R.HydrographicOffice
Szathmar	29.56	750.8	30.03	762.7	49.6	9.8	64	SE	.....	.....	3	.....	10	.....	.....	0.020	0.5	.....	Johann Tamas, S. J.
Szegedin	29.01	762.1	29.89	759.3	51.4	10.8	77	S	.....	.....	4	.....	3	.....	.....	0.018	0.45	.....	Karl Stancel.
Trieste	29.68	753.8	29.78	756.4	46.8	8.2	6'	ENE	.....	.....	2	.....	10	.....	.....	0.465	11.8	Raining.....	P. Busin.
Vienna	29.17	740.9	29.86	759.1	39.4	4.1	100	ENE	.....	.....	1	.....	10	.....	.....	0.087	2.2	.....	I. R. Central Met. Obs'y
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day; at Syathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

Arlon	28.38	720.9	29.94	760.4	35.8	2.1	95	NW	.....	.....	1	.....	10	.....	.....	0.028	0.7	.....	Prof. M. Passau.
Brussels	29.72	754.8	29.92	760.0	40.6	4.8	89	ENE	.....	.....	2	.....	10	.....	.....	0.031	0.80	.....	Royal Observatory.
Furnes	29.91	759.7	29.93	760.3	40.8	4.9	98	ENE	.....	.....	2	.....	10	.....	.....	0.114	2.9	Dense fog....	M. E. de Cae.
Maeseyck	29.79	756.7	29.92	760.0	39.2	4.0	91	ENE	.....	.....	0	.....	10	.....	.....	0	0	Foggy	M. Pierrot.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	29.95	760.7	30.05	763.3	42.4	5.8		SSW	5	2.2			9			0	0	Misty	W. Boswell.
Ardrossan	30.00	762.0	30.02	762.5	42	6.6		ENE			1		10					Rain and fog	William McNeil.
Armagh, Observatory			30.03	762.7	43.1	6.2		S	3	1.3			10					Foggy	S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)			30.03	762.7	43.2	6.2		ESE	2	0.9			10					Raining	John Hartnup.
Birr Castle, (Parsonstown)			30.01	762.2	44.0	6.7		Calm			0		10					Overcast	J. Dreyer.
Bradford, Yorkshire	29.63	752.6	30.02	762.5	42.3	5.7		S			1		10			0.01	0.3	Overcast	J. McLandsborough.
Bridgetown, (Barbados)	29.91	759.7	29.94	760.5	80.0	26.7		NE			1		2					D. clouds	Pvt. G. W. Roberts, A.
Cambridge, Observatory			29.98	761.5	45.9	7.7		N			1		10					Drizzling	H. Todd. [H. C.
Cardington			30.02	762.5	44.0	6.7		NE			1		10					Overcast	John McLaren.
Chatham, School M. E	29.82	757.4	29.95	760.7	43.7	6.5		N			3		10					Drizzling	Lt. W. G. Morris, R. E.
Dartmoor	28.53	724.6	30.04	763.0	41.0	5.0		NE			1		5					Fine	Alexander Watt.
Davos Platz (Switzerland)																			Francis Redford, M. A.
Donaghadee	29.98	761.5	30.01	762.2	44	6.7		S			2		10					Overcast	J. Mac Gowan.
Dover	29.91	759.7	29.93	760.2	45	7.2		NE			3		10					Gloomy	J. Costello.
Eccles, (near Manchester)			29.96	761.0	44.4	6.9		E	0.4	0.2			10					Showery	Thomas Mackereth.
Falmouth, Observatory	29.80	756.9	30.04	763.0	46.7	8.2		NNE			0		9					Foggy	The Staff.
Fort Napier, (Natal)	27.84	707.1	30.07	763.8	64.5	18.1		SE			2		10					Drizzling	Pvt. G. Salmon, A.H. C.
Free Town, (Sierra Leone)			29.99	761.7	86	30.0		Calm			0		3					D. clouds	
Galway, Queen's College																			Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	30.12	765.0	30.17	766.3	69.0	15.0		NW			5		0					Blue sky	Corpl. C. Aitken, A.H.C.
Glasgow, Observatory	29.82	757.4	30.02	762.5	41.4	5.2		ENE			1							Dense fog	D. G. Maclean.
Great Yarmouth	29.96	761.0	29.97	761.2	44	6.7		NE			3		8					Drizzling	G. T. Watson.
Greenwich, Royal Obs'y	29.79	756.7	29.96	761.0	44.9	7.2		N			1		10					Raining	The Staff, for G. B. Airy.
Guernsey	29.78	756.4	30.00	762.0	47.5	8.6		NNW			1		5					D. clouds	Dr. S. E. Hoskins, F.R.S.
Helston			30.03	762.7	40	7.8		NE			2		8k			0	0	Gloomy	M. P. Moyle.
Holyhead	29.96	761.0	30.01	762.2	44	6.7		Calm			0		10					Misty	John Tilston.
Jersey	29.74	755.4	30.04	763.0	48.5	9.2		NNE			2		8			Blank	Blank	Overcast	J. Fisher.
Kew, Observatory			29.98	761.5	46.0	7.8		NNW	8	3.6			10k					Overcast	The Staff.
Kingstown	30.00	762.0	30.03	762.7	46	7.8		SE			1		10					Overcast	George Mitchell.
Leicester, Museum			30.00	763.5	44.0	6.7		NE			1		10					Overcast	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.83	757.7	29.90	759.4	54.2	12.3		W			6		8					Raining	Sgt. Fred. Travis, A. H.
Nairn	29.90	759.4	30.00	762.0	40	4.4		Calm			0		10					Overcast	W. D. Penny. [C.
Nassau, (Bahamas)			30.19	766.8	70.8	21.6		NE			2		8					D. clouds	C. S. Duncombe.
Nottingham, Observatory	29.84	757.9	30.04	763.0	44.3	6.8		NNW			1		10s		NW	0.038	0.96	Overcast	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.48	748.8	30.01	762.2	43.2	6.2		NNE			1		10					Overcast	Rev. Stephen Whitty.
Oxford, Radcliffe Obs'y			30.09	764.3	45	7.2		N			1		10					Gloomy	Mr. Lucas.
Plymouth	29.96	761.0	30.03	762.7	45.3	7.4		Calm			0		10					Overcast	John Merrifield.
Roche's Point	29.97	761.2	30.01	762.2	49	9.4		SSW			2		10					Dull	W. Kennedy.
Saint Ann's Head	29.85	758.2	30.01	762.2	46	7.8		E			1		10					Raining	John C. Walker.
Sandwick Manse, (Orkneys)			29.99	761.7	40.9	4.9		S	10	4.5			5					D. clouds	Rev. C. Clouston, LL. D
Scutari, Cemetery, (Turkey)			30.12	765.0	56.0	13.3		N			1		9					Gloomy	Sergt. W. H. Lyne.
Sheffield	29.77	756.1	30.06	763.5	43.2	6.2		NNE			1		10			0.02	0.5	Overcast	W. F. Cooper.
Silloth Rectory	29.99	761.7	30.02	762.5	44.4	6.9	80	NE			1		5			0	0	D. clouds	Rev. F. Redford, M. A.
Stonyhurst, Observatory					42.9	6.1		NW			1		10					Drizzling	Rev. S. J. Perry.
Stornoway, Lewis C., (Hebr.)			29.93	760.2	44	6.7		SSW			3		10					Raining	John Smith.
Stratfield Turgiss	29.80	756.9	30.02	762.5	44.1	6.7		NW			1		10					Drizzling	Rev. C. H. Griffith, F.M.S.
Thurso			29.97	761.2	41	5.0		SSW			1		6					D. clouds	John Trotter.
Truro, Royal Institution			30.05	763.3	47	8.3		SW			0		10					Gloomy	W. Newcombe.
Valencia, Observatory			29.98	761.5	47.4	8.6		SE	19	8.5			10					Drizzling	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)																			Henry Mercer.
Cape Good Hope, Obs'y	30.22	767.6	30.26	768.6	75.2	24.0	40	SSE	12	5.4		0	0						The Staff, for E. J. Stone.
Hobart Town, (Tasmania)			29.28	743.7	55.0	12.8	71	NW			3		4k			0	0		Francis Abbott, F.R.A.S.
Leith, Restalrig Park																			Andrew Gibb.
Mauritius, Observatory	29.90	759.4	30.09	764.4	78.4	25.8	71	ESE	15.5	6.9		2	9		E	1.38	35.0	Fine; cloudy	C. Meldrum.
Melbourne, Observatory	29.63	752.6	29.72	754.9	54.7	12.6	66	W	10	4.5			7			0.07	1.8	Squally	R. L. J. Ellery.
Monach L't-house, (Hebrides)																			J. Youngclause.
North Unst, (Shetland Is.)																			Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m.

MARINE SERIES.

VESSELS.

	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea or swell. Height scale 0—9	Sea or swell. Direction from—	Weather.	Observer.
S. S. Algeria, N. 50° 45′, W. 22° 30′			30.01	762.2	49	9.4		E			3		10	SSW		10*	WNW	Overcast	Capt. W. Watson.
S. S. Batavia																			Capt. J. E. Mouland.
Ship Camperdown																			Capt. A. T. Miller.
Brig Catherine																			Capt. Adam Smith.
Barque Celeste																			Capt. D. F. McKechnie.
S. S. Hibernia																			Capt. W. R. Cato
Barque Maroon																			Capt. A. T. Brown.
Ship Mikado																			Capt. C. C. Prehn.
S. S. Seine																			Capt. H. Manning.
Barque Serata																			Capt. Jas. J. Price.
Schooner Traveller																			Capt. Alex Simpson.

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. *Feet

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Señor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	BAROMETER. Corrected for instrum'tal error and temperature. Inches.	BAROMETER. Corrected for instrum'tal error and temperature. Millimeters.	BAROMETER. Reduced to sea-level. Inches.	BAROMETER. Reduced to sea-level. Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Upper. From—	CLOUDS. Direction. Lower. From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	WEATHER.	OBSERVER.
San José	26.15	664.2			68.4	20.2	89	E			3	1cd	2sd	E	E	0	0		Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	30.07	763.8	30.12	765.0	41.2	5.1	95	E			4		10					Raining	
Fanöe	30.06	763.5	30.08	764.0	40.8	4.9	98	E			4		10						
Godthaab, (Greenland)	29.35	745.6	29.40	746.7	9.7	—12.4	88	NW			2		7						
Stykkisholm, (Iceland)	29.38	746.3	29.43	747.4	32.2	0.1	81	SW			8		8					Snowing	
Thorshavn, (Faröe)	29.86	758.5	29.90	759.4	43.3	6.3	72	Calm			0		10						
Vestervig	29.96	760.9	30.13	765.2	37.8	3.2	93	ENE			4		10						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

Alençon, Normal School	29.53	750.0	30.08	764.0	46.4	8	94	NE			1		5			0	0	Cloudy	Gollignon, Director.
Amiens, Normal School	29.82	757.5	29.93	760.3	40.3	4.6	91	ENE			2		10			0.016	0.4	Covered	Bonvarne, Director.
Avignon, Normal School	29.73	755.2	29.81	757.2	45.3	7.4	60	N			4		5		N	0	0	Cloudy	Mr. Giraud, Director.
Bar-sur-Seine	29.34	745.3	29.93	760.1	38.7	3.7	93	NW			1		10		NW	0.004	0.1	Covered	C. Saillard.
Beaumette Obs'y (Angers)	29.82	757.3	29.98	761.5	46.8	8.2	86	W	2.7	1.2					NW	0	0		Albert Cheux.
Beauvais	29.67	753.7	29.97	761.2	39.4	4.1	88	NNE			1		10			0.020	0.50	Covered	Normal School.
Besançon	29.00	736.6	29.92	759.9	40.1	4.5	91	S			3		8		SW	0	0	Very cloudy	Normal School.
Bourg-en-Bresse	29.07	738.3	29.98	761.4	39.0	3.9	90	N			2		10n		N	0.24	6.	Raining	Normal School.
Bourges, Normal School	29.22	742.1	29.78	756.5	39.4	4.1	97	SW			2		10		SW	0.08	2.	Covered	A. Wagner, Director.
Brest, Naval Observatory	29.76	755.8	29.98	761.4	48.4	9.1	89	N			1		10		N	0	0		The Staff.
Carcassonne, Normal School	29.61	752.0	30.01	762.3	41.0	5	90	W			4		2		NW	0.322	8.2	Slightly cl'dy	Vateau, Director.
Caen	29.93	760.3	30.01	762.2	47.8	8.8	84	NNE			2		10		SSW	0.055	1.4	Covered	Normal School.
Chartres, Normal School	29.31	744.4	29.89	759.1	42.4	5.8		NE			2		10			0	0	Covered	Lequin, Director.
Châlons-sur-Marne, N. Sch'l	29.58	751.4	29.91	759.7	39.0	3.9	97	N			2		10n			0	0	Covered	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.57	725.6	29.98	761.4	38.1	2.3	85	N			1		10			0	0	Covered	Alluard, Director.
Commercy, Normal School	29.00	736.6	29.90	759.4	38.5	3.6	93	NW			2		10		NW	0	0	Covered	Dr. Goulet, Director.
Commune de Gréasque*	28.62	727.0	29.76	756.0	42.3	5.7	75	NW			2		8		NW	0	0	¾ Covered	M. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	29.83	757.6	30.05	763.2	48.2	9.0	89	W			2		8		SE	0	0	Cloudy	Mouillot, Director.
Le Mans, Normal School	29.66	753.3	29.97	761.2	45.9	7.7	86	NNW			2		5		NW	0	0	Cloudy	Poirrier, Director.
Lons-Le-Saulnier, N.School	28.95	735.2	29.88	759.0	38.7	3.7	93	SW			1		10			0.016	0.40	Rainy	Voudez, Director.
Lorient, Naval Observatory	29.95	760.8	30.05	763.3	50.4	10.2	72	W			3		10			0	0	Covered	T. Carré, Director.
Mâcon, Normal School	29.20	741.7	29.91	759.7	39.7	4.3	93	NW			1		10			0	0	Covered	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	28.80	731.6	29.88	758.9	38.5	3.6	90	NNE			2		10		SSW	0	0	Covered	Normal School.
Nismes, Normal School	29.61	752.0	29.82	757.3	45.7	7.6	66	N			4		8		N	0	0	Very cloudy	Boyer, Director.
Orleans, Normal School	29.56	750.9	29.95	760.7	41.0	5	94	N			2		8		N	0.047	1.2	Very cloudy	Bernard, Director.
Paris, Observatory	29.69	754.2	29.94	760.5	39.9	4.4	79	N			1		10k		N	Inap.	Inap.	Foggy	National Observatory.
Privas	28.83	732.2	29.89	759.2	54.5	12.5	42	N			4		10		N	0	0	Covered	Normal School
Rochefort, Naval Obs'y	30.02	762.5	30.05	763.3	45.3	7.4	83	WNW			2		10		ESE	0.08	2.	Covered	Lt. Decante, Director.
Rouen, Normal School	29.87	758.7	29.96	760.9	43.3	6.3	82	N			2		10		N	0	0	Covered	F. Lucard, Director.
Tarbes, Normal School	29.00	736.6	30.11	764.7	48.2	9	97	NNW			2		5		W	0	0	Cloudy	T. Hugues, Director.
Villefranche	29.22	742.1	29.95	760.8	38.7	3.7	89	NW			2		10		N	0.008	0.2	Covered	Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.81	757.1	29.84	757.8	75.2	24										0.08	2.		L'Abbé Marchési.
Marseilles, Observatory			29.76	755.8	45.5	7.5	93	NW			4		8			0	0	Covered	The Staff.
Mont-Louis	24.64	625.9	29.96	760.9	31.6	— 0.2	50	NNW	24.2	10.83			7		N	0	0		Mr. Falguère.
Nice			29.66	753.3	55.9	13.3	81	NE			1		9			0	0	Covered	Dr. A. Niepce.
Paris, Montsouris Obs'y	29.65	753.1	29.93	760.1	39.2	4.0	83	N			2		10		N	Inap	Inap.	Rain and fog	Marié Davy, Director.
Perpignan			29.91	759.7	47.1	8.4	67	NW	29.8	13.33			9		NW	0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.																			M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.35	567.6			24.4	— 4.2		N			3		6			0.768	19.5	Snowy	Gen'l de Nansouty.
Saint Maur, (near Paris)	29.77	756.2	29.94	760.4	38.8	3.8	95	NNW			1		10		N	0	0	Covered	E. Renou.
Toulouse, Observatory	29.35	745.6	30.08	764.0	39.4	4.1	90	NW			4		10			0.042	1.07	Light rain	The Staff.
Tours	29.78	756.3	29.97	761.3	43.9	6.6	90	W			1		10			0.008	0.2	Misty	C. Marquet.
Versailles, (near Paris)			29.94	760.4	39.2	4.0	93	NE			1		10			0.024	0.59	Rain and fog	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.37	771.5	30.40	772.1	35.8	2.1	96	Calm	0	0			0			0	0	Clear	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; for Montsouris, the barometer reduced to freezing but not to sea-level. At Mirecourt and Rochefort the cloud directions are apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time.

*Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg																			
Berlin	29.87	758.7	30.04	763.0	43.0	6.1	80	SE			1		10						Prof. Dr. Hoh.
Breslau	29.49	749.0	30.02	762.5	40.1	4.5	84	ESE			2		10			0.059	1.50		Prof. Arndt.
Carlsruhe	29.41	747.1	29.85	758.3	40.3	4.6	84	Calm			0		10			0	0		Royal University Obs'y.
Cassel	29.38	746.2	29.98	761.6	41.0	5.0	75	E			2		6	ENE		0	0		Albert Senz.
Crefeld	29.73	755.2	29.89	759.3	43.3	6.3	78	E			2		5			0	0		Dr. H. Möhl.
Emden	30.02	762.4	30.05	763.3	42.8	6.0	79	E			3		10			0	0		Director Lose.
Frankfort on the Main	29.56	750.7	29.93	760.2	43.5	6.4		NNE			2		1			0	0		Prof. Prestel.
Friedrichshafen	28.39	721.1	29.86	758.4	39.2	4.0	90	W			5		10	WNW		0	0		Physical Society.
Hamburg	29.97	761.2	30.04	763.0	43.7	6.5	86	ESE			4		8k	E		0	0		M. Wilhelm.
Kiel	30.05	763.2	30.07	763.6	42.8	6.0	89	E			4		10			0.008	0.2		Captain F. Hegemann.
Königsberg, (Prussia)	30.18	766.6	30.26	768.6	37.0	2.8	87	SE								0	0		Prof. G. Karsten.
Köslin			30.10	764.6	37.2	2.9		E			2		4			0.001	0.02	Cloudy	Prof. E. Luther.
Leipsic, Observatory	29.56	750.8	29.9?	761.7	42.8	6.0	92	E			3		7	E		0.130	3.3		H. Müller.
Memel, Naval School	30.29	769.3	30.34	770.5	35.4	1.9	90	ESE			3		10cs; ks			0	0		Prof. Bruhns.
Neufahrwasser	30.22	767.5	30.23	767.9	36.1	2.3	91	SE			2		10					Cloudy	Reinbrech von Skalweit.
Posen	29.80	756.9	30.10	764.5	38.3	3.5	91	E			8					0	0		A. Lothes.
Strassburg Obs., (in Alsace	29.31	744.5	29.88	758.9	39.4	4.1	83	N			2		10			0	0	Covered	Dr. Magener.
Stuttgart	28.86	733.1	29.83	757.6	40.1	4.5	81	N			1		10			0	0		Dr. Schur.
Treves, (Trier)	29.26	743.1	29.78	756.3	42.6	5.9	76	NE			2		6			0.008	0.2		Prof. Schoder.
Weissenburg, (Bavaria)	28.29	718.5	29.83	757.7	39.2	4.0	82	NE	2	1			10			0	0	Dense fog	Prof. Flesch.
Wustrow, Naval School	30.12	765.0	30.16	766.1	41.0	5.0	94	E			3		10			0	0	Covered	Dr. Von Bebber.
German Naval Series.																0	0	Covered	E. F. Schütz.

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet: Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4. Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines, Königsberg, Posen and Wustrow in cubic zolls. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.65	753.0	30.04	762.9	66.7	19.3		SW			2.5							⅛ Clear	Dr. J. F. J. Schmidt.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and wind-force; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	30.00	762.0	30.05	763.3	78.1	25.6	61	ENE	16.0?	7.2?			2			0	0	D. clouds	
Deesa	29.51	749.5	29.99	761.7	78.9	26.1	34	N					4	SW		0	0	D. clouds	
Bombay	29.87	758.7	29.91	759.6	79.8	26.6	72	NNW	13.0	5.8			10		WSW	0	0	Overcast	
Poona	27.88	708.2	29.88	759.1	79.8	26.6	61	S					10		SW	0	0	D. clouds	
Lahore	29.30	744.3	30.08	763.9	63.1	17.3	58	NW	2.2	1.0			4			0	0	Cloudy	
Belgaum	27.38	695.4	29.91	759.6	78.8	26.0	43	E	5.0	2.2			1			0	0	D. clouds	
Bangalore																			
Roorkee	29.07	738.4	30.00	762.1	64.6	18.1	55	NW	1.2	0.5						0	0		
Agra	29.42	747.4	30.01	762.2	68.3	20.2	54	NE								0	0		
Trichinopoly																			
Nagpur	28.89	732.7	29.94	760.4	78.6	25.9	64	Calm	3.0	1.3			9	NE		0	0	D. clouds	
Madras																			
Lucknow	29.64	752.8	30.02	762.6	68.4	20.2	73	Calm	0.3	0.1			0			0	0	Blue sky	
Allahabad	29.68	753.8	30.00	762.0	64.2	17.9	63	Calm	0.6	0.3			0			0	0	Blue sky	
Patna	29.82	757.5	30.01	762.2	69.5	20.8	54	W	0.9	0.4			4	W	W	0	0	D. clouds	
Hazaribagh	27.94	709.7	30.01	762.3	66.0	18.9	49	NW	3.5	1.6			1			0	0	Blue sky	
Cuttack	29.90	759.5	29.98	761.6	79.0	26.1	71	SE	1.8	0.8			4			0	0	D. clouds	
Calcutta (Alipore)	29.96	761.1	29.98	761.6	69.7	20.9	73	NW	0.5	0.2			0			0	0	Blue sky	
Goalpara	29.56	750.7	29.96	760.9	69.8	21.0	62	Calm	0.7	0.3			0			0	0	Blue sky	
Chittagong	29.89	759.1	29.98	761.5	68.0	20.0	67	Calm	3.3	1.5			0			0	0	Blue sky	
Sibsagar	29.66	753.5	30.02	762.4	63.4	17.4	86	ENE	0.8	0.4			6			0	0	D. clouds	
Rangoon																			
Jubbulpore	28.63	727.3	30.03	762.8	70.0	21.1	71	NE	1.0	0.4			8	NW		0	0	D. clouds	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,016 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 1—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	21.89	556.0	29.80	756.9	24.4	— 4.2	85	E	.....	.....	6	.....	10	.....	.....	†19.690	†500.0	.....	Ab. Dom. Mongini.
Stelvio	21.86	555.2	29.71	754.7	25.9	— 3.4	.....	ENE	.....	.....	1	.....	10	.....	.....	0.870	22.1	.....	Signora Ernesta Manfredi.
Udine	29.36	745.7	29.78	756.3	46.8	8.2	72	E	4.9	2.2	.....	.....	10	.....	.....	0.870	22.1	.....	Prof. Giovanni Clodig.
Padua	29.63	752.7	29.74	755.5	48.7	9.3	79	NE	15.0	6.7	.....	.....	9	E	.....	1.386	35.2	.....	Prof. Dott. Lorenzoni.
Vicenza	29.58	751.2	29.77	756.1	49.1	9.5	80	NE	8.1	3.6	.....	.....	7	E	.....	1.543	39.2	.....	Conte Alm. Da Schio.
Verona	29.56	750.7	29.78	756.5	54.5	12.5	75	SE	11.9	5.3	.....	.....	6	.....	.....	0.661	16.8	.....	Dott. B. Bertoncelli.
Bergamo	28.43	722.1	29.78	756.4	48.6	9.2	81	SW	.....	.....	2	.....	7	.....	.....	0.472	12.0	.....	Prof. Trionfini Carlo.
Domodossola	28.75	730.2	29.80	757.0	44.8	7.1	90	.....	.....	.....	.....	.....	10	.....	.....	0.087	2.2	.....	Prof. Giuseppe Calza.
Milan	29.24	742.7	29.77	756.1	48.2	9.0	.....	NNW	.....	.....	2	.....	9	ESE	.....	0.780	19.8	.....	Ab. Gio. Capelli.
Pavia	29.41	746.9	29.76	755.9	46.6	8.1	97	N	.....	.....	2	.....	10	.....	.....	1.063	27.0	.....	Prof. Gio. Cantoni.
Moncalieri	28.86	733.1	29.79	756.7	46.4	8.0	86	NW	0.7	0.3	.....	.....	9	SE	.....	0.567	14.4	.....	Prof. P. F. Denza.
Mondovi	27.85	707.3	29.80	757.0	38.5	3.6	97	W	.....	.....	4	.....	10	.....	.....	1.465	37.2	.....	Prof. D. C. Bruno.
Porto Maurizio	29.47	748.6	29.69	754.2	55.6	13.1	42	ENE	0.7	0 3	.....	.....	8	NNE	.....	0.079	2.0	.....	Prof. L. Vassallo.
Genoa	29.52	749.8	29.69	754.2	54.5	12.5	56	N	6.9	3.1	.....	.....	4	E	.....	0.165	4.2	.....	Prof. G. M. Garibaldi.
Piacenza	29.49	749.1	29.75	755.7	46.8	8.2	92	NW	0.7	0.3	.....	.....	10	.....	.....	1.547	39.3	.....	Dott. G Manzi.
Parma	29.44	747.7	29.76	755.9	48.6	9.2	93	WNW	.....	.....	2	.....	10	.....	.....	1.622	41.2	.....	Prof. P. Pigorini.
Florence	29.43	747.5	29.69	754.1	49.6	9.8	74	E	.....	.....	2	.....	10	.....	.....	0.228	5.8	.....	Cav. F Meucci.
Leghorn	29.56	750.8	29.65	753.0	49.6	9.8	87	NE	15.4	6.9	.....	.....	10	NE	.....	0	0	.....	Prof. P. Monte.
Siena	28.47	723.1	29.69	754.2	45.0	7.2	93	ESE	3.1	1.4	.....	.....	10	E	.....	0.146	3.7	.....	Prof. L. Toscani.
Urbino	28.17	715.6	29.75	755.7	47.8	8.8	77	SW	.....	.....	2	.....	10	.....	.....	0.071	1.8	.....	Prof. P. Serpieri.
Pesaro	29.67	753.7	29.72	755.0	52.0	11.1	84	N	0	0	.....	.....	10	SSE	.....	0.268	6.8	.....	Prof. Luigi Guidi.
Ancona	29.63	752.5	29.74	755.3	52.9	11.6	93	Calm	.....	.....	0	.....	7	.....	.....	0.063	1.6	.....	Prof. F. DeBosis.
Grosseto	29.54	750.4	29.66	753.3	53.8	12.1	89	ESE	.....	.....	2	.....	8	SE	.....	0.339	8.6	.....	Avv. P. Ponticelli.
Rome	29.56	750.7	29.73	755.2	50.0	10.0	87	ENE	6.3	2.8	.....	.....	10	.....	.....	1.063	27.0	.....	Prof. P. A Secchi.
Naples, O. U	29.63	752.6	29.83	757.7	54.7	12.6	77	SW	.....	.....	6	.....	10	SSW	.....	0.752	19.1	.....	Prof. L. Palmieri.
Lecce	29.65	753.1	29.90	759.5	59.7	15.4	78	S	12.5	5.6	.....	.....	10	S	.....	0.071	1.8	.....	Prof. C. De Giorgi.
Cosenza	29.01	736.8	29.91	759.6	56.1	13.4	71	NE	0.7	0.3	.....	.....	10	.....	.....	0.346	8.8	.....	Prof. F. D. Conti.
Cagliari	29.51	749.6	29.71	754.5	56.3	13.5	52	NW	.....	.....	2	.....	9	NW	.....	0.020	0.5	.....	Prof. A. Pacinotti.
Riposto, (Sicily)	29.67	753.5	29.71	754.7	56.1	13.4	67	SW	.....	.....	4	.....	10	NE	.....	0.157	4.0	.....	Prof. F. Cafiero.
Palermo	29.51	749.5	29.76	756.0	59.0	15.0	47	SSW	8.1	3.6	.....	.....	7	.....	.....	0.004	0.1	.....	Prof. G. Cacciatore.
Caltanissetta	27.87	707.8	29.83	757.6	47.3	8.5	85	SE	.....	.....	4	.....	10	.....	.....	0.213	5.4	.....	Prof. A. Pagani.
Syracuse	29.74	755.3	29.81	757.2	55.4	13.0	75	WSW	.....	.....	4	.....	10	W	.....	0.102	2.6	.....	Prof. V. Giuliano.
SUB-SERIES.																			
Naples, S. R.	29.26	743.1	29.81	757.2	54.0	12.2	69	WSW	8.1	3.6	.....	.....	9	.....	.....	0.370	9.4	.....	Prof. F. Brioschi.
.....																			
.....																			

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,543.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo 879.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Siena, 348.5 m., or 1,143.3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft †Unmelted snow.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Tokei (Yeddo)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	The Observatory.
Tokei (Yeddo) University	30.00	762.0	30.10	764.6	46	7.8	44	NNE	21.2	9.5	.....	.....	5ks	.....	.....	0	0	Fair	Prof. P. V. Veeder.
.....																			
.....																			

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Aguascalientes	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	I. N. Marin, M. D.
Córdoba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	C. Peña, M. D.
Cuernavaca	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	L. Castillo, A. E.
Guadalajara	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. L. Perez.
Guanajuato	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. V. Fernandez.
Leon	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. M. Leal.
Mexico	23.11	587.0	30.23	767.7	55.4	13.0	75	Calm	0	0	.....	.....	10ks	.....	SW	0	0	Covered	Central Observatory.
Orizaba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	N. N.
Orizaba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	I. Orozco, M. D.
Pabellon, (Aguascalts)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. V. de Leon, M. E.
Puebla	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. B. Gonzalez.
Toluca	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. C. Velazquez.
Tlacotalpam	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. F. R. Bayly.
San Luis Potosi	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	G. Barroeta, M. D.
Vera-Cruz	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. J. Rossell.
Zacatecas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. A. Bonilla, M. E.
Puebla, (Catholic Institute)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	P. Spina. [M. M. D. D.
Morelia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Tena, F. L. Páramo

NOTE.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,293 m., or 7,512.9 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m,, or 8,611.8 ft.; San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	29.94	760.5	29.94	760.5	41.0	5.0	.....	NNE	.....	.....	2	.....	.....	.....	.....	0.012	0.3	.....	
Groningen	29.93	760.2	29.98	761.6	42.4	5.8	.....	ESE	.....	.....	2	.....	.....	.....	.....	0	0	.....	
Helder	29.96	760.9	29.96	760.9	41.4	5.2	.....	ENE	.....	.....	2	.....	.....	.....	.....	0	0	.....	
Hellevoetsluis	.....	.....	29.94	760.4	40.8	4.9	95	NE	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	
Utrecht	29.90	759.5	29.95	760.7	40.5	4.7	84	ENE	.....	.....	2	.....	10	.....	.....	0	0	Dull	H. v d Bruk.
.....																			

NOTE.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	30.13	765.2	30.18	766.6	38.5	3.6	93	Calm	0	0	.....	.....	10	.....	.....	0.031	0.8	Light rain....	
Brönö	30.08	764.1	30.12	765.1	38.8	3.8	60	SSE	7	3	.....	.....	2	.....	.....	0	0	.....	
Christiania	30.16	766.0	30.31	769.9	34.8	1.3	94	NE	4	2	.....	.....	10	.....	.....	0.012	0.3	.....	
Tromsö	29.89	759.1	29.93	760.2	42.8	6.0	67	SW	25	11	.....	.....	10	.....	.....	0	0	.....	

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	30.03	762.8	30.22	767.6	65.7	18.7	86	W	7.4	3.3	.....	.....	6	.....	.....	0	0	.....	Dr. J. A. Sampaio.
Campo Major	29.15	740.4	30.19	766.9	50.9	10.5	70	SW	5.6	2.5	.....	.....	8	WNW	.....	0	0	.....	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.24	768.2	30.32	770.0	69.8	21.0	58	SW	3.1	1.4	.....	.....	3	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.84	757.9	30.20	767.1	57.0	13.9	70	NW	4.9	2.2	.....	.....	10	.....	.....	0	0	.....	The Staff.
Ponta Delgada, (Azores)	30.22	767.6	30.29	769.4	66.2	19.0	79	SSW	9.8	4.4	.....	.....	10	.....	.....	0	0	.....	
.....																			
.....																			

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

Naval Series. Vessels.	Sea or swell. Height scale 0–9	Sea or swell. Direction from—		
S. S. Bartholomew Dias.	.....	.....	.....	R, A. T. Pinha, Com'd't.
S. S. India.	.....	.....	.....	A. D. Pedroso, Com'd't.
S. S. Mindello.	.....	.....	.....	J. F. R. R. Bastos, Com'd't.
S. S. Sado.	.....	.....	.....	A. N. P. Sampaio, Com'd't.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.72	754.9	30.16	766.1	36.7	2.6	89	E	18	8	.....	.....	10ks	.....	.....	.....	.....	.....	Astronomical Obs.
Wilna	30.06	762.0	30.45	773.3	31.6	— 0.2	98	S	2	1	.....	.....	10	.....	.....	.....	.....	Heavy clouds	Astronomical Obs.
Dorpat	30.30	769.5	30.56	776.1	28.4	— 2.0	100	E	7	3	.....	.....	9n	.....	.....	.....	.....	Foggy	Prof. Dr. Weihrauch
St. Petersburg	30.58	776.8	30.60	777.2	28.2	— 2.1	95	SSE	9	4	.....	.....	10n	.....	.....	.....	.....	.....	Central Physical Obs.
Kuopio	30.15	765.9	30.50	774.6	30.6	— 0.8	96	S	7	3	.....	.....	10	.....	.....	.....	.....	Snowing.....	Ch. Forsten.
Zieff	29.72	755.0	30.40	772.1	32.7	0.4	96	E	11	5	.....	.....	10n	.....	.....	.....	.....	Light rain...	Physical Cabinet.
Nikolaiev	30.32	770.1	30.39	771.9	37.6	3.1	98	E	18	8	.....	.....	10n	.....	.....	.....	.....	.....	Kurdakof.
Kertch	30.37	771.5	30.39	772.0	39.7	4.3	93	NE	9	4	.....	.....	10	.....	.....	.....	.....	.....	Lagorio.
Moscow	30.15	765.7	30.74	780.9	19.4	— 7.0	100	S	9	4	.....	.....	10s	.....	.....	.....	.....	.....	Meteorological Obs.
Lugan	30.29	769.3	30.50	774.8	32.0	0.0	78	E	9	4	.....	.....	10	.....	.....	Blank	Blank	.....	Meteorological Obs.
Archangel	30.34	770.7	30.36	771.2	30.9	— 0.6	96	SW	18	8	.....	.....	10	.....	.....	.....	.....	.....	Ogorodnikof.
Tiflis	28.91	734.4	30.37	771.5	46.8	8.2	83	SE	4	2	.....	.....	4k	.....	.....	.....	.....	.....	Physical Observatory.
Astrakhan	30.67	779.1	30.59	777.0	26.6	— 3.0	78	NE	7	3	.....	.....	1s	.....	.....	.....	.....	.....	Sebastianof.
Kasan	30.36	771.1	30.65	778 6	19.4	— 7.0	100	Calm	0	0	.....	.....	10	.....	.....	.....	.....	.....	Physical Cabinet.
Orenburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Tschernischef.
Ekaterinburg	29.43	747.4	30 47	773.8	11.3	—11.5	82	WNW	22	10	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Nukuss	30.09	764.3	30.34	770.5	37.4	3.0	85	NNE	7	3	.....	.....	10kn	.....	.....	.....	.....	.....	
Kasaly	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Bobrof.
Tashkend	28.69	728.7	30.46	773.6	44.2	6.8	88	NW	2	1	.....	.....	10k	.....	.....	.....	.....	.....	Michelson.
Barnaul	29.98	761.4	30.60	777.1	—18.2	—27.9	81	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Meteorological Obs.
Yeniseisk	30.21	767.4	30.60	777.1	—21.3	—29.6	85	W	4	2	.....	.....	0	.....	.....	.....	.....	.....	Marks.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Usolzef.
Oorga	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Mossin.
Krotkowo	30.21	767.2	30.72	780.3	15.6	— 9.1	94	S	2	1	.....	.....	0	.....	.....	.....	.....	.....	Cand. Fatjanow.
Peking, (China)	30.20	767.1	30.34	770.7	25.2	— 3.8	53	SW	18	8	.....	.....	0	.....	.....	.....	.....	.....	Physical Observatory
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Vladivostock	30.51	775.0	30.55	776.0	14.0	—10.0	80	NW	7	3	.....	.....	0	.....	.....	.....	.....	.....	
Nikolaievsk, on the Amoor	.....	.....	.....	.....	— 7.1	—21.7	70	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	
.....																			

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Viennasymbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Ar.tonio Rave, Director.
Bilbao, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Manuel de Naveran
Burgos, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Domingo Martin y Perez.
Madrid, Royal Observatory	27.83	706.8	30.10	764.6	47 8	8.8	54	S	2.2	1.00	.....	2	0	NE	.....	0	0	Light clouds	The Staff.
Murcia, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Olayo Diaz, Director.
Santiago, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I	30.07	763.8	30.14	765.5	69.2	20.7	83	ESE	9.8	4.4	.....	1c	0	.....	.....	0	0	Clear.	Benito Vines, S. J.
San Fernando, Naval Obs'y	30.12	765.0	30.22	767.6	54.1	12.3	77	WNW	7.0	3.1	.....	1	4	NW	W	0	0	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.	.....	.....	29.98	761.5	78.8	26.0	78	NE	13.9	6.23	.....	8kn	2kn	NE	NE	0.226	5.75	Overcast	Leonardo de Tejeda, Chief of Engineers.
.....																			

Note.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p m., instead of 8:19 a m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	30.29	769.8	30.33	770.8	33.8	1.0	.....	SW	.....	.....	4	.....	10	.....	.....	0	0	.....	
Umea	30.33	770.8	30.38	771.6	33.8	1.0	100	SW	.....	.....	2	.....	10	.....	.....	0	0	.....	
Hernosand	30.34	770.5	30.39	771.8	34.2	1.6	93	SW	.....	.....	2	.....	10	.....	.....	0	0	.....	
Stockholm	30.15	765.9	30.33	770.4	37.8	3.2	83	ENE	.....	.....	2	.....	8	.....	.....	0	0	.....	
Wisby	30.24	768.2	30.30	769.7	38.1	3.4	90	S	.....	.....	4	.....	10	.....	.....	0.024	0.6	.....	
Sub-Series.																			
Upsala	30.27	768.8	30.34	770.7	35.4	1.9	87	ESE	3.4	1.5	.....	.....	10	.....	SE	0.039	1.00	.....	Dr. Hildebrandsson.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the cooperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.43	722.1	29.00	759.5	38.8	3.8	87	SW	.....	.....	1	.....	10	.....	.....	0	0	Covered	The Observatory.
Zurich	28.16	715.3	29.86	758.4	36.7	2.6	93	W	.....	.....	1	.....	10	.....	.....	0.028	0.7	Covered.....	The Observatory.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—For Geneva the corresponding departures from the normal values are: Barometer, —5.4 mm; Thermometer, +0.1 cent.; Relative Humidity, +8 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	30.15	765.8	55.2	12.9	82	ENE	6	2.5	.....	.....	10	.....	SW	0	0	.....	The Observatory.
Fao, (Persian Gulf)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salonica	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	B. Stefanidès.
Valona	.....	.....	29.97	761.2	67.4	14.1	.....	S	.....	.....	2	.....	10	.....	.....	1.73	44.	Rainy.....	A. Bertrand.
Varna	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Imperial Observatory.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.95	760.7	30.07	763.8	69.1	20.6	66	N	.....	.....	1	.....	0	.....	.....	0	0	Blue sky.....	Prof. C. V. A. Van Dyck

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	30.05	763.3	30.12	765.0	29.7	— 1.3	74	Calm	0	0	.....	0	.....	.....	.....	.....	.....	.....	Hon. J. Ferguson.
Brockville, Ontario	29.92	760.0	30.24	768.1	31	— 0.6	.....	Calm	0	0	.....	.....	8s	.....	SW	0	0	Cloudy.....	W. R. Bigg.
*Chatham, N. B	30.06	763.5	30.13	765.3	18	— 7.8	95	SW	1	0.4	.....	0	Haze	.....	Calm	0	0	Clear.....	G. A. Blair.
Charlottetown, P. E. Island.	30.09	764.3	30.13	765.3	27	— 2.8	89	W	4	1.8	.....	0	0	.....	.....	0	0	Clear.....	H. J. Cundall, C. E.
Cornwall, Ontario	30.03	762.7	30.23	767.8	25.0	— 3.4	82	SW	.....	.....	1	0	5s	.....	.....	0.102	2.59	Fair	James Smith, M. A.
Dalhousie, N. B	30.09	764.3	30.12	765.0	28.2	— 2.1	83	W	.....	.....	1	.....	.....	.....	.....	0.05	1.3	Clear	H. A. Johnson.
Esquimault, B. C	30.42	772.7	30.47	773.9	38.1	3.4	100	N	.....	.....	.....	.....	10	.....	.....	0	0	Cloudy.....	W. H. Revis.
*Father Point, Quebec	30.13	765.3	30.15	765.8	31	— 0.6	81	W	2	0.9	.....	.....	10n	.....	SW	0	0	Threatening	J. McWilliams.
Fredericton, N. B	30.18	766.6	30.25	768.3	22.0	— 5.6	86	NW	7.0	3.1	.....	.....	10s?	.....	.....	0	0	Clear.....	Prof. Harrison.
*Fort Garry, Manitoba	28.96	735.6	29.84	757.9	12	—11.1	92	SW	4	1.8	.....	Haze	Haze	S	S	0	0	Hazy.....	James Stewart.
Goderich, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	H. J. Strang, M. A.
Granton, Ontario	28.91	734 3	30.05	763.3	33.1	0.6	99	SE	.....	.....	1	.....	10n	.....	.....	.....	.....	Raining.....	James Grant.
*Halifax, N. S	30.03	762.7	30.17	766.3	28	— 2.2	79	W	4	1.8	.....	0	0	.....	.....	0	0	Clear.....	F. Allison, M. A.
Hamilton, Ontario	29.76	755 9	30.15	765.8	32.5	0.3	90	E	.....	.....	3	10cs	.....	S	.....	0	0	Cloudy.....	Geo. Dickson, M. A
Heart's Content, N. F	29.98	761.5	30.01	762.2	32	0.0	89	SW	.....	.....	1	.....	10	.....	.....	0.01	0.3	Overcast.....	E. Weedon.
*Kingston, Ontario	29.88	758.9	30.23	767.8	35	1.7	83	S	2	0.9	.....	8c	0	Calm	.....	0	0	Fair	S. Woods, M. A.
Little Glace Bay, N. S	30.04	763.0	30.08	764.0	31.0	— 0.6	.....	SW	4	1.8	.....	.....	10n	.....	.....	0	0	Overcast	C. H. Rigby.
*Montreal, Quebec	30.05	763.3	30.26	768.6	33	0.6	87	SW	9	4.0	.....	.....	8s	.....	W	Inap.	Inap.	Cloudy.....	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.40	746.7	30.12	765 0	32	0.0	79	SE	.....	.....	.....	5k	5ks	SE	SE	0	0	Cloudy.....	Rev. R. Mosley.
Peterboro, Ontario	29.42	747.3	30.21	767.3	26.3	— 3.2	99	Calm	.....	.....	0	.....	10s	.....	.....	0	0	Cloudy.....	J. F. Jeffers, B. A.
Port Dover, Ontario	29.41	747.0	30.12	765.0	40	4.4	73	S	7	3.1	.....	10k	0	SW	.....	0	0	Cloudy.....	H. Morgan.
Port Hastings, N. S	30.06	763.5	30.12	765.0	42.6	5.9	.....	W	4	1.8	.....	.....	.....	.....	.....	0	0	Fine	Peter Grant.
Port Stanley, Ontario	29.41	747.0	30.08	764.0	40	4.4	66	E	18	8.0	.....	.....	10n	.....	S	0	0	Cloudy.....	M. Payne.
*Quebec, Quebec	29.90	759.4	30.24	768.1	30	— 1.1	89	SW	2	0.9	.....	.....	10n	.....	SW	0.05	1.3	Cloudy.....	Capt. Ashe, R. N.
*Rockliffe, Ontario	29.69	754.1	30.17	766.3	33	0.6	94	E	4	1.8	.....	.....	10s	.....	SE	Inap.	Inap.	Cloudy.....	W. H. McIntyre.
St. John, N. B	30.08	764.0	30.25	768.3	26	— 3.3	94	NW	6	2.7	.....	0	0	.....	.....	0	0	Clear.....	G. Murdock, C. E.
*Saugeen, Ontario	29.32	744.7	30.01	763.0	32	0.0	91	SE	7	3.1	.....	.....	10s	.....	.....	0	0	Cloudy.....	K. Stewart.
Stayner, Ontario	29.31	744.5	30.13	765.3	28	— 2.2	83	SE	5	2.2	.....	.....	10n	.....	SE	0	0	Threatening	R. J. Cole.
Stratford, Ontario	28.75	730.2	30.08	764.0	31.2	— 0.4	87	SE	5.0	2.2	.....	.....	10s	.....	.....	0	0	Cloudy.....	C. J. MacGregor, M. A.
*Sydney, C. B	30.07	763.8	30.10	764.5	31	— 0.6	79	W	8	1.3	.....	.....	10ks	.....	W	0.03	0.8	Cloudy.....	T. C. Hill.
*Toronto, Ontario	29.76	755.9	30.17	766.3	31	— 0.6	95	SW	3	1.3	.....	.....	10n	.....	Calm	0	0	Cloudy.....	Magnetic Observatory.
Windsor, N. S	30.08	764.0	30.18	766.6	27.0	— 2.8	90	W	8	3.6	.....	0	2k	.....	.....	0	0	Clear.....	Prof. John E. Oram.
Woodstock, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Montgomery.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	30.0	— 1.1	89	S	.....	.....	.....	5k	10s;n	W	.....	0.01	0.3	Threatening	John Delany.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	30.09	764.3	30.34	770.6	26	— 3.3	73	S	4	1.8	.....	5ck	Haze	NW	Calm	0	0	Fair	
Alpena, Michigan	29.26	743.2	29.91	759.7	37	2.8	90	SE	5	2.2	.....	.....	10s	.....	SE	0	0	Cloudy	
Atlantic City, New Jersey	30.37	771.4	30.39	771.9	41	5.0	57	S	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Augusta, Georgia	30.14	765.5	30.33	770.4	45	7.2	84	Calm	0	0	.....	.....	8s;fg	.....	SE;E	0	0	Foggy	
Baltimore, Maryland	30.30	769.6	30.35	770.9	33	0.6	79	SW	1	0.4	.....	5c	Fog	Calm	Calm	0	0	Foggy	
Barnegat, New Jersey	30.36	771.1	30.38	771.6	33	0.6	79	SW	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Bismarck, Dakota	27.96	710.2	29.70	754.4	22	— 5.6	85	NW	24	10.7	.....	10cs	0	Calm	.....	0	0	Cloudy	
Boise City, Idaho	27.58	700.5	30.43	772.9	20	— 6.7	70	SW	2	0.9	.....	0	0	.....	.....	Inap.	Inap.	Clear	
Boston, Massachusetts	30.19	766.8	30.36	771.1	30	— 1.1	68	W	2	0.9	.....	5cs	Sm'e	W	.....	0	0	Fair	
Brackettville, Texas	28.71	729.2	29.73	755.1	43	6.1	75	Calm	0	0	.....	0	2s	.....	Calm	0.05	1.3	Fair	
Breckenridge, Minnesota	28.53	724.6	29.53	750.0	29	— 1.7	100	N	20	8.9	.....	.....	10n	.....	Calm	Inap	Inap.	Light snow	
Brownsville, Texas	29.83	757.7	29.89	759.2	64	17.8	100	Calm	0	0	.....	.....	10s	.....	Calm	0.46	11.7	Cloudy	
Buffalo, New York	29.40	746.7	30.13	765.3	32	0.0	79	SE	6	2.7	.....	.....	10s	.....	Calm	0	0	Cloudy	
Burkes, Arizona	.....	.....	.....	.....	30	— 1.1	47	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Burlington, Vermont	30.02	762.5	30.20	769.4	35	1.7	79	S	3	1.3	.....	5c	2s	Calm	S	0	0	Fair	
Cairo, Illinois	29.38	746.2	29.77	756.1	49	9.4	93	S	20	8.9	.....	.....	10n	.....	S	0.68	14.7	Light rain	
Camp Grant, Arizona	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Camp Verde, Arizona	26.90	683.2	30.38	771.6	27	— 2.8	88	W	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Campo, California	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Cape Hatteras, N. Carolina	30.45	773.4	30.46	773.7	41	5.0	91	N	6	2.7	.....	5cs	0	NW	.....	0	0	Fair	
Cape Henry, Virginia	30.39	771.9	30.41	772.4	36	2.2	61	SW	12	5.4	.....	8c	0	.....	NW	0	0	Fair	
Cape Lookout, N. Carolina	30.42	772.7	30.44	773.2	42	5.6	83	NE	12	5.4	.....	10cs	0	NW	.....	0	0	Cloudy	
Cape May, New Jersey	30.35	770.9	30.38	771.6	44	6.7	67	SW	22	9.8	.....	0	0	.....	.....	0	0	Clear	
Charleston, South Carolina	30.29	769.4	30.36	771.1	58	14.4	81	S	6	2.7	.....	.....	10s	.....	SE	0	0	Threatening	
Cheyenne, Wyoming	23.84	605.5	29.77	756.1	13	—10.6	62	NW	25	11.2	.....	0	0	.....	.....	0	0	Clear	
Chicago, Illinois	29.00	736.6	29.69	754.1	40	4.4	82	S	12	5.4	.....	.....	10s	.....	Calm	0.34	8.6	Threatening	
Cincinnati, Ohio	29.28	743.7	29.94	760.5	41	5.0	82	SE	10	4.5	.....	.....	10n	.....	SE	0.44	11.2	Light rain	
Cleveland, Ohio	29.33	745.0	30.08	764.0	38	3.3	63	SE	18	8.0	.....	.....	10s	.....	Calm	0	0	Cloudy	
Concho, Texas	27.83	706.9	29.54	750.3	34	1.1	61	SW	4	1.8	.....	0	0	.....	.....	0.02	0.5	Clear	
Corsicana, Texas	29.33	745.0	29.80	756.9	45	7.2	92	SW	8	3.6	.....	0	2s	.....	Calm	2.10	51.6	Clear	
Davenport, Iowa	29.95	735.3	29.58	751.3	38	3.3	90	SE	20	8.9	.....	.....	10n	.....	Calm	0.65	16.5	Light rain	
Denison, Texas	28.94	735.1	29.75	755.6	42	5.6	83	SW	8	3.6	.....	0	0	.....	.....	0.75	19.1	Clear	
Denver, Colorado	24.63	625.6	29.85	758.2	24	— 4.4	62	N	8	3.6	.....	.....	8s	.....	Calm	0	0	Cloudy	
Detroit, Michigan	29.25	742.9	29.93	760.2	39	3.9	100	S	4	1.8	.....	.....	10n	.....	Calm	0.04	1.0	Light rain	
Dodge City, Kansas	27.11	688.6	29.44	747.8	30	— 1.1	89	NW	18	8.0	.....	0	5s	.....	NW	0.03	0.8	Fair	
Dubuque, Iowa	28.85	732.8	29.55	750.6	36	2.2	90	S	4	1.8	.....	.....	10n	.....	Calm	0.81	20.6	Light rain	
Duluth, Minnesota	28.89	733.8	29.57	751.1	35	1.7	95	E	32	14.3	.....	.....	10n	.....	E	0.04	1.0	Light snow	
Eagle Pass, Texas	29.10	739.1	29.85	758.2	43	6.1	92	NW	1	0.4	.....	0	0	.....	.....	0.13	3.3	Clear	
Eastport, Maine	30.20	767.1	30.27	768.8	29	— 1.7	77	NW	3	1.3	.....	2ck	Haze	NW	Calm	0	0	Fair	
Erie, Pennsylvania	29.35	745.5	30.08	764.0	37	2.8	62	S	16	7.2	.....	10cs	Haze	SW	.....	0	0	Cloudy	
Escanaba, Michigan	29.11	739.4	29.77	756.1	37	2.8	90	SE	14	6.3	.....	.....	10n	.....	Calm	0.15	3.8	Light rain	
Florence, Arizona	28.51	724.1	30.11	764.8	40	4.4	56	W	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Fort Bayard, New Mexico	23.93	607.8	29.93	760.2	30	— 1.1	68	W	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Fort Craig, New Mexico	25.43	645.9	.....	.....	32	0.0	69	NW	28	12.5	.....	0	5s	.....	NW	0	0	Fair	
Fort Gibson, Indian Ter	29.13	739.9	29.67	753.6	38	3.3	90	W	2	0.9	.....	0	0	.....	.....	0.62	15.7	Clear	
Fort Griffin, Texas	28.50	723.9	29.77	756.1	46	7.8	47	W	9	4.0	.....	0	0	.....	.....	0.28	7.1	Clear	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	28.48	723.4	29.61	752.1	33	0.6	89	N	1	0.4	.....	0	0	.....	.....	0.84	21.3	Clear	
Galveston, Texas	29.87	758.7	29.91	759.7	58	14.4	100	S	3	1.3	.....	.....	Fog	.....	Calm	2.22	56.4	Foggy	
Grand Haven, Michigan	29.13	739.9	29.78	756.4	40	4.4	82	SE	6	2.7	.....	.....	10n	.....	Calm	0.03	0.8	Light rain	
Indianapolis, Indiana	29.05	737.9	29.83	757.7	41	5.0	91	SE	11	4.9	.....	.....	10n	.....	SE	0.39	9.9	Light rain	
Indianola, Texas	29.88	758.9	29.91	759.7	57	13.9	100	NW	6	2.7	.....	.....	Fog	.....	Calm	0.97	24.6	Foggy	
Jacksboro, Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Jacksonville, Florida	30.29	769.4	30.31	769.9	59	15.0	76	E	2	0.9	.....	10k	0	SE	.....	0	0	Cloudy	
Keokuk, Iowa	28.90	734.0	29.51	749.5	41	5.0	91	SE	14	6.3	.....	.....	10s	.....	SE	0.54	13.7	Cloudy	
Key West, Florida	30.10	764.5	30.13	765.3	72.0	22.2	71	SE	14	6.3	.....	5c	2ks	W	SE	0	0	Fair	
Kityhawk, North Carolina	30.45	773.4	30.47	773.9	34	1.1	91	Calm	0	0	.....	10cs	0	NW	.....	0	0	Cloudy	
Knoxvile, Tennessee	29.13	739.9	30.17	766.3	35	1.7	70	NE	3	1.3	.....	.....	10s	.....	SW	Inap.	Inap.	Cloudy	
La Crosse, Wisconsin	28.76	730.5	29.49	749.0	39	3.9	100	S	13	5.8	.....	.....	10n	.....	S	0.37	9.4	Light rain	
La Mesilla, New Mexico	25.99	660.1	30.14	765.5	37	2.8	53	E	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Laredo, Texas	.....	.....	.....	.....	50	10.0	100	S	3	1.3	.....	.....	Fog	.....	Calm	0.01	0.3	Foggy	
Leavenworth, Kansas	28.63	727.2	29.43	748.3	40	4.4	95	SW	10	4.5	.....	.....	10s	.....	Calm	1.34	34.0	Cloudy	
Los Angeles, California	29.77	756.1	30.11	764.8	47	8.3	77	N	7	3.1	.....	0	0	.....	.....	0	0	Clear	
Louisville, Kentucky	29.32	744.7	29.89	759.2	44	6.7	91	SE	3	1.3	.....	.....	10n	.....	S	0.58	14.7	Heavy rain	
Lynchburg, Virginia	29.62	752.3	30.33	770.4	36	2.2	61	SW	2	0.9	.....	0	Haze	.....	Calm	0	0	Hazy	
Maricopa Wells, Arizona	.....	.....	.....	.....	25	— 3.9	38	E	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Marquette, Michigan	29.16	740.7	29.58	758.9	33	0.6	79	SE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Mason, Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Memphis, Tennessee	29.49	749.0	29.81	757.2	53	11.7	100	S	8	3.6	.....	.....	10n	.....	S	0.64	16.3	Light rain	
Milwaukee, Wisconsin	28.99	736.3	29.68	753.9	36	2.2	100	S	17	7.6	.....	.....	10n	.....	.....	0.21	5.3	Light rain	
Mobile, Alabama	29.99	761.7	30.03	762.7	60	15.6	97	SE	15	6.7	.....	.....	10n	.....	SE	0.32	8.1	Light rain	
Montgomery, Alabama	29.88	758.9	30.12	765.0	56	13.3	87	SE	13	5.8	.....	.....	10n	.....	SE	0.19	4.8	Light rain	
Morgantown, West Virginia	29.10	739.1	30.21	767.3	29	— 1.7	73	S	1	0.4	.....	.....	10s	.....	SW	0	0	Cloudy	
Mt. Washington, N. H.	23.77	603.8	30.13	765.3	12	—11.1	79	NW	39	17.4	.....	0	10s	.....	NW	0	0	Fair	
Nashville, Tennessee	29.38	746.2	29.91	759.7	49	9.4	93	SE	12	5.4	.....	.....	10n	.....	SE	0.08	2.0	Light rain	
New Haven, Connecticut	30.27	768.8	30.39	771.9	30	— 1.1	79	NW	2	0.9	.....	0	Sm'e	.....	.....	0	0	Clear	
New London, Connecticut	30.33	770.4	30.38	771.6	32	0.0	79	W	3	1.3	.....	0	Fog	.....	Calm	0	0	Clear	
New Orleans, Louisiana	29.92	760.0	29.97	761.2	63	17.2	94	SE	8	3.6	.....	.....	10s	.....	Calm	0.79	20.1	Cloudy	
Newport, Rhode Island	30.32	770.1	30.38	771.6	34	1.1	70	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
New York, New York	30.20	767.1	30.38	771.6	35	1.7	70	SW	6	2.7	.....	0	Fog	.....	Calm	0	0	Clear	
Norfolk, Virginia	30.37	771.4	30.44	773.2	32	0.0	89	S	5	2.2	.....	.....	Fog	.....	Calm	0	0	Foggy	
North Platte, Nebraska	26.78	680.2	29.40	746.7	27	— 2.8	88	NW	36	16.1	.....	.....	10s	.....	Calm	0.51	13.0	Cloudy	
Olympia, Washington Ter.	30.44	773.2	30.48	774.2	33	0.6	95	SE	2	0.9	.....	.....	Fog	.....	Calm	0	0	Dense fog	
Omaha, Nebraska	28.32	719.3	29.39	746.5	36	2.2	90	W	6	2.7	.....	.....	10s	.....	Calm	0.79	20.1	Cloudy	
Oswego, New York	29.90	759.4	30.24	768.1	32	0.0	68	SE	8	3.6	.....	5cs	0	Calm	.....	0	0	Fair	
Pembina, Dakota	28.91	734.3	29.79	756.7	17	— 8.3	84	S	4	1.8	.....	.....	10s	.....	Calm	0	0	Cloudy	
Philadelphia, Pennsylvania	30.33	770.4	30.33	771.6	33	0.6	89	SW	7	3.1	.....	5c	Haze	SW	Calm	0	0	Fair	
Phœnix, Arizona	.....	.....	.....	.....	29	— 1.7	67	NE	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Pike's Peak, Colorado	17.25	438.1	29.46	748.3	—11	—23.9	100	N	34	15.2	.....	.....	10n	.....	Calm	0.08	2.0	Light snow	
Pioche, Nevada	24.13	612.9	29.90	759.4	16	— 8.9	66	N	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Pittsburg, Pennsylvania	29.31	744.5	30.16	766.1	30	— 1.1	89	E	3	1.3	.....	.....	Fog	.....	Calm	0	0	Foggy	
Port Huron, Michigan	29.29	744.0	29.97	761.2	36	2.2	90	SE	5	2.2	.....	.....	10s	.....	Calm	0	0	Threatening	
Portland, Maine	30.26	768.6	30.31	769.9	32	0.0	79	W	10	4.5	.....	2cs;k	Haze	Calm	.....	0	0	Fair	
Portland, Oregon	30.44	773.2	30.55	776.0	35	1.7	100	NE	1	0.4	.....	.....	Fog	.....	Calm	Inap.	Inap.	Foggy	
Prescott, Arizona	24.87	631.7	30.23	767.8	24	— 4.4	36	E	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Punta Rassa, Florida	30.18	766.6	30.20	767.1	62	16.7	77	Calm	0	0	.....	0	0	.....	.....	0	0	Hazy	
Red Bluff, California	29.96	761.0	30.34	770.6	43	6.1	59	N	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Rochester, New York	29.55	750.6	30.19	766.8	35	1.7	80	S	4	1.8	.....	.....	10s;sm'	.....	sw;calm	0	0	Cloudy	

UNITED STATES SERIES.—Continued.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches:	Barometer. Corrected for instrum'tal error and temperature. Millimeters	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Roseburg, Oregon	29.87	758.7	30.48	774.2	32	0.0	94	NE	5	2.2	.....	.....	10s	.....	Calm	0.07	1.8	Cloudy.....	
Sacramento, California	30.17	766.3	30.26	768.6	37	2.8	71	N	5	2.2	.....	0	0	.....	.....	0	0	Clear.....	
St. Louis, Missouri	29.08	738.6	29.65	753.1	30	3.9	73	SE	12	5.4	.....	.....	10s	.....	S	0.18	4.6	Cloudy.....	
St. Marks, Florida	30.20	767.1	30.21	767.3	55	12.8	93	SE	7	3.1	.....	.....	10n	.....	W	0.22	5.6	Light rain...	
St. Paul, Minnesota	28.62	726.9	29.44	747.8	34	1.1	90	E	6	2.7	.....	.....	10s	.....	.....	0.35	8.9	Cloudy.....	
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salt Lake City, Utah	25.81	655.6	30.14	765.5	24	—4.4	87	SW	10	4.5	.....	0	5n	.....	Calm	0.25	6.3	Light snow..	
San Antonio, Texas	29.10	741.4	29.78	756.4	45	7.2	76	NW	1	0.4	.....	0	5s	.....	Calm	0.06	1.5	Fair	
San Diego, California	30.06	763.5	30.13	765.3	46	7.8	54	SE	2	0.9	.....	0	0	.....	.....	0	0	Clear.....	
Sandusky, Ohio	29.31	744.5	30.00	762.0	42	5.6	65	S	8	3.6	.....	.....	10n	.....	Calm	0.05	1.3	Light rain...	
Sandy Hook, New Jersey	30.35	770.9	30.37	771.4	35	1.7	80	SW	13	5.8	.....	2c	0	W	.....	0	0	Fair	
San Francisco, California	30.18	766.6	30.26	768.3	48	8.9	82	NE	6	2.7	.....	0	0	.....	.....	0	0	Clear.....	
Santa Fé, New Mexico	22.98	583.7	29.52	749.8	17	—8.3	67	NW	10	4.5	.....	0	1s	.....	NW	0.07	1.8	Clear.....	
Savannah, Georgia	30.25	768.3	30.34	770.6	52	11.1	86	NE	4	1.8	.....	.....	10s	.....	SW	0	0	Threatening	
Shreveport, Louisiana	29.64	752.8	29.86	758.4	57	13.9	100	S	6	2.7	.....	.....	10s	.....	S	1.11	28.2	Cloudy.	
Smithville, North Carolina	30.36	771.1	30.39	771.9	53	11.7	93	NE	12	5.4	.....	.....	10s	.....	Calm	0	0	Cloudy.....	
Springfield, Massachusetts	30.16	766.1	30.31	769.9	25	—3.9	75	Calm	0	0	.....	0	Fog	.....	.....	0	0	Foggy	
Stockton, Texas	29.82	681.2	29.82	757.4	42	5.6	19	W	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Thatcher's Island, Mass	30.29	769.4	30.35	770.9	33	0.6	69	W	12	5.4	.....	2cs	0	W	.....	0	0	Fair	
Toledo, Ohio	29.25	742.9	29.94	760.5	39	3.9	100	S	4	1.8	.....	.....	10n	.....	S	0.03	0.8	Light rain...	
Tucson, Arizona	27.68	703.1	30.23	767.8	35	1.7	28	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Tybee Island, Georgia	30.30	769.6	30.33	770.4	58	14.4	87	SE	4	1.8	.....	.....	10ks	.....	SW	0	0	Cloudy.....	
Umatilla, Oregon	30.24	768.1	.....	.....	24	—4.4	60	SE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Vicksburg, Mississippi	29.66	753.4	29.92	760.0	61	16.1	94	S	8	3.6	.....	.....	10s	.....	SE	1.22	31.0	Cloudy.....	
Virginia City, Montana	24.39	619.5	29.87	758.7	11	—11.7	80	NE	6	2.7	.....	0	0	.....	.....	0	0	Clear.....	
Visalia, California	29.92	760.0	30.32	770.1	33	0.6	100	Calm	0	0	.....	0	Fog	.....	Calm	0	0	Clear.....	
Washington, D. C	30.21	767.3	30.33	770.4	29	—1.7	84	S	1	0.4	.....	5cs	2s;sk	W	W	0	0	Smoky.....	
Wickenburg, Arizona	.....	.....	.....	.....	20	—6.7	13	N	.....	.....	.....	0	0	.....	.....	0	0	Clear.....	
Wilmington, N. Carolina	30.31	769.9	30.39	771.9	47	8.3	85	E	10	4.5	.....	.....	10s	.....	E	0	0	Cloudy.....	
Winnemucca, Nevada	25.97	659.6	30.33	770.4	9	12.8	78	SW	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Wood's Holl, Mass	30.34	770.6	30.40	772.1	39	3.9	63	N	5	2.2	.....	Haze	0	.....	.....	0	0	Clear	
Yankton, Dakota	28.15	715.0	29.45	748.0	28	—2.2	88	NW	12	5.4	.....	.....	10n	.....	Calm	0.50	12.7	Light snow..	
Yuma, Arizona	29.98	761 5	30.17	766.3	42	5.6	67	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.....	
Sub-Series.																			
York Factory, B. A	29.98	760.2	29.98	761.5	—0.5	—18.1	85	SW	8	3.6	.....	.....	10s	.....	.....	0.35	8.9	Snowing.....	J. Fortescue, W. Wood.
Havana, Cuba, W. I	30.05	763.3	30.07	763.8	70	21.1	84	SE	7.2	3.2	.....	2c	0	W	.....	0	0	Fair	Chas. Hasselbrink.
Kingston, Jamaica, W. I	30.13	765.3	30.14	765.5	77	25.0	90	Calm	0	0	.....	5c	2n	Calm	SE	0.34	8.6	.....	James Gall.
Navassa, W. I	29.91	759.7	29.99	761.7	80	26.7	.....	NE	30	13.4	.....	.....	.....	.....	.....	0	0	Cloudy.....	F. M Everett.
St. Thomas, W. I	.....	.....	.....	.....	78	25.6	91	NE	22	9.8	.....	2c	8k	E	.....	0.3	8.	Cloudy.....	G. O. Gellich.
Paramaribo, D. Guiana, S. A	.....	.....	30.00	762.0	83	28.3	70	E	.....	.....	2	6ck	5k	E	.....	0.150	3.81	Fair	C. J. Hering.
Batavia, Dutch Guiana, S. A	30.08	762.8	30.04	763.0	84.2	29	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.256	6.50	Cloudy.....	Dr. H. Groot.
Medellin, Colombia, S. A	25.18	639.6	.....	.....	62.0	16.7	87	Calm	.....	.....	0	0	5s	.....	.....	0	0	Fair	Thomas Herran.
Honolulu, Oahu, H. I	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Daniel Smith.
Makawao, Maui, H. I	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. L. Clarke.

Note.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,709 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,893 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,560 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft.. or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.: Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,323 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.83 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	BAROMETER. As reported.* Inches.	BAROMETER. As reported.* Millimeters.	BAROMETER. Attached Thermometer. Fahrenheit.	BAROMETER. Attached Thermometer. Centigrade.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Up'er From—	CLOUDS. Direction. Low'r From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	SEA-SWELL. Character.	SEA-SWELL. Direction from—	WEATHER.	OBSERVER.
Navy Yard Mare Island, Cal.	30.19	766.8	42	5.6	42	5.6	91	SE	2	0.9	....	.....	0	.....	.....	0	0	.....	.....	Clear.....	
Navy Yard, Pensacola, Fla.	30.20	767.1	.....	.....	62	16.7	94	ENE	17	7.6	....	.....	10	.....	.....	4.16	105.7	.....	.....	Rain & fog...	
Navy Yard, Portsmouth, N.H	30.33	770.4	64	17.8	27	—2.8	76	W	2	0.9	....	.....	.....	.....	.....	0	0	.....	.....	Cloudy.....	
Naval Hospital, Yokohama, Japan.....	30.00	762.0	53	11.7	47	8.3	55	NNE	6	2.7	.....	.....	4k	.....	SSE	0	0	.....	.....	Fair.....	
Adams. Mayne Harbor, Chili.....	29.64	752.8	50	10.0†	49	9.4	71	Var.	.....	.....	1	.....	8	.....	NW	Heavy	Heavy	None	.....	D. clouds.. ..	
Alert, Yokohama, Japan.....	30.08	764.0	.....	.....	50	10.0	72	N	.....	.....	5–7	.....	4	.....	N	.....	.....	Moderate	S	D. clouds.....	
Alliance, Constantinople, Turkey.	30.29	769.4	73	22.8	58	14.4	82	N	.....	.....	1–2	.....	10	.....	N	.....	.....	.....	.....	Overcast.....	
Ashuelot. Shanghai, China.....	30.36	771.1	52	11.1	40	4.4	91	N	.....	.....	1	.....	10	.....	Calm	.....	.....	.....	.....	Misty.....	
Canonicus, New Orleans, La.....	29.95	760.7	49	9.4	63	17.2	89	SE	.....	.....	3	.....	10	.....	.....	.....	.....	.....	.....	Cloudy.....	
Colorado, New York, N. Y.....	30.34	770.6	34	1.1	34	1.1	79	SW	2	0.9	.....	.....	5	.....	SSW	0	0	.....	.....	Foggy	
Despatch, Constantinople, Turkey.	30.31	769.9	84	28.9	56	13.3	81	NE	.....	.....	2	.....	8	.....	NE	.....	.....	.....	.....	Cloudy.....	
Essex, Libreville, Lower Guinea.	29.84	757.9	81	27.2	83	28.3	91	ESE	.....	.....	2	.....	10	.....	.....	.....	.....	Smooth	W	Overcast.....	
Franklin, Norfolk, Va.....	30.51	774.9	38	3.3	37	2.8	62	S	5	2.2	.....	.....	1	.....	S	0	0	.....	.....	Clear.....	
Guard, Lisbon, Portugal.....	30.18	766.6	61	16.1	61	16.1	82	Calm	.....	.....	0	.....	10	.....	.....	.....	.....	.....	.....	Misty.....	
Lackawana, Mare Island, Cal.....	30.31	769.9	.....	.....	47	8.3	92	E	.....	.....	0–1	.....	0	.....	.....	.....	.....	.....	.....	Blue sky.....	
Marion, N. 36° 40,′ E. 20° 18′.....	29.96	761.0	68	20.0	67	19.4	89	S	.....	.....	4	.....	6	.....	E	0	0	Moderate.	.....	D. clouds.....	
Michigan, Erie, Pa.....	29.60	751.8	68	20.0	39	3.9	55	SSW	.....	.....	4	.....	10	.....	SW	.....	.....	.....	.....	Cloudy.....	
Monocacy, Nagasaki, Japan.....	30.22	767.6	57	13.9	46	7.8	77	NW	.....	.....	1–3	.....	6	.....	NW	Blank	Blank	.....	.....	D. clouds.....	
Monongahela. Near Suez.....	30.03	762.7	73	22.8	76	24.4	91	N&W	.....	.....	1	.....	0	.....	.....	.....	.....	.....	.....	Blue sky.....	
New Hampshire, Port Royal, S.C.....	30.48	774.2	.....	.....	54	12.2	93	NE	5	2.2	.....	.....	.....	.....	.....	0	0	.....	.....	Blue sky.....	
Omaha, S. 12° 07′, W. 77° 18′.....	30.00	762.0	73	22.8	73	22.8	90	SE	5	2.2	.....	.....	5	.....	SE	0	0	Smooth	.....	Pleasant.....	
Onward, Callao, Peru.....	30.00†	762 0†	73	22.8	70	21.1	85	ESE	.....	.....	4	.....	6	.....	.....	.....	.....	Long	W	Hazy.....	
Ossipee, Norfolk, Va.....	30.52	775.2	67	19.4	39	3.9	82	SW	.....	.....	1	.....	2	.....	Calm	.....	.....	.....	.....	D. clouds.....	
Palos, Shanghai, China.....	30.45	773.4	54	12.2	40	4.4	83	W	.....	.....	0–1	.....	0	.....	.....	.....	.....	.....	.....	Clear.....	
Plymouth, St. Thomas, W. I.....	30.30	769.6	80	26.7	79	26.1	100	NE	.....	.....	6	.....	9	.....	NE	.....	.....	Moderate.	NE	Squally.....	
Powhatan, Hampton Roads, Va.....	.....	.....	.....	.....	44	6.7	100	SSW	4.8	2.1	.....	.....	10	.....	.....	0	0	.....	.....	Overcast.....	
Ranger, Shanghai, China.....	30.58	776.7	.....	.....	44	6.7	75	NW	.....	.....	2	.....	.....	.....	Calm	.....	.....	.....	.....	Pleasant.....	
Rio Bravo, Brownsville, Texas.....	29.78	756.4	.....	.....	65	18.3	100	S	.....	.....	1	.....	10	.....	S	.....	.....	.....	.....	D. clouds.....	
Santee, Annapolis, Md.....	30.39	771.9	61	16.1	36	2.2	70	S	.....	.....	1	.....	7	.....	N	0	0	.....	.....	Cloudy.....	
Saratoga, Hampton Roads, Va.....	.....	.....	.....	.....	38	3.3	100	SW	.....	.....	3	.....	5	.....	Calm	0	0	.....	.....	Clear.....	
St. Louis, League Island, Pa	30.22	767.6	32	0.0	32	0.0	90	SW	1	0.4	.....	.....	8	.....	S	0	0	.....	.....	Cloudy.....	
Swatara, Norfolk, Va.....	30.52	775.2	.....	.....	53	11.7	48	SSE	.....	.....	1	.....	2	.....	S&E	.....	.....	.....	.....	D. clouds.....	
Tennessee, N. 34° 32, E. 138° 59′.....	30.05	763.3	65	18.3	54	12.2	61	W	30	13.4	.....	.....	0	.....	.....	0	0	Moderate.	S&W	Blue sky.....	
Trenton, Villefranche, France.....	29.75	755.6	.....	.....	57	13.9	69	NW	4	1.8	.....	.....	10	.....	S&W	0.5	13.	.....	.....	D. clouds.....	
Vandalia, Villefranche, France.....	29.68	753.9	58	14.4	56	13.3	75	WNW	.....	.....	1	.....	9	.....	•	.....	.....	.....	.....	D. clouds.....	
Wabash, Boston, Mass.....	30.26	768.6	55	12.8	31	— 0.6	100	W	6	2.7	.....	.....	5	.....	Calm	0	0	.....	.....	D. clouds.....	
Wyoming, Washington, D. C.....	30.59†	777.0†	.....	.....	29	— 1.7	.....	NE	.....	.....	1	.....	5	.....	.....	.....	.....	.....	.....	Misty.....	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. The position given for the Plymouth is that at noon, local time, instead of that at 7:35 a. m., Washington time.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.	Character.	Direction from—		
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—				
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama, N. 21° 00′ 30″, W. 107° 59′ 27″			29.75	755.6	79	26.1	91	N			4		4		N	Light	NNW	D. clouds	Capt. Howard.
S. S. City of Peking																			Lt. Z. L. Tanner, U.S.N.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio, Hong-Kong, China			30.14	765.5	69	20.6		ENE			6		10					Overcast	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

NOTE.—The originals give the wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.

S. S. Belgic																			Capt. John Metcalf.
S. S. Gaelic, N. 30° 00′, E. 165° 50′			30.17*	766.3*	71	21.7	100	SSW			4		8			Smooth	NW	D. clouds	Capt. W. H. Kidley
S. S. Oceanic																			Capt. H. Parsell.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. *Aneriod.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig																			Capt. K. Undutsch.
S. S. Nürnberg, N. 31° 25′, W. 37° 29′			30.33	770.4	75.0	23.9	84	SSE			5		8		SSE	Smooth	S	D. clouds	Capt. A. Jaeger.
S. S. Ohio, N. 42° 24′, W. 67° 1′			30.30	769.6	45.0	7.2	68	W			4		8		WNW	Long	E	D. clouds	Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, nor distinguish between upper and lower clouds.

UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Lo'wr	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second	0—10.	0—10.	0—10.	From—	From—	Character	Direction From—		
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, N. 50° 29′, W. 36° 49′			30.01*	762.2*	51	10.6	??	NE			1		5		ENE	Heavy	NW	Dull	Captain Sargent.
S. S. Ohio, Philadelphia, Pa			30.37	771.4	37	2.8	90	Calm			0		10		Calm			Hazy	Captain Morrison.
S. S. Pennsylvania, Liverpool			30.24†	768.1†	54	12.2	100	SE			2		10					Foggy	Captain Harris.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. *Aneroid. † Corrected for temperature and elevation, instrumental error not known.

RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

S. S. Nederland																			Capt. Randle.
S. S. Switzerland																			
S. S. Vaderland																			Capt. Jackson.
																			Capt. Nichols.

ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

S. S. Hibernian																			
S. S. Scandinavian, N. 51° 39′, W. 36° 29′			29.88	758.9	41	5.0		S			3		9		S	High	W	D. clouds	Capt. W. Richardson.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, Kennebunk, Maine			30.30	769.6	40	4.4	82	N	3	1.3			Haze		Calm			Clear	Capt. James Jorgensen.

NOTE.—The originals for the schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer. U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON DECEMBER 5, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:48 P. M. GREENWICH mean time.
0:58 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:18 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:28 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Barometer: Corrected for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours	.....	.....	30.14	765.5	63.3	17.4	72	NW	.....	.....	3	.....	6	.....	.....	0	0	Cloudy	Michel.
Algiers	.....	.....	29.99	761.7	57.6	14.2	76	NW	.....	.....	1	.....	10	.....	.....	0.256	6.5	Covered	Peter.
La Calle	.....	.....	29.93	760.2	50.9	10.5	90	W	.....	.....	4	.....	8	.....	.....	1.535	39.0	Very cloudy	Fleury.
Tunis	.....	.....	29.83	757.6	56.3	13.5	86	W	.....	.....	4	.....	10	.....	.....	0.228	5.8	Covered	Jacques.
Sfax	.....	.....	29.94	760.5	59.0	15.0	.....	W	.....	.....	4	.....	9	.....	.....	0	0	Covered	Husson.
Saida	.....	.....	30.12	765.0	50.4	10.2	64	WNW	.....	.....	4	.....	4	.....	.....	0	0	Cloudy	Millot.
Tebessa	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Bassières.
Geriville	.....	.....	30.10	764.4	47.1	8.4	89	N	.....	.....	4	.....	4	.....	.....	0	0	Cloudy	Lemaillot.
Laghouat	.....	.....	30.09	764.2	53.6	12.0	33	NW	.....	.....	6	.....	2	.....	.....	0	0	Fair	Guyot.
Biskra	.....	.....	30.00	762.1	59.5	15.3	39	NW	.....	.....	4	.....	0	.....	.....	0	0	Cloudy	Kuntz.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890 ? meters, or 2,919.9 ? feet; Tebessa, 1,088 ? m., or 3,569.4 ? ft.; Geriville, 1,360 ? m.; or 4,461.7 ? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

STATIONS.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Barometer: Corrected for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Agram	29.24	742.6	29.80	756.8	44.6	7.0	68	NE	.....	.....	3	.....	10	.....	.....	0.492	12.5	Raining	Prof. Ivan Stozir
Cracow, I. R. Observatory	29.27	743.4	30.06	763.5	40.6	4.8	97	NE	.....	.....	1	.....	10	.....	.....	0.016	0.4	.....	Dr. Wierzbiski.
Eperies	29.09	738.9	29.98	761.6	45.9	7.7	93	Calm	.....	.....	0	.....	10	.....	.....	0.244	6.20	.....	Julius Mikolik.
Gratz	28.65	727.6	29.03	760.1	42.1	5.6	86	N	.....	.....	1	.....	10	.....	.....	0.016	0.4	.....	Andreas Rospini.
Hermannstadt	28.52	724.4	29.95	760.7	50.4	10.2	68	SE	.....	.....	1	.....	9	.....	.....	0	0	.....	Prof. Reissenberger.
Kremsmünster	28.60	726.4	29.98	761.4	40.3	4.6	84	Calm	.....	.....	0	.....	10	.....	.....	0.091	2.3	.....	Prof. C. Wagner.
Lemberg	29.07	738.3	30.09	764.2	41.0	5.0	94	SE	.....	.....	1	.....	10	.....	.....	0	0	.....	Dr. T. Stanecki.
Pola	29.57	751.0	29.68	753.9	50.5	10.3	79	ENE	.....	.....	1	.....	10s	.....	.....	0.599	15.23	.....	I.R.HydrographicOffice
Szathmar	29.76	755.6	30.22	767.5	54.3	12.4	61	E	.....	.....	3	.....	9	.....	.....	0	0	.....	Johann Tamas, S. J.
Szegedin	29.58	751.2	29.86	758.4	48.6	9.2	98	E	.....	.....	1	.....	10	.....	.....	0.541	13.75	.....	Karl Stancel.
Trieste	29.66	753.4	29.72	755.0	49.5	9.7	60	ENE	.....	.....	3	.....	10	.....	.....	0.189	4.8	Raining	P. Busin.
Vienna	29.25	743.0	29.97	761.2	40.8	4.9	94	N	.....	.....	2	.....	10	.....	.....	0.303	7.7	Raining	I. R. Central Met. Obs'y
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day; at Syathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

STATIONS.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Barometer: Corrected for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Arlon	28.48	723.5	30.04	762.9	38.1	3.4	82	W	.....	.....	0	.....	10	.....	.....	0.008	0.2	.....	Prof. M. Passau.
Brussels	29.78	756.4	29.99	761.7	41.4	5.2	88	ENE	.....	.....	1	.....	10	.....	S	.....	.....	Raining	Royal Observatory.
Furnes	29.93	760.2	29.95	760.8	41.4	5.2	100	SE	.....	.....	2	.....	10	.....	.....	0.008	0.2	Dense fog	M. E. de Cae.
Maeseyck	29.86	758.5	29.99	761.8	41.9	5.5	89	ENE	.....	.....	2	.....	10	.....	.....	0	0	Foggy	M. Pierrot.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	29.84	757.9	29.95	760.7	41.7	5.4	.....	S	6	2.7	.....	.....	7	.....	.....	0.370	9.40	Misty	W. Boswell.
Ardroscan	29.88	758.9	29.90	759.4	43	6.1	.....	ESE	.....	.....	1	.....	8	.....	.....	.....	.....	Misty.	William McNeil.
Armagh, Observatory	.....	.....	29.87	758.7	46.0	7.8	.....	SSE	15	6.7	.....	.....	10	.....	.....	.....	.....	Overcast	S. Call, for Dr. Robinson
Bidston, (Liverpool Obs.)	.....	.....	29.94	760.5	41.2	5.1	.....	ESE	15	6.7	.....	.....	10	.....	.....	.....	.....	Foggy	John Hartnup.
Birr Castle, (Parsonstown)	.....	.....	29.83	757.7	46.1	7.8	.....	SSE	.....	.....	3	.....	10	.....	.....	.....	.....	D. clouds	J. Dreyer.
Bradford, Yorkshire	29.55	750.6	29.94	760.5	43.1	6.2	.....	N	.....	.....	1	.....	10	.....	.....	0	0	Overcast	J. McLandsborough.
Bridgetown, (Barbados)	29.91	759.7	29.94	760.5	80.0	26.7	.....	NE	.....	.....	2	.....	3	.....	.....	.....	.....	D. clouds	Pvt. G. W. Roberts, A.
Cambridge, Observatory	.....	.....	29.95	760.7	42.5	5.8	.....	NW	.....	.....	1	.....	10	.....	.....	.....	.....	Raining	H. Todd. [H. C.
Cardington	.....	.....	29.99	761.7	43.0	6.1	.....	N	.....	.....	1	.....	10	.....	.....	.....	.....	Overcast	John McLaren.
Chatham, School M. E.	29.80	756.9	29.94	760.5	42.7	5.9	.....	Calm	.....	.....	0	.....	10	.....	.....	.....	.....	Overcast	Lt. W. G. Morris, R. E.
Dartmoor	28.47	723.1	29.97	761.2	42.0	5.6	.....	NE	.....	.....	2	.....	7	.....	.....	.....	.....	Fine	Alexander Watt.
Davos Platz (Switzerland)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Francis Redford, M. A.
Donaghadee	29.84	757.9	29.87	758.7	46	7.8	.....	SW	.....	.....	2	.....	10	.....	.....	.....	.....	Overcast	J. Mac Gowan.
Dover	29.91	759.7	29.94	760.5	45	7.2	.....	NW	.....	.....	3	.....	9	.....	.....	.....	.....	Gloomy	J. Costello.
Eccles, (near Manchester)	.....	.....	29.95	760.7	42.9	6.1	.....	NE	0.2	0.1	.....	.....	.....	.....	.....	.....	.....	Foggy	Thomas Mackereth.
Falmouth, Observatory	29.70	754.4	29.93	760.2	49.3	9.6	.....	SE	.....	.....	4	.....	9	.....	.....	.....	.....	Overcast	The Staff.
Fort Napier, (Natal)	27.63	701.8	29.84	757.9	76.2	24.6	.....	NE	.....	.....	3	.....	3	.....	.....	.....	.....	D. clouds	Pvt. G. Salmon, A. H. C.
Free Town, (Sierra Leone)	.....	.....	29.99	761.7	86	30.0	.....	Calm	.....	.....	0	.....	0	.....	.....	.....	.....	Blue sky	.....
Galway, Queen's College	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	30.12	765.0	30.17	766.3	60.7	15.9	.....	W	.....	.....	4	.....	7	.....	.....	.....	.....	D. clouds	Corpl. C. Aitken, A. H. C.
Glasgow, Observatory	29.71	754.6	29.91	759.7	42.3	5.7	.....	ENE	.....	.....	1	.....	.....	.....	.....	.....	.....	Dense fog	D. G. Maclean.
Great Yarmouth	29.94	760.5	29.95	760.7	43	6.1	.....	ESE	.....	.....	2	.....	8	.....	.....	.....	.....	Misty	G. T. Watson.
Greenwich, Royal Obs'y	29.78	756.4	29.96	761.0	43.7	6.5	.....	NNE	.....	.....	1	.....	10	.....	.....	.....	.....	Overcast	The Staff, for G. B. Airy.
Guernsey	29.72	754.9	29.95	760.7	48	8.9	.....	ESE	.....	.....	1	.....	7	.....	.....	.....	.....	D. clouds	Dr. S. E. Hoskins, F. R. S.
Helston	.....	.....	29.90	759.4	49	9.4	.....	SE	.....	.....	3	.....	4c	.....	.....	0.65	16.5	Fine	M. P. Moyle.
Holyhead	29.84	757.9	29.90	759.4	45	7.2	.....	SSW	.....	.....	1	.....	2	.....	.....	.....	.....	Blue sky	John Tilston.
Jersey	29.70	754.4	30.00	762.0	48.6	9.2	.....	SSE	.....	.....	1	.....	8	.....	.....	Blank	Blank	Gloomy	J. Fisher.
Kew, Observatory	.....	.....	29.98	761.5	43.6	6.4	.....	NNW	2	0.9	.....	.....	10	.....	.....	.....	.....	Misty	The Staff.
Kingstown	29.87	758.7	29.90	759.4	47	8.3	.....	SSE	.....	.....	3	.....	7	.....	.....	.....	.....	D. clouds	George Mitchell.
Leicester, Museum	.....	.....	29.90	759.4	43.0	6.1	.....	NE	.....	.....	2	.....	10	.....	.....	.....	.....	Drizzling	Wm. J. Harrison, F. G. S.
Malta, (Mediterranean)	29.70	754.4	29.88	758.9	58.8	14.9	.....	W	.....	.....	4	.....	8	.....	.....	.....	.....	Raining	Sgt. Fred. Travis, A. H.
Nairn	29.76	755.9	29.86	758.4	42	5.6	.....	Calm	.....	.....	0	.....	8	.....	.....	.....	.....	¾ clouded	W. D. Penny. [O.
Nassau, (Bahamas)	.....	.....	30.11	764.8	75.2	24.0	.....	SE	.....	.....	1	.....	8	.....	.....	.....	.....	D. clouds	C. S. Duncombe.
Nottingham, Observatory	29.78	756.4	29.97	761.2	43.3	6.3	.....	N	.....	.....	1	.....	10n	.....	.....	0.012	0.30	Raining	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.42	747.3	29.96	761.0	43.4	6.3	.....	ENE	.....	.....	1	.....	9	.....	.....	.....	.....	D. clouds	Rev. Stephen Whitty.
Oxford, Radcliffe Obs'y	.....	.....	29.97	761.2	44	6.7	.....	Calm	.....	.....	0	.....	10	.....	.....	.....	.....	Misty	Mr. Lucas.
Plymouth	29.88	758.9	29.95	760.7	45.0	7.2	.....	ENE	.....	.....	1	.....	10	.....	.....	.....	.....	Ove. cast	John Merrifield.
Roche's Point	29.77	756.1	29.82	757.4	50	10.0	.....	S	.....	.....	4	.....	10	.....	.....	.....	.....	Overcast	W. Kennedy.
Saint Ann's Head	29.77	756.1	29.93	760.2	47	8.3	.....	SE	.....	.....	3	.....	10	.....	.....	.....	.....	Misty	John C. Walker.
Sandwick Manse, (Orkneys.)	.....	.....	29.88	758.9	42.1	5.6	.....	S	10	4.5	.....	.....	9	.....	.....	.....	.....	D. clouds	Rev. C. Clouston, LL. D
Scutari, Cemetery, (Turkey)	.....	.....	29.95	760.7	56.4	13.6	.....	Calm	.....	.....	0	.....	9	.....	.....	.....	.....	D. clouds	Sergt. W. H. Lyne.
Sheffield	29.70	754.4	29.99	761.7	44.0	6.7	.....	N	.....	.....	1	.....	10	.....	.....	0.33	8.4	Misty	W. F. Cooper.
Silloth Rectory	29.89	759.2	29.92	760.0	40.6	4.8	92	NW	.....	.....	1	.....	2	.....	.....	0.045	1.15	D. clouds	Rev. F. Redford, M. A.
Stonyhurst, Observatory	.....	.....	.....	.....	41.7	5.4	.....	E	.....	.....	1	.....	10	.....	.....	.....	.....	Misty	Rev. S. J. Perry.
Stornoway, Lews C., (Hebr.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	John Smith.
Stratfield Turgiss	29.78	756.4	30.00	762.0	44.1	6.7	.....	Calm	.....	.....	0	.....	10	.....	.....	.....	.....	Overcast	Rev. C. H. Griffith, F. M. S.
Thurso	.....	.....	29.86	758.4	41	5.0	.....	Calm	.....	.....	0	.....	8	.....	.....	.....	.....	Overcast.	John Trotter.
Truro, Royal Institution	.....	.....	29.95	760.7	50	10.0	.....	E	.....	.....	2	.....	8	.....	.....	.....	.....	Gloomy	W. Newcombe.
Valencia, Observatory	.....	.....	29.70	754.4	50.3	10.2	.....	SE	34	15.2	.....	.....	10	.....	.....	.....	.....	Squally	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Henry Mercer.
Cape Good Hope, Obs'y	30.28	769.1	30.32	770.1	70.3	21.3	50	SE	9	4.0	.....	5	2	.....	.....	.....	.....	.....	The Staff, for E. J. Stone.
Hobart Town, (Tasmania)	.....	.....	29.68	753.9	48.5	9.2	80	W	.....	.....	3	.....	4k	.....	.....	0.09	2.3	.....	Francis Abbott, F. L. A. S.
Leith, Restalrig Park	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Andrew Gibb.
Mauritius, Observatory	29.84	757.9	30.02	762.6	80.9	27.2	69	E	18.5	8.3	.....	2	2	W NW	ESE	0.12	3.1	Squally	C. Meldrum.
Melbourne, Observatory	29.91	759.7	30.00	762.0	51.0	10.6	60	WSW	20	8.9	.....	.....	6	.....	.....	0.19	4.8	Cloudy	R. L. J. Ellery.
Monach L't-house, (Hebrides)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Youngclause.
North Unst, (Shetland Is.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105 ft., or 1,556.07 m.; Fort Napier, 2,200 ft., or 670.6 m.

Marine Series. Vessels.	Sea or swell. Height scale 0—9	Sea or swell. Direction from—																	
S. S. Algeria, N. 49° 27′, W. 30° 10′	.....	.....	29.46	748.3	47	8.3	.....	NW	.....	.....	6	.....	7	.....	.....	15*	NNW	Showery	Capt. W. Watson.
S. S. Batavia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. J. E. Mouland.
Ship Campe down	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. A. T. Miller.
Brig Catherine	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. Adam Smith.
Barque Celeste	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. D. F. McKechnie.
S. S. Hibernia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. W. R. Cato.
Barque Maroon	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. A. T. Brown.
Ship Mikado	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. C. C. Prehn.
S. S. Seine	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. H. Manning.
Barque Sorrento	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. Jas. J. Price.
Schooner Traveller	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. Alex. Simpson.

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. *Feet

Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	OBSERVER.
San José	26.14	663.9			69.8	21.0	82	SE			2	1cd	1ck	E	NE	0	0		Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.97	761.1	30.01	762.3	40.3	4.6	89	E			2		10						
Farõe	30.00	761.9	30.02	762.4	39.4	4.1	90	ENE			4		10						
Godthaab, (Greenland)	29.67	753.5	29.71	754.6	11.5	—12.4	89	Calm			0		10						
Stykkisholm, (Iceland)	29.13	739.9	29.17	741.0	35.1	1.7	82	SW			6		8						
Thorshavn, (Farõe)	29.82	757.5	29.86	758.4	38.3	3.5	75	SSW			2		6						Snowing
Vestervig	29.86	758.4	30.03	762.7	38.8	3.8	93	Calm			0		8						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

Alençon, Normal School	29.50	749.2	30.05	763.2	46.4	8	86	NW			1		5			0	0	Cloudy	Collignon, Director.
Amiens, Normal School	29.85	758.2	29.97	761.1	45.0	7.2	94	ENE			2		10			0.039	1.0	Covered	Bonvarne, Director.
Avignon, Normal School	29.82	757.5	29.90	759.5	48.6	9.2	58	N			6		0			0	0	Clear	Mr. Giraud, Director.
Bar-sur-Seine	29.42	747.2	30.00	762.0	39.7	4.3	83	NNW			1		10			0.039	1.0	Covered	C. Saillard.
Beaumette Obs'y (Angers)	29.84	757.8	30.00	761.9	49.6	9.8	79	SW	2.0	0.9					N	0	0		Albert Oheux.
Beauvais	29.71	754.6	30.00	761.9	43.9	6.6	91	ENE			1		8		NW	0	0	Very cloudy	Normal School.
Besançon	29.13	740.0	30.08	763.4	38.7	3.7	89	S			3		8		S	0.055	1.4	Very cloudy	Normal School.
Bourg-en-Bresse	29.17	740.8	30.08	763.9	38.7	3.7	90	W			2		10n		N	0.31	8.	Covered	Normal School.
Bourges, Normal School	29.41	746.9	29.97	761.2	41.4	5.2	85	SW			2		10		SW	0.126	3.2	Covered	A. Wagner, Director.
Brest, Naval Observatory	29.64	752.8	29.85	758.3	47.7	8.7	86	ESE			3		10		ESE	0.207	5.25		The Staff.
Carcassonne, Normal School	29.63	752.5	30.05	763.2	50.0	10	86	W			1		10		NW	0	0	Covered	Vateau, Director.
Caen	29.93	760.2	30.00	762.1	47.1	8.4	89	W			2		5		ENE	0.016	0.4	Cloudy	Normal School.
Chartres, Normal School	29.84	745.3	29.91	759.8	48.2	9		NNW			1		10			0.055	1.4	Covered	Lequin, Director.
Châlons-sur-Marne, N. Sch'l	29.67	753.6	30.00	762.0	39.9	4.4	97	S			2		10kn			0	0	Covered	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.63	727.3	30.04	762.9	39.6	4.2	49	NE			1		10		NW	0.020	0.5	Covered	Alluard, Director.
Commercy, Normal School	29.10	739.0	30.00	762.1	40.1	4.5	93	W			2		10		W	0.059	1.5	Covered	Dr. Goulet, Director.
Commune de Gréasque*	28.73	729.7	29.87	758.7	46.9	7.7	72	NW			2		5		NW	0	0	⅜ covered	M. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	29.80	756.8	30.02	762.4	47.8	8.8	97	W			2		10			0.110	2.8	Covered	Mouillot, Director.
Le Mans, Normal School	29.68	753.9	29.99	761.8	44.4	6.9	88	WSW			2		5		W	0	0	Cloudy	Poirrier, Director.
Lons-Le-Saulnier, N.School	29.99	738.9	30.04	762.9	41.0	5	84	N			1		10			0.071	1.80	Covered	Voudez, Director.
Lorient, Naval Observatory	29.89	759.1	29.98	761.6	48.2	9.0	84	E			3		10			0.307	7.8	Covered	T. Carré, Director.
Mâcon, Normal School	29.31	744.4	30.02	762.6	39.7	4.3	97	Calm			0		10			0	0	Covered	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	28.93	734.8	30.01	762.2	39.6	4.2	87	NE			4		10		SW	0	0	Covered	Normal School.
Nismes, Normal School	29.72	755.0	29.93	760.2	51.4	10.8	56	N			4		8		N	0	0	Very cloudy	Boyer, Director.
Orleans, Normal School	29.60	751.8	29.98	761.6	43.2	6.2	94	N			2		8		N	0.047	1.2	Very cloudy	Bernard, Director.
Paris, Observatory	29.74	755.5	29.99	761.7	43.2	6.2	96	W			1		10			0.028	0.71	Foggy	National Observatory.
Privas	28.90	734.0	29.98	761.5	49.1	9.5	67	N			2		10		N	0	0	Covered	Normal School
Rochefort, Naval Obs'y	29.96	760.9	29.99	761.7	49.6	9.8	89	S			3		10		N	0.43	11.	Covered	Lt. Decante, Director.
Rouen, Normal School	29.90	759.5	29.99	761.7	46.6	8.1	85	N			2		10		N	0.110	2.8	Covered	F. Lucard, Director.
Tarbes, Normal School	28.93	734.8	30.03	762.7	50.0	10	100	WSW			2		5		SW	0	0	Cloudy	T. Hugues, Director.
Villefranche	29.30	744.3	30.04	763.0	40.5	4.7	68	S			1		10		Calm	0.008	0.2	Covered	Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.82	757.3	29.84	758.0	78.8	26										0.63	16.		L'Abbé Marchésl.
Marseilles, Observatory			29.84	757.8	49.3	9.6	50	NW			2		2			0	0	Partly cl'dy	The Staff.
Mont-Louis	24.75	628.7	30.07	763.7	34.0	1.1	55	NE	11.2	5.00			8		NNW	0	0		Mr. Falguère.
Nice			29.76	755.9	55.8	13.2	64	SW			3		0			0	0	Clear	Dr. A. Niepce.
Paris, Montsouris Obs'y	29.70	754.3	29.97	761.3	42.8	6.0	100	Calm			0		10			0.024	0.6	Sprinkling	Marié Davy, Director.
Perpignan			29.97	761.2	53.8	12.1	54	NW	29.8	13.33			3		NW	0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.	21.07	535.1			23.0	— 5.0		NW			3		10					Snowy	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.41	569.3			26.2	— 3.2		NW			1		10			0.421	10.7	Snowy	Gen'l de Nansouty.
Saint Maur, (near Paris)	29.82	757.4	29.98	761.6	42.1	5.6	100	E			1		10			0.028	0.7	Foggy	E. Renou.
Toulouse, Observatory	29.37	746.0	30.10	764.4	47.7	8.7	86	NW			1		9			0.026	0.65	Light rain	The Staff.
Tours	29.80	756.9	30.00	761.9	46.4	8.0	86	W			1		10		NW	0.024	0.6		C. Marquet.
Versailles, (near Paris)			29.98	761.4	43.9	6.6	97	NW			1		10			0.041	1.05	Rain & fog	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.17	766.2	30.19	766 8	52.0	11.1	80	ESE	17.9	8.0			10			0	0	Covered	Mare Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; for Montsouris, the barometer reduced to freezing but not to sea-level. At Mirecourt and Rochefort the cloud directions are apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 185 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time.

*Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg																			Prof. Dr. Hoh.
Berlin	29.86	758.4	30.04	763.0	42.8	6.0	78	SE			1		10			0	0		Prof. Arndt.
Breslau	29.51	749.6	30.04	763.1	44.4	6.9	91	SE			1		10			0.078	1.98	Foggy	Royal University Obs'y.
Carlsruhe	29.56	750.8	30.00	761.9	42.4	5.8	89	SW			2		10			0.004	0.1		Albert Senz.
Cassel	29.46	748.2	30.07	763.7	38.8	3.8	87	NE			2		10	NE		0	0		Dr. H. Möhl.
Crefeld	29.83	757.7	29.99	761.8	41.0	5.0	85	S			1		10			0	0	Foggy	Director Lose.
Emden	30.06	763.4	30.09	764.3	41.2	5.1	74	E			0		10			0	0		Prof. Prestel.
Frankfort on the Main	29.70	754.4	30.08	764.0	40.8	4.9		NNE			1		10			Inap.	Inap.	Raining	Physical Society.
Friedrichshafen	28.55	725.2	30.02	762.6	40.6	4.8	81	NNE			5		10	NW		0	0		M. Wilhelm.
Hamburg	29.97	761.1	30.04	762.9	37.8	3.2	90	SE			1		10n			0.043	1.1	Cloudy	Captain F. Hegemann.
Kiel	30.00	762.1	30.02	762.5	40.3	4.6	74	E			2		10			0.193	4.90		Prof. G. Karsten.
Königsberg, (Prussia)	30.03	762.7	30.11	764.8	39.2	4.0	96	SE								0.023	0.58	Covered	Prof. E. Luther.
Köslin			30.01	762.2	40.6	4.8		SE			4		4			0.059	1.5		H. Müller.
Leipsic, Observatory	29.63	752.7	30.07	763.8	37.9	3.3	88	NE			1		10			0	0		Prof. Bruhns.
Memel, Naval School	30.11	764.8	30.16	766.0	36.5	2.5	93	SE			4		10ks					Cloudy	Reinbrech von Skalweit.
Neufahrwasser	30.07	763.7	30.08	764.1	40.5	4.7	97	SSE			2		10			0.110	2.8	Raining	A. Lothes.
Posen	29.76	755.9	30.06	763.5	43.7	6.5	92	SE			2					0	0	Covered	Dr. Magener.
Strassburg Obs., (in Alsace	29.47	748.5	30.04	762.9	41.2	5.1	89	Calm			0		10			0.004	0.09		Dr. Schur.
Stuttgart	29.03	737.3	29.99	761.8	40.6	4.8	87	N			1		10			0	0		Prof. Schoder.
Treves, (Trier)	29.37	745.9	29.89	759.1	41.7	5.4	87	NE			1		10			0.007	0.18	Dense fog	Prof. Flesch.
Weissenburg, (Bavaria)	28.45	722.5	29.99	761.7	38.5	3.6	92	Calm	0	0			10		NW	0.008	0.2	Foggy	Dr. Von Bebber.
Wustrow, Naval School	30.04	763.0	30.07	763.8	39.6	4.2	92	E			2		10			0	0	Covered	E. F. Schütz.
German Naval Series.																			

NOTE.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet: Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4. Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines, Königsberg, Posen and Wustrow in cubic zolls. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.45	748.1	29.84	758.0	64.2	17.9		SE			3							½ Clear	Dr. J. F. J. Schmidt.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and wind-force; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.92	760.0	29.98	761.9	79.7	26.5	43	SSE	8.0?	3.6?			5			0	0	D. clouds	
Deesa	29.49	749.1	29.98	761.4	77.7	25.4	34	N					0			0	0	Blue sky	
Bombay	29.85	758.1	29.89	759.1	78.9	26.1	76	NNW	9.0	4.0			10		WSW	0	0	Overcast	
Poona	27.88	708.3	29.89	759.3	77.8	25.4	67	NNW					10		W	0	0	D. clouds	
Lahore	29.27	743.3	30.05	763.3	55.6	13.1	81	Calm	0.6	0.4			2			0	0	Misty	
Belgaum	27.37	695.1	29.90	759.4	78.9	26.1	51	SE	2.0	0.9			8	WSW		0	0	D. clouds	
Bangalore																			
Roorkee	29.09	739.0	30.03	762.7	63.8	17.7	39	NW	1.9	0.8						0	0		
Agra	29.44	747.8	30.02	762.6	67.8	19.9	42	NW								0	0		
Trichinopoly																			
Nagpur	28.92	734.5	29.97	761.3	76.1	24.5	73	Calm	2.8	1.2			9		E	0	0	Gloomy	
Madras																			
Lucknow	29.65	753.0	30.03	762.8	67.4	19.7	82	Calm	0.5	0.2									
Allahabad	29.70	754.3	30.02	762.5	64.1	17.8	63	Calm	0.4	0.2			5	E		0	0	D. clouds	
Patna	29.84	758.0	30.03	762.8	68.4	20.2	58	W	0.8	0.4			5			0	0	D. clouds	
Hazaribagh	27.97	710.3	30.04	763.0	65.3	18.5	44	WNW	3.3	1.5			4	SW	SW	0	0	D. clouds	
Cuttack	29.87	758.6	29.95	760.7	81.9	27.7	66	E	0.5	0.2			5			0	0		
Calcutta (Alipore)	30.00	762.0	30.02	762.5	67.0	19.4	72	NW	3.0	1.3						0	0	Blue sky	
Goalpara	29.60	751.8	30.00	761.9	69.9	21.1	63	Calm	0.1	0.04			0			0	0	Blue sky	
Chittagong	29.89	759.2	29.99	761.6	69.8	21.0	60	NE	2.9	1.3			0			0	0	Blue sky	
Sibsagar	29.70	754.5	30.06	763.4	62.9	17.2	89	ENE	0.7	0.3			0			0	0	Blue sky	
Rangoon													2			0	0	Blue sky	
Jubbulpore	28.63	727.3	30.03	762.8	70.5	21.4	67	SE	1.4	0.6			4	SW		0	0	D. clouds	

NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,355 ft., or 413.3 m.; Kurrachee, 2,020 ft., or 615.8 m.; Jubbulpore, 1,361 ft., or 414.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instru-m'tal error and temperature. Inches.	Barometer. Corrected for instru-m'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	21.94	557.3	29.93	760.3	20.8	— 6.2	83	ESE	.....	.....	2	.....	0	.....	.....	0	0	.....	Ab. Dom. Mongini.
Stelvio	21.93	557.1	29.92	760.0	19.8	— 6.8	.....	NE	.....	.....	2	.....	0	.....	.....	0.039	1.0	.....	Signora Ernesta Manfredi.
Udine	29.32	744.8	29.74	755.4	52.7	11.5	52	NE	1.3	0.6	.....	.....	9	.....	.....	0.114	2.9	.....	Prof. Giovanni Clodig.
Padua	29.63	752.6	29.74	755.4	53.4	11.9	61	NW	6.3	2.8	.....	.....	5	SE	.....	0.256	6.5	.....	Prof. Dott. Lorenzoni.
Yicenza	29.55	750.6	29.75	755.6	53.2	11.8	65	SW	4.9	2.2	.....	.....	8	E	.....	0.012	0.3	.....	Conte Alm. Da Schio.
Verona	29.55	750.5	29.78	756.3	54.7	12.6	70	NNW	0	0	.....	.....	4	.....	.....	0	0	.....	Dott. B. Bertoncelli.
Bergamo	28.46	722.9	29.81	757.2	48.7	9.4	74	SW	.....	.....	2	.....	0	.....	.....	0	0	.....	Prof. Trionfini Carlo.
Domodossola	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Giuseppe Calza.
Milan	29.29	744.0	29.82	757.4	50.5	10.3	.....	WNW	.....	.....	1	.....	5	NNW	.....	0.445	11.3	.....	Ab. Gio. Capelli.
Pavia	29.46	748.2	29.81	757.2	49.5	9.7	83	W	.....	.....	2	.....	1	SW	.....	0	0	.....	Prof. Gio. Cantoni.
Moncalieri	28.93	734.9	29.86	758.5	47.5	8.6	70	SSE	1.3	0.6	.....	.....	1	.....	.....	0	0	.....	Prof. P. F. Denza.
Mondovi	27.91	708.8	29.86	758.5	45.5	7.5	71	NNW	.....	.....	4	.....	0	.....	.....	0	0	.....	Prof. D. C. Bruno.
Porto Maurizio	29.57	751.0	29.79	756.6	57.0	13.9	50	SW	.....	.....	2	.....	0	.....	.....	0	0	.....	Prof. L. Vassallo.
Genoa	29.60	751.7	29.77	756.1	55.0	12.8	55	N	9.8	4.4	.....	.....	0	.....	.....	0	0	.....	Prof. G. M. Garibaldi.
Piacenza	29.55	750.6	29.81	757.2	48.7	9.3	81	NW	9.8	4.4	.....	.....	4	NE	.....	0.114	2.9	.....	Dott. G Manzi.
Parma	29.49	749.0	29.81	757.2	50.0	10.0	85	NW	.....	.....	6	.....	10	.....	.....	0.295	7.5	.....	Prof. P. Pigorini.
Florence	29.47	748.6	29.73	755.2	52.3	11.3	65	N	.....	.....	6	.....	10	N	.....	0.087	2.2	.....	Cav. F Meucci.
Leghorn	29.67	753.5	29.75	755.7	52.6	11.4	74	NE	3.8	1.7	.....	.....	10	NE	.....	0	0	.....	Prof. P. Monte.
Siena	28.50	724.0	29.73	755.1	49.5	9.7	74	NW	5.6	2.5	.....	.....	10	E	.....	0.031	0.8	.....	Prof. L. Toscani.
Urbino	28.18	715.7	29.76	755.8	44.4	6.9	94	NW	.....	.....	2	.....	10	.....	.....	0.248	6.3	.....	Prof. P. Serpieri.
Pesaro	29.66	753.3	29.71	754.6	48.2	9.0	95	NW	29.3	13.1	.....	.....	10	NW	.....	0.110	2.8	.....	Prof. Luigi Guidi.
Ancona	29.54	750.2	29.65	753.0	50.0	10.0	88	W	.....	.....	6	.....	10	.....	.....	0.650	16.5	.....	Prof. F. DeRossis.
Grosseto	29.61	752.2	29.73	755.1	55.2	12.9	64	NNE	.....	.....	4	.....	6	NE	.....	0	0	.....	Avv. P. Ponticelli.
Rome	29.49	749.1	29.67	753.6	55.0	12.8	60	N	1.5	0.8	.....	.....	9	.....	.....	0.039	1.0	.....	Prof. P. A. Secchi.
Naples, O. U	29.50	749.2	29.70	754.3	49.6	9.8	66	NW	.....	.....	2	.....	10	SW	.....	0.480	12.2	.....	Prof. L. Palmieri.
Lecce	29.56	750.8	29.81	757.2	58.8	14.9	73	SW	8.7	3.9	.....	.....	4	S	.....	0.717	18.2	.....	Prof. C. De Giorgi.
Cosenza	28.89	732.3	29.73	755.1	53.8	12.1	72	NE	0.7	0.3	.....	.....	5	.....	.....	0.134	3.4	.....	Prof. F. D. Conti.
Cagliari	29.47	748.6	29.67	753.5	53.6	12.0	81	NW	.....	.....	2	.....	9	NW	.....	0.240	6.1	.....	Prof. A. Pacinotti.
Riposto, (Sicily)	.....	.....	.....	.....	56.3	13.5	63	NNE	.....	.....	2	.....	6	SE	.....	0	0	.....	Prof. F. Caffero.
Palermo	29.37	746.0	29.63	752.5	55.2	12.9	65	WSW	16.1	7.2	.....	.....	10	.....	.....	0.051	1.3	.....	Prof. G. Cacciatore.
Caltanissetta	27.74	704.5	29.70	754.3	46.0	7.8	89	WSW	.....	.....	2	.....	10	.....	.....	0.567	14.4	.....	Prof. A. Pagani.
Syracuse	29.63	752.7	29.71	754.6	55.2	12.9	69	SW	.....	.....	4	.....	8	SW	.....	0.220	5.6	.....	Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.13	739.8	29.68	753.9	48.2	9.0	81	SW	1.3	0.6	.....	.....	10	.....	.....	0.780	19.8	.....	Prof. F. Brioschi.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,548.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Siena, 348.5 m., or 1,143.3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Tokei (Yeddo)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	The Observatory.
Tokei (Yeddo) University	30.35	770.9	30.46	773.6	39	3.9	77	.....	.....	.....	.....	.....	.....	.....	.....	0	0	Clear	Prof P. V. Veeder.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the cooperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Aguascalientes	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	I. N. Marin, M. D.
Córdoba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	C. Peña, M. D.
Cuernavaca	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	L. Castillo, A. E.
Guadalajara	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. L. Peres.
Guannjuato	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. V. Fernandes.
Leon	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. M. Leal.
Mexico	23.15	588.1	30.28	769.2	53.1	11.7	78	NW	0.1	0.03	.....	.....	10k	.....	W	0.06	1.5	Covered	Central Observatory.
Orizaba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	N. N.
Orizaba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	I. Orozco, M. D.
Pabellon, (Aguascalts)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. V. de Leon, M. E.
Puebla	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. B. Gonzales.
Toluca	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. O. Velazques.
Tlacotalpam	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. F. R. Bayly.
San Luis Potosi	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	G. Barroeta, M. D.
Vera-Cruz	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. J. Rossell.
Zacatecas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. A. Bonilla, M. E.
Puebla, (Catholic Institute)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	P. Spina. [M. M. D. D.
Morelia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Tena, F. L. Páramo.

NOTE.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,290 m., or 7,512.9 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m,, or 8,611.8 ft; San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	29.99	761.8	29.99	761.8	41.7	5.4	.....	SE	.....	.....	2	.....	.....	.....	.....	0.024	0.6	.....	
Groningen	30.09	762.0	30.06	763.4	41.7	5.5	.....	E	.....	.....	2	.....	.....	.....	.....	0	0	.....	
Helder	30.09	762.0	30.09	762.0	41.0	5.0	.....	E	.....	.....	1	.....	.....	.....	.....	0	0	.....	
Hellevoetsluis	.....	.....	29.94	760.4	40.3	4.6	93	SE	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	
Utrecht	29.97	761.1	30.01	762.3	40.8	4.9	84	NE	.....	.....	2	.....	10	.....	.....	0	0	Dull	H. v d Brink.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	30.03	762.8	30.09	764 2	39.2	4.0	84	SSE	6	2.5	.....	.....	4	.....	.....	0	0	.....	
Brönö	29.96	761.0	30.00	762.0	40.3	4.6	69	S	18	8	.....	.....	9	.....	.....	0	0	.....	
Christiania	29.98	761.4	30.13	765.3	35.1	1.7	91	NE	0	0	.....	.....	10	.....	.....	0	0	.....	
Tromsö	29.76	755.9	29.80	757.0	39.6	4.2	77	SW	18	8	.....	.....	10	.....	.....	0.126	3.2	.....	

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the cooperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	30.01	762.2	30.20	767.0	65.5	18.6	92	SW	2.5	1.1	.....	.....	7	.....	.....	0	0	.....	
Campo Major	29.15	740.5	30.19	766.8	55.4	13.0	93	W	6.3	2.8	.....	.....	10	W	.....	0	0	.....	Dr. J. A. Sampaio.
Funchal, (Madeira)	30.24	768.0	30.31	769.8	67.8	19.9	72	SW	1.3	0.6	.....	.....	9	.....	.....	0	0	.....	Dr. A. M. R. dos Santos.
Lisbon, Observatory	29.84	758.0	30.20	767.1	59.9	15.5	93	WSW	11.2	5.0	.....	.....	10	.....	.....	0.020	0.5	Light rain...	Capt. D. A. de Cunha.
Ponta Delgada, (Azores)	30.12	765.0	30.19	766.8	68.0	20.0	85	SW	13.7	6.1	.....	.....	3	.....	.....	0.016	0.4	.....	The Staff.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

Naval Series. Vessels.	Sea or swell. Height scale 0–9	Sea or swell. Direction from—		
S. S. Bartholomew Dias.	.....	.....	.....	R, A. T. Pinha, Com'd't.
S. S. India.	.....	.....	.....	A. D. Pedroso, Com'd't.
S. S. Mindello.	.....	.....	.....	J. F. R. R. Bastos, Com'd't.
S. S. Sado.	.....	.....	.....	A. N. P. Sampaio, Com'd't.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.67	753.7	30.11	764.8	41.5	5.3	94	ESE	11	5	.....	.....	10ks	.....	.....	.....	.....	.....	Astronomical Obs.
Wilna	29.87	758.8	30.32	770.0	35.6	2.0	94	SSE	2	1	.....	.....	10	.....	.....	.....	.....	Heavy clouds	Astronomical Obs.
Dorpat	30.14	765.6	30.40	772.2	30.6	— 0.8	100	ESE	7	3	.....	.....	10n	.....	.....	.....	.....	Snowing	Prof. Dr. Weihrauch.
St. Petersburg	30.46	773.7	30.48	774.1	27.9	— 2.3	97	SSE	11	5	.....	.....	10n	.....	.....	.....	.....	.....	Central Physical Obs.
Knopio	30.01	762.3	30.35	771.0	26.2	— 3.2	100	SW	18	8	.....	.....	10	.....	.....	Blank	Blank	.....	Ch. Forsten.
Kieff	29.76	755.8	30.43	773.0	28.6	— 1.9	94	ESE	9	4	.....	.....	10ks	.....	.....	.....	.....	.....	Physical Cabinet.
Nikolaiev	30.33	770.3	30.40	772.1	33.6	0.9	96	ENE	18	8	.....	.....	10n	.....	.....	.....	.....	.....	Kurdukof.
Kertch	30.34	770.5	30.35	771.0	41.4	5.2	84	NE	16	7	.....	.....	8	.....	.....	.....	.....	.....	Lagorio.
Moscow	30.15	765.8	30.75	781.0	20.8	— 6.2	98	SSE	4	2	.....	.....	10s	.....	.....	.....	.....	.....	Meteorological Obs.
Lugan	30.43	772.9	30.65	778.4	29.1	— 1.6	60	E	13	6	.....	.....	0	.....	.....	.....	.....	.....	Meteorological Obs.
Archangel	30.34	770.5	30.35	771.0	28.0	— 2.2	96	SSW	22	10	.....	.....	10	.....	.....	.....	.....	.....	Ogorodnikof.
Tiflis	29.02	737.2	30.50	774.7	43.2	6.2	82	SE	9	4	.....	.....	10	.....	.....	.....	.....	.....	Physical Observatory.
Astrakhan	30.77	781.6	30.69	779.5	27.7	— 2.4	61	NNE	4	2	.....	.....	0	.....	.....	.....	.....	.....	Sebastianof.
Kasan	30.38	771.7	30.68	779.2	17.4	— 8.1	99	Calm	0	0	.....	.....	10	.....	.....	.....	.....	.....	Physical Cabinet.
Orenburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Tschernischef.
Ekaterinburg	29.32	744.8	30.33	770.3	24.8	—4.0	95	W	22	10	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Nukuss	30.18	766.5	30.42	772.7	30.0	2.2	84	N	4	2	.....	.....	10kn	.....	.....	.....	.....	.....	
Kasaly	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Tashkend	28.63	727.3	30.41	772.3	43.2	6.2	82	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Bobrof.
Barnaul	29.54	750.3	30.11	764.9	9.9	—12.3	81	SW	22	10	.....	.....	10	.....	.....	.....	.....	.....	Michelson.
Yeniseisk	29.54	750.3	29.90	759.4	— 1.5	—18.6	86	SW	7	3	.....	.....	10	.....	.....	.....	.....	Snowing	Meteorological Obs.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Marks.
Oorga	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Usolzef.
Krotkowo	30.19	766.9	30.69	779.5	22.1	— 5.5	78	NW	2	1	.....	.....	8	.....	.....	.....	.....	.....	Mossin.
Peking, (China)	30.13	765.2	30.27	768.8	23.7	— 4.6	70	Calm	0	0	.....	.....	3k	.....	.....	.....	.....	.....	Cand. Fatjanow.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Physical Observatory
Vladivostock	30.25	768.4	30.29	769.4	26.6	— 3.0	72	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Meteorological Obs.
Nikolaievsk, on the Amoor	.....	.....	.....	.....	—12.1	—24.5	55	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Viennasymbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Rave, Director.
Bilbao, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Manuel de Naveran
Burgos, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Domingo Martin y Perez.
Madrid, Royal Observatory	27.87	707.9	30.17	766.4	43.0	6.1	77	SW	4.5	2.00	.....	0	10	.....	.....	0	0	Covered	The Staff.
Murcia, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Olayo Diaz, Director.
Santiago, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	30.02	762.4	30.08	764.1	69.9	21.1	87	E	1.1	0.5	.....	2c	0	SW	.....	0	0	Clear	Benito Vines, S. J.
San Fernando, Naval Obs'y	30.14	765.6	30.24	768.2	55.9	13.3	87	NE	3.7	1.7	.....	0	10	.....	WNW	0.003	0.1	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, I.W.	.....	.....	30.00	761.9	78.4	25.8	66	NE	14.7	6.58	.....	3ck	3k	NE	NE	0	0	D. clouds	Leonardo de Tejeda, Chief of Engineers.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the cöoperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Low'r 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	30.16	766.0	30.20	767.0	34.5	1.4	.....	SW	.....	.....	4	.....	10	.....	.....	0	0	.....	
Umea	30.17	766.4	30.23	767.7	35.6	2.0	100	SW	.....	.....	4	.....	10	.....	.....	0.079	2.00	Raining	
Hernosand	30.18	766.5	30.23	767.8	36.0	2.2	93	S	.....	.....	2	.....	10	.....	.....	0.051	1.3	.....	
Stockholm	29.98	761.4	30.15	765.9	36.0	2.2	93	SE	.....	.....	2	.....	10	.....	.....	0.012	0.3	.....	
Wisby	30.08	764.0	30.14	765.5	36.7	2.6	93	SE	.....	.....	6	.....	10	.....	.....	0.012	0.3	.....	
Sub-Series.																			
Upsala	30.09	764.3	30.17	766.2	35.4	1.9	90	SE	4.9	2.2	.....	.....	10	.....	.....	0.049	1.26	.....	Dr. Hildebrandsson.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.54	724.9	30.01	762.2	40.1	4.5	78	NNW	.....	.....	1	.....	10	.....	.....	0	0	Covered	The Observatory.
Zurich	28.35	720.1	30.04	763.1	38.1	3.4	92	W	.....	.....	1	.....	10	.....	.....	0	0	Covered	The Observatory.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—For Geneva the corresponding departures from the normal values are: Barometer, —2.2 mm; Thermometer, +0.9 cent.; Relative Humidity, —1 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	30.02	762.5	57.2	14.0	77	NE	3	1.5	.....	.....	10	.....	SW	0	0	.....	The Observatory.
Fao, (Persian Gulf)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salonica	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Valona	.....	.....	29.79	756.7	64.0	17.8	.....	SW	.....	.....	2	.....	5	.....	.....	1.06	27.	Raining	B. Stefanides.
Varna	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. Bertrand.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.98	761.5	29.99	761.8	69.1	20.6	60	NE	.....	.....	1	.....	0	.....	.....	0	0	Blue sky	Imperial Observatory. Prof. C. V. A. Van Dyck

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	30.14	765.5	30.21	767.3	24.7	— 4.1	87	Calm	0	0	.....	10	.....	.....	.....	.....	.....	.....	Hon. J. Ferguson.
Brockville, Ontario	29.52	749.8	29.83	757.7	40	4.4	.....	Calm	0	0	.....	.....	10s	.....	SW	0.07	1.8	Light rain	W. R. Rigg.
*Chatham, N. B	30.16	766.1	30.22	767.6	24	— 4.4	95	Calm	0	0	.....	2k	8ks	W	W	0	0	Cloudy	G. A. Blair.
Charlottetown, P. E. Island	30.28	769.1	30.32	770.1	34	1.1	79	S	8	3.6	.....	.....	10s	.....	Calm	0	0	Cloudy	H. J. Cundall, C. E.
Cornwall, Ontario	29.90	751.8	29.80	756.9	37.7	3.2	92	NE	.....	.....	1	.....	10s	.....	.....	0.358	9.09	Cloudy	James Smith, M. A.
Dalhousie, N. B	30.16	766.1	30.19	766.8	29	— 1.7	80	E	.....	.....	1	.....	.....	.....	.....	0	0	Gloomy	H. A. Johnson.
Esquimault, B. C	30.08	764.0	30.13	765.3	42.1	5.6	84	N	.....	.....	.....	10	.....	.....	.....	0.02	0.5	Cloudy	W. H. Bevis.
*Father Point, Quebec	30.02	762.5	30.04	763.0	32	0.0	82	S	18	8.0	.....	10n	.....	S	Inap.	Inap.		Light snow	J. McWilliams.
Fredericton, N. B	30.17	766.3	30.23	767.8	30.0	— 1.1	89	W	2.0	0.9	.....	s	.....	.....	0.30	7.6	Cloudy	Prof. Harrison.	
*Fort Garry, Manitoba	29.24	742.7	30.13	765.3	15	— 9.4	93	N	15	6.7	.....	10n	.....	Calm	0	0	Cloudy	James Stewart.	
Goderich, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	H. J. Strang, M. A.
Granton, Ontario	28.47	723.1	29.57	751.1	46	7.8	100	SE	.....	.....	2	.....	10n	.....	.....	0.42	10.7	Raining	James Grant.
*Halifax, N. S	30.17	766.3	30.31	769.9	29	— 1.7	85	Calm	0	0	.....	.....	10ks	.....	.....	0	0	Cloudy	F. Allison, M. A.
Hamilton, Ontario	29.28	743.7	29.65	753.1	40.3	9.6	86	S	.....	.....	2	10cs	.....	SW	.....	.....	.....	Raining	Geo. Dickson, M. A
Heart's Content, N. F	30.21	767.3	30.24	768.1	24	— 4.4	86	NW	.....	.....	1	.....	2ks	.....	NW	0.05	1.3	Cloudy	E. Weedon.
*Kingston, Ontario	29.45	748.0	29.79	756.7	42	5.6	92	S	6	2.2	.....	10n	.....	Calm	0.06	1.5	Light rain	S. Woods, M. A.	
Little Glace Bay, N. S	30.34	770.6	30.38	771.6	28.7	— 1.8	.....	W	6	2.7	.....	5k	W	.....	0	0	Fair	C. H. Rigby.	
*Montreal, Quebec	29.69	754.1	29.89	759.2	37	2.8	87	S	15	6.7	.....	Haze	.....	.....	0	0	Hazy	C. H. McLeod, C. E.	
*Parry Sound, Ontario	28.89	733.8	29.58	751.3	42	5.6	100	SE	17	7.6	.....	10n	.....	SE	0.18	3.3	Cloudy	Rev. R. Mosley.	
Peterboro, Ontario	28.94	735.1	29.70	754.4	41.7	5.4	90	Calm	.....	.....	0	Fog	.....	.....	0	0	Foggy	J. F. Jeffers, B. A.	
Port Dover, Ontario	28.98	736.1	29.68	753.9	41	5.0	100	S	15	6.7	.....	5k	0	S	.....	0.24	6.1	Fair	H. Morgan.
Port Hastings, N. S	30.31	769 9	30.36	771.1	41.4	5.2	.....	S	1	0.4	.....	.....	.....	.....	.....	0.50	12.7	Fine	Peter Grant.
Port Stanley, Ontario	29.99	736.3	29.63	752.6	46	7.8	95	SE	22	9.8	.....	10n	.....	SW	0.34	8.6	Light rain	M. Payne.	
*Quebec, Quebec	29.68	753.9	30.01	762.2	33	0.6	80	NE	18	8.0	.....	10n	.....	NE	0.20	5.1	Cloudy	Capt. Ashe, R. N	
*Rockliffe, Ontario	29.23	742.4	29.70	754.4	35	1.7	95	SE	15	6.7	.....	10s	.....	SE	Inap.	Inap.	Light rain	W. H. McIntyre.	
St. John, N. B	30.06	763.5	30.23	767.8	37	2.8	90	S	8	3.6	.....	10ks	.....	.....	1.00	25.4	Cloudy	G. Murdock, C. E.	
*Saugeen, Ontario	28.83	732.3	29.52	749.8	46	7.8	91	S	4	1.8	.....	10s	.....	.....	0.16	4.1	Light rain	K. Stewart.	
Stayner, Ontario	28.80	731.5	29.58	751.3	40	4.4	100	SE	5	2.2	.....	Fog	.....	.....	0.20	5.1	Foggy	R. J. Cole.	
Stratford, Ontario	28.27	718.0	29.54	750.3	46.0	7.8	98	SW	10.0	4.5	.....	10n	.....	.....	0.140	3.56	Cloudy	C. J. MacGregor, M. A.	
*Sydney, C. B	30.35	770.9	30.38	771.6	20	— 3.3	88	S	2	0.9	.....	10ck	0	NW	Inap.	Inap.	Fair	T. C. Hill.	
*Toronto, Ontario	29.28	743.7	29.67	753 6	45	7.2	100	SE	7	3.1	.....	.....	10ks	.....	SW	0.11	2.8	Cloudy	Magnetic Observatory.
Windsor, N. S	30.22	767.6	30.21?	767.3?	29.0	— 1.7	91	.....	.....	.....	.....	4cs	4k	.....	.....	0	0	Fair	Prof. John E. Oram.
Woodstock, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Montgomery.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	27.0	— 2.8	88	NW	.....	.....	.....	5k	10s	.....	.....	Inap.	Inap.	Unsettled	John Delany.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

1877.—December 5.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.76	755.9	29.98	761.5	40	4.4	82	SE	8	3.6	.....	.....	10s	.....	Calm	0.04	1.0	Cloudy	
Alpena, Michigan	28.79	731.3	29.42	747.3	43	6.1	91	SW	8	3.6	.....	.....	10s	.....	SW	0.03	0.8	Cloudy	
Atlantic City, New Jersey	30.05	763.5	30.07	763.8	53	11.7	100	S	14	6.3	.....	.....	10s	.....	S	0.76	19.3	Cloudy	
Augusta, Georgia	29.77	756.1	29.95	760.7	62	16.7	91	S	10	4.5	.....	.....	10s	.....	S	1.07	27.2	Threatening	
Baltimore, Maryland	29.96	761.0	30.01	762.2	45	7.2	92	S	1	0.4	.....	.....	10n;fg	.....	Calm	0.40	10.2	Light rain	
Barnegat, New Jersey	30.04	763.0	30.06	763.5	52	11.1	100	S	20	8.9	.....	.....	10n	.....	S	0.13	3.3	Light rain	
Bismarck, Dakota	28.27	718.0	30.03	762.7	23	— 5.0	86	NW	20	8.9	.....	0	8n	.....	NW	Inap.	Inap.	Light snow	
Boise City, Idaho	27.62	701.5	30.50	774.7	17	— 8.3	67	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Boston, Massachusetts	29.94	760.5	30.10	764.5	45	7.2	100	S	1	0.4	.....	.....	10n;fg	.....	.....	0.37	9.4	Light rain	
Brackettville, Texas	29.23	742.4	30.32	770.1	40	4.4	56	W	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Breckenridge, Minnesota	28.82	732.0	29.87	758.7	20	— 6.7	100	N	34	15.2	.....	.....	10s	.....	Calm	0.09	2.3	Cloudy	
Brownsville, Texas	30.27	768.8	30.34	770.6	48	8.9	62	N	16	7.2	.....	0	0	.....	.....	0	0	Clear	
Buffalo, New York	28.96	735.6	29.64	752.8	51	10.6	86	S	8	3.6	.....	.....	10n	.....	SW	0.10	2.5	Light rain	
Burkes, Arizona	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Burlington, Vermont	29.71	754.6	29.97	761.2	41	5.0	74	S	8	3.6	.....	.....	10s	.....	S	0	0	Cloudy	
Cairo, Illinois	29.52	749.8	29.92	760.0	40	4.4	73	W	12	5.4	.....	.....	10s	.....	W	0.12	3.0	Cloudy	
Camp Grant, Arizona	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Camp Verde, Arizona	27.13	689.1	30.62	777.7	21	— 6.1	71	NW	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Campo, California	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Cape Hatteras, N. Carolina	30.15	765.8	30.15	765.8	62	16.7	88	S	23	10.3	.....	.....	10s	.....	SW	0.37	9.4	Cloudy	
Cape Henry, Virginia	30.08	764.0	30.11	764.8	61	16.1	88	S	8	3.6	.....	.....	10s	.....	SW	0.06	1.5	Threatening	
Cape Lookout, N. Carolina	30.13	765.3	30.14	765.5	62	16.7	94	S	17	7.6	.....	.....	10s	.....	SW	0.30	7.6	Cloudy	
Cape May, New Jersey	30.02	762.5	30.05	763.3	56	13.3	87	S	24	10.7	.....	.....	10n	.....	.....	0.22	5.6	Light rain	
Charleston, South Carolina	30.04	763.0	30.11	764.8	61	16.1	94	S	6	2.7	.....	.....	10n	.....	Calm	0.88	22.4	Light rain	
Cheyenne, Wyoming	24.13	612.9	30.07	763.8	10	—12.2	61	NW	25	11.2	.....	0	2s	.....	NW	0.03	0.8	Fair	
Chicago, Illinois	28.92	734 6	29.61	752.1	36	2.2	80	SW	12	5.4	.....	8k	0	SW	.....	0.19	4.8	Fair	
Cincinnati, Ohio	29.04	737.6	29.67	753.6	47	8.3	77	W	11	4.9	.....	.....	10ks;fg	.....	W	0.60	15.2	Threatening	
Cleveland, Ohio	28.91	734.3	29.61	752.1	53	11.7	79	SE	13	5.8	.....	.....	10s	.....	SE	0.27	6.9	Cloudy	
Concho, Texas	28.46	722.9	30.29	769.4	25	— 3.9	72	NW	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Corsicana, Texas	29.83	757.7	30.33	770.4	34	1.1	79	NW	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Davenport, Iowa	29.01	736.8	29.65	753.1	34	1.1	89	SW	20	8.9	.....	.....	10s	.....	SW	0.01	0.3	Cloudy	
Denison, Texas	29.46	748.3	30.31	769.9	32	0.0	79	W	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Denver, Colorado	24.92	633.0	30.14	765.5	18	— 7.8	84	NW	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Detroit, Michigan	28.89	733.8	29.55	750.6	45	7.2	84	SW	4	1.8	.....	.....	10s	.....	SW	0.39	9.9	Cloudy	
Dodge City, Kansas	27.54	699.5	29.96	761.0	27	— 2.8	76	NW	36	16.1	.....	0	8s	.....	NW	0	0	Cloudy	
Dubuque, Iowa	28.54	732.5	29.54	750.3	32	0.0	79	NW	13	5.8	.....	.....	10s	.....	Calm	0.02	0.5	Cloudy	
Duluth, Minnesota	28.84	732.5	29.53	750.0	27	— 2.8	94	NE	24	10.7	.....	.....	10n	.....	NE	0.69	17.5	Heavy snow	
Eagle Pass, Texas	29.64	752.8	30.44	773.2	38	3.3	45	NW	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Eastport, Maine	30.12	765.0	30.18	766.6	44	6.7	75	S	13	5.8	.....	.....	10s	.....	S	0	0	Threatening	
Erie, Pennsylvania	28.93	734.8	29.62	752.3	54	12.2	86	S	13	5.8	.....	.....	10s	.....	SW	0.33	8.4	Cloudy	
Escanaba, Michigan	28.70	729.0	29.35	745 5	35	1.7	90	SW	16	7.2	.....	.....	10n	.....	Calm	0.49	12.4	Light rain	
Florence, Arizona	28.73	729.7	30.33	770.4	32	0.0	42	NE	.....	.....	.....	0	0	.....	.....	0	0	Clear	
FortBayard, New Mexico	24.24	615.7	30.24	768.1	17	— 8.3	50	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Fort Craig, New Mexico	25.83	656.1	.....	.....	13	—10.6	62	NW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Fort Gibson, Indian Ter	29.57	751.1	30.13	765.3	33	0.6	69	NW	11	4.9	.....	2cs	2s	W	NW	0.02	0.5	Fair	
Fort Griffin, Texas	29.10	739.1	30.47	773.9	31	— 0.6	69	NW	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.12	3.0	Clear	
Fort Sill, Indian Territory	29.04	737.6	30.22	767.6	32	0.0	69	NW	12	5.4	.....	0	0	.....	.....	0	0	Fair	
Galveston, Texas	30.13	765.3	30.18	766.6	45	7.2	84	N	32	14.3	.....	2cs	0	Calm	.....	0	0	Cloudy	
Grand Haven, Michigan	28.89	733.8	29.54	750.3	40	4.4	73	SW	20	8.9	.....	.....	10s	.....	SW	0.54	13.7	Cloudy	
Indianapolis, Indiana	28.96	735.6	29.74	755.4	37	2.8	71	W	8	3.6	.....	.....	10s	.....	W	0.26	6.6	Cloudy	
Indianola, Texas	30.26	768.6	30.29	769.4	44	6.7	68	N	34	15.2	.....	0	2s	.....	Calm	0.10	2.5	Clear	
Jacksboro, Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Jacksonville, Florida	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.05	1.3	Cloudy	
Keokuk, Iowa	29.06	738.1	29.69	754.1	34	1.1	69	W	12	5.4	.....	.....	10s	.....	W	0.05	1.3	Cloudy	
Key West, Florida	30.05	763.3	30.08	764.0	74.0	23.3	76	SE	12	5.4	.....	5c	2ks	W	SE	0	0	Cloudy	
Kittyhawk, North Carolina	30.11	764.8	30.13	765.3	58	14.4	100	S	20	8.9	.....	.....	10s	.....	S	0	0	Cloudy	
Knoxville, Tennessee	28.81	731.8	29.81	757.2	45	7.2	92	E	2	0.9	.....	.....	10ks	.....	S	0.16	3.8	Light rain	
La Crosse, Wisconsin	28.66	728.0	29.38	746.2	38	3.3	100	SW	8	3.6	.....	.....	10n	.....	SW	0.15	3.8	Clear	
La Mesilla, New Mexico	26.32	668.5	30.47	773.9	31	— 0.6	58	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Laredo, Texas	.....	.....	.....	.....	41	5.0	57	NW	15	6.7	.....	0	0	.....	.....	0	0	Cloudy	
Leavenworth, Kansas	29.07	738.4	29.94	760.5	31	— 0.6	89	NW	14	6.3	.....	.....	10s	.....	NW	0	0	Clear	
Los Angeles, California	29.90	759.4	30.25	768.3	51	10.6	22	NE	11	4.9	.....	0	0	.....	.....	0	0	Cloudy	
Louisville, Kentucky	29.21	741.9	29.77	756.1	42	5.6	73	W	12	5.4	.....	.....	10s	.....	W	0.52	13.2	Cloudy	
Lynchburg, Virginia	29.30	744.2	29.99	761.7	44	6.7	84	Calm	0	0	.....	.....	10n	.....	SW	0.40	10.2	Light rain	
Maricopa Wells, Arizona	.....	.....	.....	.....	20	— 6.7	27	N	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Marquette, Michigan	28.65	727.7	29.33	745.0	40	4.4	82	S	3	1.3	.....	.....	10s	.....	Calm	0	0	Cloudy	
Mason, Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Memphis, Tennessee	29.65	753.1	29.98	761.5	40	4.4	71	W	4	1.8	.....	0	2s	.....	Calm	0.01	0.3	Clear	
Milwaukee, Wisconsin	28.81	731.8	29.49	749.0	33	0.6	69	SW	25	11.2	.....	.....	10s	.....	NW	0.02	0.5	Cloudy	
Mobile, Alabama	29.90	759.4	29.94	760.5	60.5	15.8	94	W	2	0.9	.....	.....	10s	.....	W	1.67	39.9	Cloudy	
Montgomery, Alabama	29.65	753.1	29.88	758.9	60	15.6	94	SE	6	2.7	.....	.....	Fog	.....	SE	0.53	13.5	Threatening	
Morgantown, West Virginia	28.71	729.2	29.74	755.4	54	12.2	79	S	9	4.0	.....	.....	10s	.....	SW	0.74	18.8	Threatening	
Mt. Washington, N. H.	23.66	601.0	30.02	762.5	33	0.6	100	W	90	40.2	.....	.....	10n	.....	W	0.24	6.1	Sleeting	
Nashville, Tennessee	29.23	742.4	29.76	755.9	52	11.1	86	W	6	2.7	.....	0	8ks	.....	SW	0.09	2.3	Cloudy	
New Haven, Connecticut	29.96	761.0	30.08	764.0	42	5.6	91	N	1	0.4	.....	.....	10n	.....	.....	0.42	10.7	Light rain	
New London, Connecticut	30.04	763.0	30.09	764.3	50	10.0	100	S	8	3.6	.....	.....	10n	.....	Calm	0.30	7.6	Light rain	
New Orleans, Louisiana	29.90	759.4	29.96	761.0	58	14.4	70	NW	14	6.3	.....	.....	10ks	.....	W	0.55	14.0	Cloudy	
Newport, Rhode Island	30.07	763.8	30.12	765.0	51	10.6	93	SW	12	5.4	.....	.....	10n	.....	SW	0.20	5.1	Light rain	
New York, New York	29.87	758.7	30.05	763.3	45	7.2	100	NE	6	2.7	.....	.....	10n;fg	.....	Calm	0.50	12.7	Light rain	
Norfolk, Virginia	30.00	762.0	30.06	763.5	58	14.4	87	S	11	4.9	.....	.....	10s	.....	SE	0.32	8.1	Threatening	
North Platte, Nebraska	27.14	689.3	29.87	758.7	21	— 6.1	72	NW	28	12.5	.....	0	0	.....	.....	0	0	Clear	
Olympia, Washington Ter.	30.18	766.6	30.22	767.6	35	1.7	100	S	1	0.4	.....	.....	10n	.....	Calm	0.08	2.0	Light rain	
Omaha, Nebraska	28.72	729.5	29.84	757.9	28	— 2.2	88	NW	14	6.3	.....	.....	10s	.....	NW	0.02	0.5	Cloudy	
Oswego, New York	29.48	748.8	29.80	756.9	45	7.2	84	SE	12	5.4	.....	.....	10n	.....	Calm	0.32	8.1	Light rain	
Pembina, Dakota	29.21	741.9	30.10	764.5	17	— 8.3	84	NW	20	8.9	.....	.....	10s	.....	N	0	0	Cloudy	
Philadelphia, Pennsylvania	29.97	761.2	30.02	762.5	54	12.2	100	S	17	7.6	.....	.....	10n	.....	S	0.28	7.1	Light rain	
Phœnix, Arizona	.....	.....	.....	.....	25	— 3.9	50	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Pike's Peak, Colorado	17.41	442.2	29.62	752.3	—20	—28.9	27	N	36	16.1	.....	0	0	.....	.....	0.10	2.5	Clear	
Pioche, Nevada	24.32	617.7	30.10	764.5	13	—10.6	71	NW	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Pittsburg, Pennsylvania	28.91	734.3	29.70	754.4	55	12.8	80	S	10	4.5	.....	.....	10s	.....	SW	0.37	9.4	Cloudy	
Port Huron, Michigan	28.87	733.3	29.51	749.5	47	8.3	92	SW	16	7.2	.....	.....	10ks	.....	SW	0.27	6.9	Threatening	
Portland, Maine	30.05	763.3	30.10	764.5	40	4.4	91	Calm	0	0	.....	.....	Fog	.....	.....	0.03	0.8	Dense fog	
Portland, Oregon	30.26	768.6	30.36	771.1	36	2.2	90	S	4	1.8	.....	.....	10n	.....	Calm	0.02	0.5	Light rain	
Prescott, Arizona	25.04	636.0	30.40	772.1	10	—12.2	38	NW	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Punta Rassa, Florida	30.05	763.3	30.07	763.8	67	19.4	84	SE	14	6.3	.....	8k	0	SE	.....	0	0	Fair	
Red Bluff, California	30.00	762.0	30.38	771.6	36	2.2	70	N	6	2.2	.....	0	0	.....	.....	0	0	Clear	
Rochester, New York	29.11	739.4	29.72	754.9	43	6.1	91	S	8	3.6	.....	.....	10s	.....	SW	0.10	2.5	Cloudy	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	BAROMETER. Corrected for instrum'tal error and temperature. Inches.	BAROMETER. Corrected for instrum'tal error and temperature. Millimeters.	BAROMETER. Reduced to sea-level. Inches.	BAROMETER. Reduced to sea-level. Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Upper. From—	CLOUDS. Direction. Lower. From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	WEATHER.	OBSERVER.
Roseburg, Oregon	29.76	755.9	30.37	771.4	29	—1.7	100	Calm	0	0	.....	Haze	0	.....	.....	0	0	Clear	
Sacramento, California	30.26	768.6	30.35	770.9	35	1.7	95	N	6	2.7	.....	0	0	.....	.....	0	0	Clear	
St. Louis, Missouri	29.26	743.2	29.84	757.9	37	2.8	62	W	14	6.3	.....	.....	10s	.....	Calm	0	0	Cloudy	
St. Marks, Florida	30.00	762.0	30.02	762.5	63	17.2	94	NE	3	1.3	.....	.....	10n	.....	Calm	3.32	84.3	Heavy rain	
St. Paul, Minnesota	28.65	727.7	29.48	748.8	30	—1.1	89	NW	20	8.9	.....	.....	10n	.....	.....	0.40	10.2	Light snow	
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salt Lake City, Utah	26.07	662.2	30.40	772.1	15	—9.4	82	SE	4	1.8	.....	0	0	.....	.....	0.01	0.3	Clear	
San Antonio, Texas	29.64	752.8	30.25	768.3	41	5.0	49	N	12	5.4	.....	0	0	.....	.....	0	0	Clear	
San Diego, California	30.18	766.6	30.25	768.3	49	9.4	37	N	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Sandusky, Ohio	28.96	735.6	29.61	752.1	49	9.4	85	SW	14	6.3	.....	1ck	8ks	SW	SW	0.53	13.5	Fair	
Sandy Hook, New Jersey	30.02	762.5	30.04	763.0	53	11.7	100	S	14	6.3	.....	.....	10n	.....	S	0.38	9.7	Light rain	
San Francisco, California	30.23	767.8	30.30	769.6	48	8.9	78	NW	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Santa Fé, New Mexico	23.38	593.8	29.92	760.0	10	—12.2	38	N	10	4.5	.....	0	0	.....	.....	Inap.	Inap.	Clear	
Savannah, Georgia	29.97	761.2	30.06	763.5	64	17.8	80	SW	18	8.0	.....	.....	10n	.....	S	0.85	21.6	Light rain	
Shreveport, Louisiana	29.95	760.7	30.18	766.6	41	5.0	74	NW	8	3.6	.....	.....	10s	.....	W	0	0	Cloudy	
Smithville, North Carolina	30.10	764.5	30.14	765.5	61	16.1	94	SW	10	4.5	.....	.....	10n	.....	SW	0.31	7.9	Light rain	
Springfield, Massachusetts	29.84	757.9	29.97	761.2	41	5.6	91	Calm	0	0	.....	.....	10n	.....	Calm	0.29	7.4	Light rain	
Stockton, Texas	27.34	694.4	30.34	770.6	19	—7.2	54	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Thatcher's Island, Mass	30.03	762.7	30.09	764.3	45	7.2	92	S	8	3.6	.....	.....	10n	.....	S	0.46	11.7	Light rain	
Toledo, Ohio	28.95	735.3	29.62	752.3	42	5.6	83	SW	20	8.9	.....	0	8s	.....	W	0.51	13.0	Cloudy	
Tucson, Arizona	27.87	707.9	30.42	772.7	34	1.1	43	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Tybee Island, Georgia	30.04	763.0	30.07	763.8	60	15.6	100	S	16	7.2	.....	.....	10n	.....	Calm	1.02	25.9	Light rain	
Umatilla, Oregon	30.10	764.5	.....	.....	24	—4.4	74	Calm	0	0	.....	2cs	0	Calm	.....	0	0	Clear	
Vicksburg, Mississippi	29.80	756.9	30.06	763.5	47	8.3	70	NW	10	4.5	.....	.....	10s	.....	NW	0	0	Cloudy	
Virginia City, Montana	24.50	622.3	29.98	761.5	7	—13.9	77	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Visalia, California	29.97	761.2	30.36	771.1	38	3.3	100	E	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Washington, D. C.	29.88	758.9	30.00	762.0	44	6.7	100	S	2	0.9	.....	.....	Fog	.....	.....	0.40	10.2	Light rain	
Wickenburg, Arizona	.....	.....	.....	.....	32	0.0	45	N	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Wilmington, N. Carolina	30.04	763.0	30.12	765.0	61	16.1	94	S	11	4.9	.....	.....	10n	.....	S	0.36	9.1	Light rain	
Winnemucca, Nevada	29.98	659.9	30.34	770.6	9	—12.8	78	NE	12	5.4	.....	2c	0	SW	.....	0	0	Fair	
Wood's Holl, Mass	30.11	764.8	30.16	766.1	52	11.1	86	SW	10	4.5	.....	.....	10n;fg	.....	.....	0.10	2.5	Light rain	
Yankton, Dakota	28.61	726.7	29.96	761.0	24	—4.4	87	NW	32	14.3	.....	0	8s	.....	NW	0.40	10.2	Fair	
Yuma, Arizona	30.30	769.6	30.47	773.9	47	8.3	14	E	5	2.2	.....	0	0	.....	.....	0	0	Clear	
SUB-SERIES.																			
York Factory, B. A.	30.13	765.3	30.19	766.8	— 8.5	—22.5	79	N	19	8.5	.....	4c	4s	N	N	0	0	Cloudy	J. Fortescue, W. Wood.
Havana, Cuba, W. I.	30.01	762.2	30.03	762.7	71	21.7	85	SE	1.2	0.5	.....	4ck	0	W	.....	0	0	Fair	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.13	765.3	30.14	765.5	79	26.1	79	Calm	0	0	.....	5c	2n	SE	SE	0	0	.....	James Gall.
Navassa, W. I.	29.88	758 9	29.96	761.0	79	26.1	.....	NE	10	4.5	.....	.....	.....	.....	.....	0	0	Fair	F. M Everett.
St. Thomas, W. I.	.....	.....	.....	.....	76	24.4	91	ENE	15	6.7	.....	2c	2k	E	.....	0.5	13.	.....	G. O. Gellich.
Paramaribo, D. Guiana, S. A.	.....	.....	29.98	761.5	83	28.3	79	SE	.....	.....	2	4c	5k	E	.....	0	0	Fair	C. J. Hering.
Batavia, Dutch Guiana, S. A	30.04	762.9	30.04	763.1	85.1	29.5	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.47	12.	Cloudy	Dr. H. Groot.
Medellin, Colombia, S. A.	26.15	638.8	.....	.....	65.6	18.6	79	Calm	.....	.....	0	2c	0	.....	.....	0	0	Fair	Thomas Herran.
Honolulu, Oahu, H. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Daniel Smith.
Makawao, Maui, H. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,676 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard Mare Island, Cal.	30.27	766.8	44	6.7	42	5.6	83	ESE	5	2.2	.....	.....	5s	.....	Calm	0	0	.....	.....	.....	
Navy Yard. Pensacola, Fla.	30.0 0	762.0	.....	.....	61	16.1	94	NW	10	4.5	.....	.....	10	.....	.....	0.23	5.8	.....	.....	Raining.....	
Navy Yard, Portsmouth, N.H	30.11	764.8	65	18.3	40	4.4	100	NNW	0	0	.....	.....	.....	.....	.....	0.3	8.	.....	.....	Rainy.....	
Naval Hospital, Yokohama, Japan.....	30.34	770.6	54	12.2	45	7.2	61	ENE	2	0.9	.....	.....	1c	.....	ENE	0	0	.....	.....	Fair	
Adams. Mayne Harbor, Chili.....	29.52	749.8	50	10.0	49	9.4	85	Var.	.....	.....	1	.....	6	.....	SW	Light	Light	None	.....	Showery.....	
Alert, Yokohama, Japan.....	30.47	773.9	.....	.....	52	11.1	86	NNE	.....	.....	2	.....	1	.....	N	.....	.....	Smooth	.....	Hazy..	
Alliance, Constantinople, Turkey.	30.11	764.8	70	21.1	62	16.7	77	NE	.....	.....	0-1	.....	10	.....	Calm	.....	.....	.....	.....	Pleasant.....	
Ashuelot. Shanghai, China.....	30.26	768.6	57	13.9	53	11.7	74	SE	.....	.....	3	.....	10	.....	Calm	.....	.....	.....	.....	D. clouds.....	
Canonicus, New Orleans, La.....	30.00	762.0	45	7.2	56	13.3	69	WNW	.....	.....	3	.....	10	.....	.....	.....	.....	.....	.....	Cloudy.....	
Colorado, New York, N. Y.....	30.05	763.3	44	6.7	44	6.7	??	Calm	0	0	.....	.....	10	.....	E	0.38	9.7	.....	.....	Rain and fog	
Despatch, Constantinople, Turkey.	30.13	765.3	79	26.1	58	14.4	82	NNE	.....	.....	2	.....	8	.....	NE	.....	.....	.....	.....	Cloudy.....	
Essex, Libreville, Lower Guinea.	29.93	760.2	82	27.8	85	29.4	92	S	.....	.....	2	.....	8	.....	S	.....	.....	Smooth	W	D. clouds.....	
Franklin, Norfolk, Va.....	30.18	766.6	70	21.1	61	16.1	88	S	16	7.2	.....	.....	0?	.....	S	0.1	3.	.....	.....	Raining.....	
Guará, Lisbon, Portugal.....	30.16	766.1	61	16.1	62	16.7	83	W	.....	.....	1	.....	10	.....	W	.....	.....	.....	.....	Misty.	
Lackawana, Mare Island, Cal.	30.37	771.4	.....	.....	47	8.3	77	E	.....	.....	0-1	.....	0	.....	.....	.....	.....	.....	.....	Blue sky.....	
Marion, N. 37° 53′ E. 17° 16′.....	29.72	754.9	62	16.7	60	15.6	71	WSW	.....	.....	5	.....	8	.....	W	Moderate.	Moderate.	Moderat	W	D. clouds.....	
Michigan, Erie, Pa.....	29.18	741.2	68	20.0	51	10.6	86	S	.....	.....	4	.....	10	.....	S	.....	.....	.....	.....	Cloudy.....	
Monocacy, Nagasaki, Japan.....	30.20	767.1	57	13.9	57	13.9	69	Var.	.....	.....	0-2	.....	1	.....	.....	.....	.....	.....	.....	D. clouds.....	
Monongahela. N. 27° 13′, E. 34° .03.	30.00	762.0	78	25.6	78	25.6	86	ESE	.....	.....	3	.....	ck	.....	.....	.....	.....	Smooth	.....	D. clouds.....	
New Hampshire, Port Royal, S.C.....	30.20	767.1	.....	.....	61	16.1	94	S	24	10.7	.....	.....	10	.....	.....	0.62	15.7	.....	.....	Raining.....	
Omaha, S. 13° 25′, W. 77° 10′.....	29.99	761.7	74.5	23.5	74	23.3	76	SE	12	5.4	.....	.....	9	.....	SE	0	0	High	SSE	Pleasant.. ...	
Onward, Callao, Peru.....	29.99†	761.7†	74	23.3	71	21.7	90	Calm	.....	.....	0	.....	10	.....	.....	.....	.....	Long	W	Hazy.....	
Ossipee, Norfolk, Va.....	30.13	765.3	65	18.3	61	16 1	88	S	.....	.....	3	.....	10	.....	Calm	.....	.....	.....	.....	Overcast.....	
Palos, Shanghai, China.....	30.27	768.8	58	14.4	52	11.1	79	ESE	.....	.....	3	.....	10	.....	.....	.....	.....	.....	.....	Cloudy.....	
Plymouth. St. Thomas, W. I.....	30.16	766.1	82	27.8	76	24.4	95	NE	.....	.....	5	.....	1	.....	ENE	.....	.....	Smooth	.....	Clear.....	
Powhatan, Norfolk, Va.....	.....	.....	.....	.....	64	17.8	83	S	13.2	5.9	.....	.....	10	.....	.....	0.21	5.3	.....	.....	Overcast.....	
Ranger, Shanghai, China.....	30.54	775.7	.....	.....	54	12.2	87	SE	.....	.....	2	.....	10	.....	SE	.....	.....	.....	.....	Cloudy.....	
Rio Bravo, Brownsville, Texas.....	30.17	766.3	.....	.....	49	9.4	71	NNW	.....	.....	5	.....	6	.....	NW	.....	.....	.....	.....	D. clouds.....	
Santee, Annapolis, Md.....	30.09	764.3	66	18.9	57	13.9	63	S	.....	.....	2	.....	10	.....	.....	0.31	7.9	.....	.....	Drizzling.....	
Saratoga, Hampton Roads, Va.....	.....	.....	.....	.....	56	13.3	100	S	.....	.....	3	.....	10	.....	S	Moderate.	Moderate.	.....	.....	Overcast.....	
St. Louis, League Island, Pa	29.95	760.7	51	10.6	52	11.1	79	SW	11	4.9	.....	.....	10	.....	SW	0.4	10.	.....	.....	Raining.....	
Swatara, Norfolk, Va.....	30.17	766.3	.....	.....	61	16.1	88	SSW	.....	.....	4	.....	10	.....	S	.....	.....	.....	.....	Raining.....	
Tennessee, N. 32° 28 , E. 136° 40′.....	30.38	771.6	67	19.4	53	11.7	80	N	4	1.8	.....	.....	1	.....	N	0	0	Smooth	.....	D. clouds. ...	
Trenton, Villefranche, France.....	29.85	758.2	.....	.....	61	16.1	55	SW	5	2.2	.....	.....	1	.....	S&W	0	0	.....	.....	D. clouds.....	
Vandalia, Villefranche, France.....	29.80	756.9	58	14.4	60	15.6	60	SW	.....	.....	1	.....	1	.....	.....	.....	.....	.....	.....	D. clouds.....	
Wabash, Boston, Mass.....	30.14	765.5	58	14.4	52	11.1	73	E	1	0.4	.....	.....	10	.....	Calm	0.29	7.4	.....	.....	Foggy	
Wyoming, Washington, D. C.....	30.41†	772.4†	48	8.9	43	6.1	.....	SE	.....	.....	0-1	.....	10	.....	.....	.....	.....	.....	.....	Foggy	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. The position given for the Plymouth is that at noon, local time, instead of that at 7:25 a. m., Washington time.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	TRUE COURSE TOWARD—	HOURLY RATE IN KNOTS.	BAROMETER REDUCED TO SEA-LEVEL.		TEMPERATURE OF THE AIR.		RELATIVE HUMIDITY.	WIND.				CLOUDS.				SEA-SWELL.		WEATHER.	OBSERVER.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.	CHARACTER.	DIRECTION FROM—		
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—				
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama, N. 29° 25′ 34″, W. 110° 52′ 16″			29.77	756.1	78	25.6	78	NNE			6		2		NE	Heavy	WNW	D. clouds	Capt. Howard.
S. S. City of Peking, N. 37° 22′, W. 126° 21′			30.35*	770.9*	54	12.2	93	WSW			2		3		WSW	Smooth		D. clouds	Lt. Z. L. Tanner, U.S.N.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio, Hong-Kong, China			30.01	762.2	68	20.0		E			3		10					Overcast	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Granada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

NOTE.—The originals give the wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. *Aneroid.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.

S. S. Belgic																			Capt. John Metcalf.
S. S. Gaelic, N. 30° 00′, E. 161° 14′			30.12*	765.0*	72	22.2	100	SW & NE			4-5		N		NE	Rough	NNE	Raining	Capt. W. H. Kidley
S. S. Oceanic																			Capt. H. Parsell.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. *Aneriod.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig																			Capt. K. Undütsch.
S. S. Nürnberg, N. 30° 6′, W. 42° 44′			30.12	765.0	69.0	20.6	85	ENE			4		n		NE	Smooth	NW	Raining	Capt. A. Jaeger.
S. S. Ohio, N. 44° 2′, W. 51° 36′			30.32	770.1	38.5	3.6	55	NNW			5		k		NW	Smooth		Clearing	Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, nor distinguish between upper and lower clouds.

UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Lo'wr	Upper.	Lower.	Character.	Direction From—		
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second	0—10.	0—10.	0—10.	From—	From—				
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, N. 49° 23′, W. 44° 15′			29.85*	758.2*	44	6.7	??	NNW			4		2		NNW	Heavy	NW	Snow & hail	Captain Sargent.
S. S. Ohio. Philadelphia, Pa			30.03	762.7	56	13.3	94	S			2		10		Calm			Overcast	Captain Morrison.
S. S. Pennsylvania, Liverpool			30.14†	765.5†	52	11.1	93	SE			2		10					Foggy	Captain Harris.

Note.—The originals give the barometer as read off; wind-force by the scale 0 to 12. *Aneroid. † Corrected for temperature and elevation, instrumental error not known.

RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

S. S. Nederland																			Capt. Randle.
S. S. Switzerland																			
S. S. Vaderland																			Capt. Jackson. Capt. Nichols.

ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

S. S. Hibernian																			
S. S. Scandinavian, N. 50° 37′, W. 42° 22′			29.80	756.9	37	2.8		W			6		9		N	High	ESE	Snow-squalls	Capt. W. Richardson.

Note.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, Kennebunk, Maine			30.16	766.1	38	3.3	100	Calm	0	0			Fog		Calm			Misty	Capt. James Jorgensen.

Note.—The originals for the schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4.

Collated at the Office of the Chief Signal Officer of the Army, Washington, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^{d}.) Chief Signal Officer, U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON DECEMBER 6, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSÉ mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:48 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:38 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer, corrected for instru'tal error and temperature. Inches.	Barometer, corrected for instru'tal error and temperature. Millimeters.	Barometer, reduced to sea-level. Inches.	Barometer, reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours	.....	.....	30.16	766.0	66.6	19.2	79	WNW	.....	.....	2	.....	6	.....	.....	0	0	Cloudy.....	Michel.
Algiers	.....	.....	30.05	763.3	62.6	17.0	63	NW	.....	.....	1	.....	2	.....	.....	0	0	Fair.....	Peter.
La Calle	.....	.....	30.04	762.9	56.1	13.4	82	NW	.....	.....	3	.....	7	.....	.....	0.630	16.0	Very cloudy	Fleury.
Tunis	.....	.....	29.94	760.5	57.7	14.3	82	NW	.....	.....	5	.....	5	.....	.....	0.280	7.1	Cloudy.....	Jacques.
Sfax	.....	.....	30.00	762.0	60.8	16.0	.....	W	.....	.....	3	.....	8	.....	.....	0	0	Very cloudy	Husson.
Saida	.....	.....	30.17	766.4	54.0	12.2	76	WNW	.....	.....	4	.....	5	.....	.....	0	0	Cloudy.....	Millot.
Tebessa	.....	.....	30.02	762.5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Bassières.
Geriville	.....	.....	30.19	766.7	45.3	7.4	94	NW	.....	.....	3	.....	7	.....	.....	0	0	Very cloudy	Lemaillot.
Laghouat	.....	.....	30.12	765.1	55.4	13.0	25	N	.....	.....	4	.....	3	.....	.....	0	0	Pretty fair..	Guyot.
Biskra	.....	.....	30.08	764.0	62.2	16.8	32	NW	.....	.....	1	.....	4	.....	.....	0	0	Cloudy.....	Kuntz.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890 ? meters, or 2,919.9 ? feet; Tebessa, 1,088 ? m., or 3,569.4 ? ft.; Geriville, 1,360 ? m.; or 4,461.7 ? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

Agram	29.39	746.5	29.95	760.6	48.6	9.2	89	SW	.....	.....	1	.....	10	.....	.....	0.016	0.4	.....	Prof. Ivan Stozir
Cracow, I. R. Observatory	29.29	744.0	30.08	764.1	38.1	3.4	97	NE	.....	.....	2	.....	10	.....	.....	0.008	0.2	.....	Dr. Wierzbiski.
Eperies	29.13	739.8	30.02	762.6	43.9	6.6	83	Calm	.....	.....	0	.....	8s;8	.....	.....	0	0	.....	Julius Mikolik.
Gratz	28.72	729.4	30.00	761.9	42.3	5.7	79	NNW	.....	.....	3	.....	10	.....	.....	0.059	1.5	.....	Andreas Rospini.
Hermannstadt	28.56	725.3	29.98	761.5	51.1	10.6	55	SE	.....	.....	3	.....	6	.....	.....	0	0	.....	Prof. Reissenberger.
Kremsmünster	28.55	725.2	29.93	760.2	38.8	3.8	90	ENE	.....	.....	1	.....	10	.....	.....	0	0	.....	Prof. C. Wagner.
Lemberg	29.10	739.0	30.12	765.1	37.0	2.8	86	SE	.....	.....	1	.....	10	.....	.....	0	0	.....	Dr. T. Stanecki.
Pola	29.76	756.0	29.87	758.8	53.8	12.1	65	E	.....	.....	3	.....	9s	.....	.....	0	0	.....	I.R.HydrographicOffice
Szathmar	29.62	752.3	30.09	764.2	54.3	12.4	49	S	.....	.....	3	.....	7	.....	.....	0	0	.....	Johann Tamas, S. J.
Szegedin	29.67	753.7	29.96	760.9	40.6	9.8	87	E	.....	.....	1	.....	10	.....	.....	0.016	0.40	.....	Karl Stancel.
Trieste	29.82	757.3	29.92	759.9	52.2	11.2	63	E	.....	.....	1	.....	7	.....	.....	0	0	.....	P. Busth.
Vienna	29.28	743.6	29.99	761.8	41.5	5.3	100	Calm	.....	.....	0	.....	10	.....	.....	0.291	7.4	Foggy	I. R. Central Met. Obs'y
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

Arlon	28.36	720.3	29.91	759.6	37.2	2.9	82	S	.....	.....	0	.....	10	.....	.....	0.130	3.3	.....	Prof. M. Passau.
Brussels	29.52	749.8	29.72	755.0	41.9	5.5	79	S	.....	.....	4	.....	10	.....	.....	0.043	1.10	.....	Royal Observatory.
Furnes	29.62	752.4	29.85	758.0	40.3	4.7	100	SSE	.....	.....	6	.....	10	.....	.....	0.169	4.3	Light rain....	M. E. de Cae.
Maeseyck	29 08	753.8	29.81	757.1	42.6	5.9	79	S	.....	.....	4	.....	10	.....	.....	0	0	.....	M. Pierrot.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	29.10	739.1	29.20	741.7	44.6	7.0		SE	36	16.1			10			0.440	11.18	Raining	W. Boswell.
Ardrossan	29.01	736.8	29.03	737.3	48	8.9		SE			4		10					Raining	William McNeil.
Armagh, Observatory			29.09	738.9	49.0	9.4		SW	19	8.5			10					Squally	S. Call, for Dr. Robinson
Bidston, (Liverpool Obs.)			29.23	742.4	51.8	11.0		SSW	18	8.0			10					Overcast	John Hartnup.
Birr Castle, (Parsonstown)			29.27	743.4	49.6	9.8		WSW			4		10					D. clouds	J. Dreyer.
Bradford, Yorkshire	28.98	736.1	29.37	746.0	48.7	9.3		SE			1		10			0.46	11.7	Raining	J. McLandsborough.
Bridgetown, (Barbados)	29.91	759.7	29.94	760.5	82.0	27.8		N			1		4					D. clouds	Pvt. G. W. Roberts, A.
Cambridge, Observatory			29.42	747.3	47.0	8.3		S			2		10					Raining	H. Todd. [H. C.
Cardington			29.43	747.5	51.6	10.9		S			3		8					Overcast	John McLaren.
Chatham, School M. E	29.34	745.2	29.48	748.8	44.2	6.8		S			4		10					Drizzling	Lt. W. G. Morris, R. E.
Dartmoor	28.34	719.8	29.84	757.9	42.0	5.6		SE			4		8					Raining	Alexander Watt.
Davos Platz (Switzerland)																			Francis Redford, M. A.
Donaghadee	29.08	738.6	29.11	739.4	50	10.0		SSW			5		8					D. clouds	J. Mac Gowan.
Dover	29.51	749.5	29.54	750.3	48	8.9		SSW			6		10					Raining	J. Costello.
Eccles, (near Manchester)			29.25	742.9	50.1	10.1		SE	8.2	3.7			10					Misty	Thomas Mackereth.
Falmouth, Observatory	29.29	744.0	29.52	749.8	52.7	11.5		W			5		9					Overcast	The Staff.
Fort Napier, (Natal)	27.83	708.4	30.13	765.3	59.4	15.2		SE			2		10					Raining	Pvt. G. Salmon, A. H. C.
Free Town, (Sierra Leone)			29.83	757.7	87	30.6		Calm			0		3					D. clouds	
Galway, Queen's College																			Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	30.12	765.0	30.17	766.3	62.5	16.9		W			4		8					Overcast	Corpl. C. Aitken, A. H. C.
Glasgow, Observatory	28.86	733.0	29.06	738.1	48.0	8.9		SSE			4		10					Drizzling	D. G. Maclean.
Great Yarmouth	29.51	749.5	29.52	749.8	44	6.7		S			6		8					Drizzling	G. T. Watson.
Greenwich, Royal Obs'y	29.29	744.0	29.46	748.3	52.8	11.6		SSW			1		6					D. clouds	The Staff, for G. B. Airy.
Guernsey	29.35	745.5	29.57	751.1	54	12.2		SW			3		8					Showery	Dr. S. E. Hoskins, F.R.S.
Helston			29.52	749.8	52	11.1		SW			4		6k					Showery	M. P. Moyle.
Holyhead	29.20	741.7	29.25	742.9	51	10.6		WSW			3		10					Raining	John Tilston.
Jersey	29.31	744.5	29.60	751.8	53.0	11.7		SW			6		10					Raining	J. Fisher.
Kew, Observatory			29.45	748.0	52.1	11.2		SSW	10	4.5			9					Threatening	The Staff.
Kingstown	29.14	740.1	29.17	740.9	52	11.1		W			6		5			Blank	Blank	D. clouds	George Mitchell.
Leicester, Museum			29.36	745.7	50.7	10.4		SW			5		10					Overcast	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.77	756.1	29.85	758.2	61.2	16.2		NW			4		8					D. clouds	Sgt. Fred. Travis, A. H.
Nairn	28.97	735.8	29.06	738.1	47	8.3		SW			2		8					¾ clouded	W. D. Penny. [C.
Nassau, (Bahamas)			30.13	765.3	75.0	23.9		SE			0		8					Misty	C. S. Duncombe.
Nottingham, Observatory	29.15	740.4	29.34	745.2	49.3	9.6		SSE			3		10d		S	0.493	12.53	Raining	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	28.80	731.5	29.32	744 7	50.1	10.1		SSW			5		10					Misty	Rev. Stephen Whitty.
Oxford, Radcliffe Obs'y			29.41	747.0	53	11.7		S			2		10					Drizzling	Mr. Lucas.
Plymouth	29.42	747.3	29.49	749.0	52.8	11.6		SW			3		10					Overcast	John Merrifield.
Roche's Point	29.34	745.2	29.39	746.5	53	11.7		W			5		5			Blank	Blank	Cloudy	W. Kennedy.
Saint Ann's Head	29.20	741.7	29.36	745.7	52	11.1		WSW			5		10					Misty	John C. Walker.
Sandwick Manse, (Orkneys)			29.11	739.4	44	6.7		SE	51	22.8			10					Squally	Rev. C. Clouston, L.L. D
Scutari, Cemetery, (Turkey)			29.92	760.0	58.2	14.6		N			1		4					D. clouds	Sergt. W. H. Lyne.
Sheffield	29.16	740.7	29.44	747.8	48.0	8.9		SSW			2		10			0.29	7.4	Overcast	W. F. Cooper.
Silloth Rectory	29.10	739.1	29.12	739.6	49.1	9.5	92	SE			3		10			0.310	7.87	Raining	Rev. F. Redford, M. A.
Stonyhurst, Observatory					48.8	9.3		S			4		8					Misty	Rev. S. J. Perry.
Stornoway, Lews C., (Hebr.)			28.91	734.3	47	8.3		SE			6		10					Threatening	John Smith.
Stratfield Turgiss	29.24	742.7	29.46	748.3	53.9	12.2		SW			2		10					Showery	Rev. C. H. Griffith, F.M.S.
Thurso			29.10	739.1	44	6.7		ESE			6		7					D. clouds	John Trotter.
Truro, Royal Institution			29.55	750.6	54	12.2		W			6		10					Raining	W. Newcombe.
Valencia, Observatory			29.43	747.5	49.6	9.8		W	32	14.8			6					Squally	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)																			Henry Mercer.
Cape Good Hope, Obs'y	30.15	765.8	30.19	766.8	72.0	22.2	49	SSE	32	14.3		0	0						The Staff, for E. J. Stone.
Hobart Town, (Tasmania)			29.68	753.9	62.0	16.7	72	NW			3		5k			0.01	0.3		Francis Abbott, F.R.A.S.
Leith, Restalrig Park																			Andrew Gibb.
Mauritius, Observatory	29.85	758.2	30.04	762.9	78.7	25.9	78	E	18.0	8.0		8	8		ENE	0.01	0.3	Showery	C. Meldrum.
Melbourne, Observatory	29.98	761.5	30.07	763.8	55.2	12.9	84	SE	4	1.8			1			0	0	Very fine	R. L. J. Ellery.
Monach L't-house, (Hebrides)																			J. Youngclause.
North Unst, (Shetland Is.)																			Robert Burnet.

Note.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m.

Marine Series.

Vessels.

	Sea or swell. Height scale 0—9	Sea or swell. Direction from—		
S. S. Algeria, N. 47° 53′, W. 37° 15′	15*	WNW	Hailing	Capt. W. Watson.
S. S. Batavia				Capt. J. E. Mouland.
Ship Camperdown				Capt. A. T. Miller.
Brig Catherine				Capt. Adam Smith.
Barque Celeste				Capt. D. F. McKechnie.
S. S. Hibernia				Capt. W. R. Cato
Barque Maroon				Capt. A. T. Brown.
Ship Mikado				Capt. C. C. Prehn.
S. S. Seine				Capt. H. Manning.
Barque Sorata				Capt. Jas. J. Price.
Schooner Traveller				Capt. Alex Simpson.

Note.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. *Feet

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
San José	26.19	665.2			68.0	20.0	86	SW			1		1c;ks		E	0	0		Federico Maison.
"																			
"																			

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.96	760.9	30.00	762.1	39.6	4.2	80	SSE			2		10						
Fanöe	29.85	758.1	29.87	758.6	36.9	2.7	89	SSE			6		10						
Godthaab, (Greenland)	29.70	744.4	29.74	755 5	6.3	—14.3	74	ENE			4		1						
Stykkisholm, (Iceland)	28.93	734.8	28.97	735.9	29.7	— 1.3	96	Calm			0		10						
Thorshavn, (Faröe)	29.04	737.5	29.07	738.4	45.1	7.3	93	SE			5		10					Snowing	
Vestervig	29.07	753.6	29.84	757.9	36.3	2.4	89	SE			6		10					Raining	
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NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

Alençon, Normal School	29.20	741.6	29.75	755.6	46.4	8	95	SW			1		10			0	0	Covered	Collignon, Director.
Amiens, Normal School	29.56	750.9	29.67	753.7	42.4	5.8	91	ESE			2		10			0.016	0.4	Covered	Bonvarne, Director.
Avignon, Normal School	29.86	758.4	29.94	760.4	47.5	8.6	65	N			2		10			0	0	Foggy	Mr. Giraud, Director.
Bar-sur-Seine	29.26	743.3	29.85	758.1	40.1	4.5	80	S			1		10					Raining	C. Saillard.
Beaumette Obs'y (Angers)	29.54	750.2	29.70	754.3	56.1	13.4	88	WSW	6.5	2.9					SW	0.461	11.7		Albert Cheux.
Beauvais	29.42	747.2	29.71	754.6	42.6	5.9	92	SSE			1		10		SSE	0.030	0.75	Covered	Normal School.
Besançon	29.02	737.1	29.04	760.4	41.7	5.4	88	S			2		10			0	0	Covered	Normal School.
Bourg-en-Bresse	29.11	739.5	30.02	762.6	40.5	4.7	97	S			2		5n		N	0	0	Cloudy	Normal School.
Bourges, Normal School	29.34	745.3	29.91	759.6	41.5	5.3	97	SW			2		10		SW	0.055	1.4	Covered	A. Wagner, Director.
Brest, Naval Observatory	29.39	746.4	29.61	752.0	54.1	12.3	87	W			4		9		W	0.679	17.25	Squally	The Staff.
Carcassonne, Normal School	29.50	749.3	29.92	759.9	49.1	9.5	95	W			1		2		NW	0	0	Slightly cl'dy	Vateau, Director.
Caen	29.56	750.7	29.93	760.6	54.0	12.2	93	WSW			2		2		ENE	0.189	4.8	Slightly cl'dy	Normal School.
Chartres, Normal School	29.08	738.7	29.65	753.2	46.6	8.1		S			3		10			0.217	5.5	Covered	Lequin, Director.
Châlons-sur-Marne, N. Sch'l	29.47	748.4	29.79	756.7	39.7	4.3	90	S			2		10					Raining	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.51	724.2	29.91	759.6	39.4	4.1	80	W			1		10			0	0	Covered	Alluard, Director.
Commercy, Normal School	29.00	736.5	29.90	759.4	40.1	4.5	83	SE			2		10		SE	0	0	Covered	Dr. Goulet, Director.
Commune de Gréasque*	28.79	731.2	29.93	760.2	47.7	8.7	63	NE			1		8		NE	0	0	¾ Covered	V. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	29.55	750.6	29.76	756.0	57.2	14.0	93	S			2		10			0.669	17.0	Covered	Mouillot, Director.
Le Mans, Normal School	29.39	746.4	29.69	754.2	52.9	11.6	95	W			2		5		W	0.364	9.25	Cloudy	Poirrier, Director.
Lons-Le-Saulnier, N.School	29.66	736.5	29.93	760.2	40.5	4.7	88	SW			1		10			0	0	Covered	Voudez, Director.
Lorient, Naval Observatory	29.69	751.7	29.69	754.2	57.2	14.0	86	SW			3		10			0.803	20.4	Covered	T. Carré, Director.
Mâcon, Normal School	29.21	742.0	29.92	759.9	40.6	4.8	93	Calm			0		10			0.087	2.2	Covered	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	28.76	730.6	29.84	757.8	39.2	4	80	NNE			2		10		SSW	0	0	Covered	Normal School.
Nismes, Normal School	29.76	755.9	29.97	761.2	47.3	8.5	70	NW			2		10		N	0.08	2.	Covered	Boyer, Director.
Orleans, Normal School	29.32	744.8	29.71	754.6	45.3	7.4	97	S			3		10		S	0.142	3.6	Covered	Bernard, Director.
Paris, Observatory	29.46	748.3	29.71	754.5	42.3	5.7	99	SSE			1		10		SSE	0.038	0.98	Raining	National Observatory.
Privas	28 95	735.4	30.04	763.0	47.3	8.5	57	N			2		10		N	0	0	Covered	Normal School
Rochefort, Naval Obs'y	29.78	756.3	29.81	757.1	55 8	13.2	98	WSW			5		10		ENE	0.24	6.	Covered	Lt. Decante, Director.
Rouen, Normal School	29.57	751.1	29.66	753.3	45.5	7.5	91	SSE			2		10		SE	0.299	7.6	Covered	F. Lucard, Director.
Tarbes, Normal School	28.82	732.1	29.94	760.5	46.0	7.8	89	ESE			2		5		SW	0	0	Cloudy	T. Hugues, Director.
Villefranche	29.22	742.2	29.95	760.8	40.8	4.9	93	ESE			1		10		NW	0.04	1.	Covered	Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.78	756.4	29.81	757.1	77.0	25										0.87	22.		L'Abbé Marchési.
Marseilles, Observatory			29.95	760.6	51.3	10.7	80	W			1		10			0.039	1.00	Foggy	The Staff.
Mont-Louis	24.77	629.2	30.09	764.2	37.8	3.2	68	SW	5.6	2.50			10		NW	0.055	1.4		Mr. Falgnère.
Nice			29.87	758.8	67.0	13.9	69	Calm			0		5			0	0	Cloudy	Dr. A. Niepce.
Paris, Montsouris Obs'y	29.42	747.2	29.69	754.2	41.7	5.4	100	SSE			3–4		10			0.142	3.6	Light rain	Marié Davy, Director.
Perpignan			29.95	760.8	51.4	10.8	81	W	7.4	3.33			10			0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.	21.08	535.3			32.0	0.0		SW			2		10					Rainy	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.42	569.5			32.9	0.5		SW			3		10			2.264	57.5	Rainy	Gen'l de Nansouty.
Saint Maur, (near Paris)	29.55	750.5	29.71	754.7	42.1	5.6	98	SSE			2		10		SSE	0.217	5.5	Raining	E. Renou.
Toulouse, Observatory	29.24	742.8	29.97	761.1	45.5	7.5	100	SSE			1		10			0.724	18.40	Light rain	The Staff.
Tours	29.53	750.0	29.72	755.0	50.7	10.4	95	SSW			1		10		SSW	0.299	7.6		C. Marquet.
Versailles, (near Paris)			29.09	754.2	43.5	6.4	97	SSW			3		10			0.144	3.66	Raining	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.32	770.0	30.34	770.7	45.1	7.3	91	NNW	15.0	6.7			10			0.008	0.2	Covered	Marc Dechevrens, S. J.
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NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; for Montsouris, the barometer reduced to freezing but not to sea-level. At Mirecourt and Rochefort the cloud directions are apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time.

*Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg																			Prof. Dr. Hoh.
Berlin	29.83	757.7	30.00	762.0	44.6	7.0	81	S			1		10			0	0		Prof. Arndt.
Breslau	29.54	750.2	30.07	763.7	41.2	5.1	92	ESE			1		10			0	0		Royal University Obs'y.
Carlsruhe	29.46	748.3	29.90	759.4	44.2	6.8	80	E			1		10			0	0		Albert Senz.
Cassel	29.33	745.0	29.94	760.4	42.4	5.8	82	SE			2		10	NE		0	0		Dr. H. Möhl.
Crefeld	29.65	753.2	29.82	757.3	42.8	6.0	85	SE			4		10			0	0		Director Lose.
Emden	29.86	758.4	29.89	759.3	40.8	4.9	88	SE			2		10			0	0		Prof. Prestel.
Frankfort on the Main	29.60	751.7	29.97	761.2	43.7	6.5		SE			1		8			0.008	0.2		Physical Society.
Friedrichshafen	28.46	722.9	29.93	760.1	42.1	5.6	68	S			2		2	S		Inap.	Inap.		M. Wilhelm.
Hamburg	29.88	758.9	29.95	760.7	40.1	4.5	92	SE			4		8k			0.012	0.3		Captain F. Hegemann.
Kiel	29.90	759.4	29.91	759.8	39.9	4.4	85	SE			2		10			0	0		Prof. G. Karsten.
Königsberg, (Prussia)	30.09	764.3	30.17	766.3	36.3	2.4	85	SE								0.039	0.99	Cloudy	Prof. E. Luther.
Köslin			30.06	763.4	41.0	5.0		SE			2		4			0	0		H. Müller.
Leipsic, Observatory	29.58	751.2	30.01	762.2	40.8	4.9	92	E			2		9	ESE		0	0		Prof. Bruhns.
Memel, Naval School	30.17	766.4	30.22	767.6	35.2	1.8	91	SE			2		10ks						Reinbrech von Skalweit.
Neufahrwasser	30.13	765.2	30.14	765.6	39.4	4.1	95	SSE			1		10			0.004	0.1	Raining	A. Lothes.
Posen	29.79	756.7	30.09	764.3	40.6	4.8	88	ESE			6–7					0.059	1.50	Covered	Dr. Magener.
Strassburg Obs., (in Alsace)	29.36	745.7	29.92	760.0	43.0	6.1	82	NE			1		10			0.001	0.02		Dr. Schur.
Stuttgart	28.93	734.9	29.91	759.6	42.3	5.7	74	SE			1		8	S		0.051	1.3		Prof. Schoder.
Treves, (Trier)	29.26	743.1	29.78	756.3	42.6	5.9	74	S			4		10			0.059	1.49	Dense fog	Prof. Flesch.
Weissenburg, (Bavaria)	28.39	721.0	29.93	760.2	39.2	4.0	84	Calm	0	0			10		SE	0	0		Dr. Von Bebber.
Wustrow, Naval School	30.05	763.3	30.08	764.0	38.8	3.8	85	E			3		10			0	0	Covered	E. F. Schütz.
German Naval Series.																			

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet: Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4. Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines, Königsberg, Posen and Wustrow in cubic zolls. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Athens	29.51	749.6	29.90	759.5	60.4	15.8		W			1							Very clear	Dr. J. F. J. Schmidt.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and wind-force; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Kurrachee	29.96	761.0	30.01	762.3	79.8	26.6	47	NNW	11.0?	4.9?			8			0	0	Threatening	
Deesa	29.49	748.9	29.97	761.1	80.9	27.2	50	Calm					0			0	0	Blue sky	
Bombay	29.87	758.7	29.91	759.6	80.2	26.8	79	NW	8.0	3.6			10	S		0	0	Overcast	
Poona	27.90	708.7	29.90	759.4	81.3	27.4	43	SE					10	S	SE	0	0	D. clouds	
Lahore	29.35	745.5	30.13	765.3	60.6	15.9	54	NW	0.7	0.3			2			0	0	Blue sky	
Belgaum	27.40	695.9	29.94	760.4	76.9	24.9	51	Calm					5	WSW		0	0	D. clouds	
Bangalore																			
Roorkee	29.14	740.0	30.07	763.8	64.2	17.9	37	NW	1.5	0.7			6			0	0		
Agra	29.47	748.6	30.06	763.4	68.7	20.4	46	NW								0	0		
Trichinopoly																			
Nagpur	28.94	735.2	30.00	761.9	77.6	25.3	66	E	3.6	1.6			8		NE	0	0	D. clouds	
Madras																			
Lucknow	29.67	753.6	30.05	763.3	70.8	21.6	75	Calm	0.8	0.4						0	0	Blue sky	
Allahabad	29.72	755.0	30.05	763.2	66.2	19.0	57	Calm	0.1	0.04			0			0	0	Blue sky	
Patna	29.88	758.8	30.06	763.6	68.7	20.4	59	W	0.9	0.4			8	W	W	0	0	D. clouds	
Hazaribagh	28.00	711.2	30.08	763.9	65.6	18.7	41	NW	3.5	1.6			2			0	0		
Cuttack	29.96	760.9	30.04	763.0	76.3	24.6	63	NE	1.3	0.6						0	0	Blue sky	
Calcutta (Alipore)	30.04	762.9	30.06	763.4	66.4	19.1	72	NNW	0.5	0.2			0			0	0	Blue sky	
Goalpara	29.62	752.4	30.02	762.6	70.8	21.6	64	Calm	0.2	0.1			0			0	0	Blue sky	
Chittagong	29.94	760.5	30.04	762.9	69.2	20.7	82		3.5	1.6			0			0	0	Blue sky	
Sibsagar	29.72	754.9	30.07	763.8	62.0	16.7	91	ENE	0.8	0.4			8	W		0	0	D. clouds	
Rangoon																			
Jubbulpore	28.64	727.3	30.02	762.5	76.0	24.4	55	NE	0.5	0.2			3	NE		0	0	D. clouds	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instru'tal error and temperature. Inches.	Barometer. Corrected for instru'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	22.02	559.4	30.02	762.4	22.3	— 5.4	69	N			1		10	NNE		0	0		Ab. Dom. Morgini.
Stelvio	21.96	557.8	29.93	760.3	21.2	— 6.0		WSW			1		0			0	0		Signora Ernesta Manfredi.
Udine	29.48	748.9	29.90	759.5	54.0	12.2	51	SE	6.3	2.8			1			0.295	7.5		Prof. Giovanni Clodig.
Padua	29.79	756.7	29.90	759.5	52.0	11.1	64	NE	6.9	3.1			7	E		0.067	1.7		Prof. Dott. Lorenzoni.
Vicenza	29.72	754.8	29.91	759.8	52.3	11.3	61	NE	0.7	0.3			3	E		0.094	2.4		Conte Alm. Da Schio.
Verona	29.67	753.6	29.90	759.4	49.3	9.6	79	NW	0	0			0			0	0		Dott. B. Bertoncelli.
Bergamo	28.63	727.2	29.98	761.5	49.3	9.6	71	NW			2		5			0	0		Prof. Trionfini Carlo.
Domodossola	28.94	735.1	30.00	761.9	43.7	6.5	78						10			0	0		Prof. Giuseppe Calza.
Milan	29.44	747.7	29.97	761.1	50.5	10.3		WNW			2		5	NNE		0	0		Ab. Gio. Capelli.
Pavia	29.62	752.3	29.97	761.3	42.3	5.7	97	SW			2		10			0	0		Prof. Gio. Cantoni.
Moncalieri	29.08	738.5	30.00	762.1	46.4	8.0	80	N	0	0			8	E		0	0		Prof. P. F. Denza.
Mondovi	28.05	712.5	30.01	762.2	41.7	5.4	78	NW			2		7			0	0		Prof. D. C. Bruno.
Porto Maurizio	29.69	754.1	29.91	759.8	57.2	14.0	50	WSW			2		2			0	0		Prof. L. Vassallo.
Genoa	29.78	756.2	29.91	759.6	51.8	11.0	53	N	8.7	3.9			0			0	0		Prof. G. M. Garibaldi.
Piacenza	29.70	754.4	29.96	761.0	46.9	8.3	83	NW	12.5	5.6			2	N		0.016	0.4		Dott. G. Manzi.
Parma	29.63	752.6	29.95	760.8	50.2	10.1	83	SW			4		9			0.043	1.1		Prof. P. Pigorini.
Florence	29.65	753.2	29.91	759.8	53.1	11.7	61	N			2		7	NE		0	0		Cav. F. Meucci.
Leghorn	29.76	755.9	29.85	758.1	53.6	12.0	72	ENE	3.1	1.4			8	SE		0.157	4.0		Prof. P. Monte.
Siena	28.63	727.3	29.86	758.4	49.5	9.7	66	NNW	0	0			9	NE		0	0		Prof. L. Toscani.
Urbino	28.29	718.5	29.87	758.6	48.6	8.2	97	SW			2		8			2.311	58.7		Prof. P. Serpieri.
Pesaro	29.82	757.4	29.87	758.7	52.7	11.5	85	N	19.2	8.6			6	E		0.622	15.8		Prof. Luigi Guidi.
Ancona	29.78	756.3	29.89	759.1	52.5	11.4	80	W			4		2			1.087	27.6		Prof. F. DeBosis.
Grosseto	29.73	755.2	29.85	758.1	53.4	11.9	66	NNE			4		6	SE		0.138	3.5		Avv. P. Ponticelli.
Rome	29.65	753.2	29.83	757.7	53.6	12.0	77	N	0.7	0.3			1			0	0		Prof. P. A. Secchi.
Naples, O. U	29.68	752.5	29.83	757.6	55.4	13.0	66	E			2		6	SE		0.673	17.1		Prof. L. Palmieri.
Lecce	29.60	751.8	29.85	758.2	56.8	13.8	78	SE	16.8	7.5			8	S		0.087	2.2		Prof. C. De Giorgi.
Cosenza	28.96	735.5	29.85	758.3	54.3	12.4	72	NW	0	0			6			0.039	1.0		Prof. F. D. Conti.
Cagliari					56.3	13.5	61	N			2		5	NW		0.012	0.3		Prof. A. Pacinotti.
Riposto, (Sicily)					58.3	14.7	68	S			2		5	N		0	0		Prof. F. Caflero.
Palermo	29.54	750.2	29.79	756.7	57.6	14.2	62	W	7.4	3.3			10	W		0.020	0.5		Prof. G. Cacciatore.
Caltanissetta	27.83	706.9	29.79	756.7	50.7	10.4	78	NW			4		5	NE		0.094	2.4		Prof. A. Pagani.
Syracuse	29.69	754.2	29.77	756.1	58.3	14.6	62	E			1		7	SW		0.031	0.8		Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.30	744.3	29.86	758.4	53.8	12.1	56	NW	1.3	0.6			5			0	0		Prof. F. Brioschi.

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,548.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Siena, 348.5 m., or 1,143.3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Tokei (Yeddo)																			
Tokei (Yeddo) University	30.10	764.5	30.20	767.1	43	6.1	92	N	4	1.8			10n						The Observatory.
																		Raining	Prof. P. V. Veeder.

MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Aguascallentes																			I. N. Marin, M. D.
Córdoba																			C. Peña, M. D.
Cuernavaca																			L. Castillo, A. E.
Guadalajara																			Prof. L. Perez.
Guanajuato																			Prof. V. Fernandez.
Leon																			Prof. M. Leal.
Mexico	29.22	589.7	30.37	771.3	50.9	10.5	78	Calm	0	0			10n			0.18	4.6	Raining	Central Observatory.
Orizaba																			N. N.
Orizaba																			I. Orozco, M. D.
Pabellon, (Aguascalts)																			M. V. de Leon, M. E.
Puebla																			Prof. B. Gonzalez.
Toluca																			Prof. C. Velazquez.
Tlacotalpam																			Prof. F. R. Bayly.
San Luis Potosi																			G. Barroeta, M. D.
Vera-Cruz																			Prof. J. Rossell.
Zacatecas																			J. A. Bonilla, M. E.
Puebla, (Catholic Institute)																			P. Spina. [M. M. D. D.
Morelia																			M. Tena, F. L. Páramo.

Note.—The elevation of Aguascallentes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,299 m., or 7,542.9 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabell m, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	29.70	754.3	29.70	754.3	41.7	5.4		SSE			4					0	0		
Groningen	29.76	756.0	29.82	757.4	41.2	5.1		S			2					0	0		
Helder	29.69	754.1	29.69	754.1	41.2	5.1		SE			3					0.063	1.6		
Hellevoetsluis			29.75	755.7	41.2	5.1	92	SE			5								
Utrecht	29.71	754.7	29.76	755.9	42.3	5.7	74	SSE			5		10			0.028	0.7	Dull	H. v d Brink.

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	29.71	754.7	29.77	756.1	41.4	5.2	66	SSE	4.9	2.2	.....	.....	4	.....	.....	0	0	.....	
Brönö	29.87	758.7	29.91	759.7	36.3	2.4	68	SSE	7	3	.....	.....	2	.....	.....	0	0	.....	
Christiania	29.85	758.3	30.01	762.2	36.0	2.2	89	NE	0	0	.....	.....	10	.....	.....	0.071	1.8	.....	
Tromsö	29.85	758.3	29.90	759.4	39.9	4.4	85	SW	13	6	.....	.....	4	.....	.....	0	0	.....	
.....																			

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	29.81	757.1	30.00	762.0	58.6	14.8	95	W	2.5	1.1	.....	.....	9	.....	.....	0.630	16.0	.....	Dr. J. A. Sampaio.
Campo Major	29.16	740.6	30.19	766.8	59.0	15.0	82	WSW	9.4	4.2	.....	.....	9	WNW	.....	0.043	1.1	.....	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.11	764.9	30.19	766.7	70.7	21.5	62	SE	6.3	2.8	.....	.....	5	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.83	757.7	30.19	766.8	61.0	16.1	81	W	6.3	2.8	.....	.....	8	.....	.....	0.036	0.9	.....	The Staff.
Ponta Delgada, (Azores)	29.97	761.3	30.04	763.1	60.8	16.0	87	E	1.3	0.6	.....	.....	10	.....	.....	0.575	14.6	.....	
.....																			
.....																			

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

Naval Series. Vessels.	Sea or swell. Height scale 0–9	Sea or swell. Direction from—		
S. S. Bartholomew Dias.	.....	.....	.....	R, A. T. Pinha, Com'd't.
S. S. India.	.....	.....	.....	A. D. Pedroso, Com'd't.
S. S. Mindello.	.....	.....	.....	J. F. R. R. Bastos, Com'd't.
S. S. Sado.	.....	.....	.....	A. N. P. Sampaio, Com'd't.

Note.—The originals give the barometer reduced to freezing, but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the cooperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.69	754.0	30.12	765.1	37.4	3.0	88	SSE	9	4	.....	.....	10ks	.....	.....	.....	.....	.....	Astronomical Obs.
Wilna	29.86	758.5	30.30	769.7	34.5	1.4	89	Calm	0	0	.....	.....	7	.....	.....	.....	.....	Light clouds	Astronomical Obs.
Dorpat	30.10	764.6	30.36	771.1	33.3	0.7	100	ESE	4	2	.....	.....	10n	.....	.....	.....	.....	.....	Prof. Dr. Weihrauch.
St. Petersburg	30.40	772.2	30.42	772.6	31.5	— 0.3	98	SSE	9	4	.....	.....	10n	.....	.....	.....	.....	Light fog	Central Physical Obs.
Kuopio	29.95	760.6	30.28	769.2	32.0	0.0	100	S	18	8	.....	.....	10	.....	.....	Blank	Blank	.....	Ch. Forsten.
Kieff	29.74	755.4	30.41	772.5	33.1	0.6	71	ESE	13	6	.....	.....	2cks	.....	.....	.....	.....	Light clouds	Physical Cabinet.
Nikolaiev	30.23	767.8	30.30	769.6	41.7	5.4	63	ENE	13	6	.....	.....	2s	.....	.....	.....	.....	.....	Kurdakof.
Kertch	30.29	769.3	30.31	769.8	41.2	5.1	82	E	16	7	.....	.....	0	.....	.....	.....	.....	.....	Lagorio.
Moscow	30.19	766.8	30.80	782.3	11.5	—11.4	93	S	7	3	.....	.....	0	.....	.....	.....	.....	.....	Meteorological Obs.
Lugan	30.37	771.5	30.59	777.0	34.9	1.6	46	E	18	8	.....	.....	0	.....	.....	.....	.....	.....	Meteorological Obs.
Archangel	30.38	771.7	30.40	772.2	26.2	— 3.2	96	SW	18	8	.....	.....	10	.....	.....	.....	.....	.....	Ogorodnikof.
Tiflis	29.14	740.1	30.63	777.9	41.5	5.3	66	Calm	0	0	.....	.....	7ks	.....	.....	.....	.....	.....	Physical Observatory.
Astrakhan	30.79	782.0	30.71	779.9	30.6	— 0.8	64	NE	2	1	.....	.....	0	.....	.....	.....	.....	.....	Sebastianof.
Kasan	30.46	773.6	30.76	781.2	16.0	— 8.9	94	Calm	0	0	.....	.....	6c	.....	.....	.....	.....	.....	Physical Cabinet.
Orenburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Tschernischet.
Ekaterinburg	29.47	748.5	30.48	774.3	20.8	— 6.2	90	W	13	6	.....	.....	0	.....	.....	.....	.....	.....	Meteorological Obs.
Nukuss	30.37	771.4	30.62	777.7	30.9	— 0.6	73	NNE	0	0	.....	.....	0	.....	.....	.....	.....	.....	
Kasaly	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Tashkend	28.78	731.1	30.59	776.9	36.0	2.2	89	NW	4	2	.....	.....	10n	.....	.....	.....	.....	.....	Bobrof.
Barnaul	29.78	756.5	30.35	771.0	14.5	— 9.7	87	SW	0	0	.....	.....	10	.....	.....	.....	.....	Snowing	Michelson.
Yeniseisk	29.85	758.2	30.23	767.7	—17.0	—27.2	85	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Meteorological Obs.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Marks.
Oorga	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Usolzef.
Krotkowo	30.27	768.8	30.77	781.5	21.4	— 5.9	79	S	2	1	.....	.....	1s	.....	.....	.....	.....	.....	Mossin.
Peking, (China)	30.30	769.7	30.45	773.3	24.1	— 4.4	38	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Cand. Fatjanow.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Physical Observatory
Vladivostock	30.03	762.8	30.07	763.8	19.8	— 6.8	68	NW	16	7	.....	.....	0	.....	.....	.....	.....	.....	Meteorological Obs.
Nikolaievsk, on the Amoor	.....	.....	.....	.....	0.5	—17.5	78	E	7	3	.....	.....	8k	.....	.....	.....	.....	.....	
.....																			

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Viennasymbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Rave, Director.
Bilbao, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Manuel de Naveran
Burgos, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Domingo Martin y Perez.
Madrid, Royal Observatory	27.86	707.5	30.11	764.8	51.1	10.6	89	SE	3.7	1.67	.....	0	7	.....	.....	Inap.	Inap.	Cloudy	The Staff.
Murcia, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Olayo Diaz, Director.
Santiago, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	30.13	765.2	30.19	766.9	76.1	24.5	79	N	8.9	4.0	.....	.....	10n	.....	N	0.012	0.3	Cloudy	Benito Vines, S. J.
San Fernando, Naval Obs'y	30.12	765.0	30.22	767.6	61.0	16.1	88	WNW	7.3	3.3	.....	0	8	.....	NW	0	0	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, IW.	.....	.....	29.99	761.8	78.4	25.8	67	NE	14.5	6.47	.....	3c	3k	NE	NE	0	0	D. clouds	Leonardo de Tejeda, Chief of Engineers.
.....																			

Note.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p m., instead of 8:19 a m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	30.18	766.5	30.22	767.5	32.0	0.0	.....	S	.....	.....	4	.....	10	.....	.....	0.079	2.0	.....	
Umea	30.13	765.4	30.19	766.7	32.0	0.0	100	S	.....	.....	2	.....	10	.....	.....	0.130	3.3	Rain & snow	
Hernosand	30.09	764.2	30.14	765.5	34.2	1.2	96	.....	.....	.....	.....	.....	10	.....	.....	0.059	1.5	.....	
Stockholm	29.93	760.1	30.10	764.6	39.9	4.4	93	S	.....	.....	2	.....	10	.....	.....	0.047	1.2	.....	
Wisby	30.08	763.9	30.13	765.4	41.0	5.0	97	SSW	.....	.....	4	.....	10	.....	.....	0.043	1.1	.....	
Sub-Series.																			
Upsala	30.02	762.6	30.10	764.5	37.6	3.1	98	SE	0	0	.....	.....	10	.....	ESE	0.059	1.50	Raining	Dr. Hildebrandsson.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.50	724.0	29 97	761.2	41.7	5.4	70	SSW	.....	.....	1	.....	10	.....	.....	0	0	Covered	The Observatory.
Zurich	28.26	717.9	29.95	760.8	39.2	4.0	67	W	.....	.....	1	.....	9	.....	.....	0	0	Cloudy	The Observatory.

Note.—For Geneva the corresponding departures from the normal values are: Barometer, —3.1 mm; Thermometer, +2.1 cent.; Relative Humidity, —9 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	29.98	761.6	58.3	14.6	76	NE	2	1.0	.....	.....	5	.....	SW	0	0	.....	The Observatory.
Fao, (Persian Gulf)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salonica	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	B. Stefanides.
Valona	.....	.....	29.86	758.4	61.2	16.2	.....	SE	.....	.....	1	.....	8	.....	.....	0.24	6.	Very cloudy	A. Bertrand.
Varna	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Imperial Observatory.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.87	758.7	29 98	761.6	71.4	21.9	57	NE	.....	.....	1	.....	3c;ck	.....	.....	0	0	D. clouds	Prof. C. V. A. Van Dyck

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	29.08	738.6	29.15	740.4	34.8	1.6	96	Calm	0	0	.....	10	.....	.....	.....	.....	.....	.....	Hon. J. Ferguson.
Brockville, Ontario	29.21	741.9	29.52	749.8	33	0.6	.....	W	4	1.8	.....	.....	10s	.....	SW	0.63	16.0	Cloudy	W. R. Bigg.
*Chatham, N. B	29.11	739.4	29.17	740.9	40	0.4	92	SW	3	1.3	.....	.....	10n	.....	Calm	1.14	29.0	Cloudy	G. A. Blair.
Charlottetown, P. E. Island	29.28	743.7	29.32	744.7	49	0.4	96	S	21	9.4	.....	.....	8ks	.....	S	0.480	12.19	Cloudy	H. J. Cundall, C. E.
Cornwall, Ontario	29.24	742.7	29.44	747.8	34.6	1.4	67	NW	.....	.....	2	.....	10n	.....	.....	.....	.....	Snowing	James Smith, M. A.
Dalhousie, N. B	29.11	739.4	29.14	740.1	34.2	1.2	96	W	.....	.....	1	.....	.....	.....	.....	.....	.....	Raining	H. A. Johnson.
Esquimault, B. C	30.10	764.5	30.14	765.5	42.1	5.6	100	N	.....	.....	.....	.....	10	.....	.....	0.24	6.1	Cloudy	W. H. Bevis.
*Father Point, Quebec	29.05	737.9	29.07	738.4	37	2.8	97	SW	16	7.2	.....	.....	10n	.....	S	0.83	21.1	Light rain	J. McWilliams.
Fredericton, N. B	29.18	741.2	29.25	742.9	43.2	6.2	98	W	2.0	0.9	.....	.....	10n	.....	W	1.245	31.63	Raining	Prof. Harrison.
*Fort Garry, Manitoba	29.25	742.9	30.17	766.3	0	—17.8	94	S	6	2.7	.....	2k	2ks	SW	SW	0	0	Fair	James Stewart.
Goderich, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	H. J. Strang, M. A.
Granton, Ontario	28.48	723.4	29.02	752.3	30.1	— 1.1	99	W	.....	.....	2	.....	10n	.....	.....	0.29	7.4	Snowing	James Grant.
*Halifax, N. S	29.84	745.2	29.47	748.5	53	11.7	99	SW	28	12.5	.....	.....	10n	.....	SW	0.913	23.19	Light rain	F. Allison, M. A.
Hamilton, Ontario	29.24	742.7	29.61	752.1	35.7	2.1	75	SW	.....	.....	3	8os	.....	SW	.....	0.29	7.4	Cloudy	Geo. Dickson, M. A
Heart's Content, N. F	29.84	757.9	29.86	758.4	37	2.6	90	SW	.....	.....	3	.....	10	.....	.....	0.20	5.1	Overcast	E. Weedon.
*Kingston, Ontario	29.19	741.4	29.53	750.0	35	1.7	90	W	7	3.1	.....	.....	10s	.....	Calm	0.71	18.0	Cloudy	S. Woods, M. A.
Little Glace Bay, N. S	29.47	748.5	29.51	749.5	52.0	11.1	.....	S	20	8.9	.....	.....	10n	.....	.....	0.47	11.9	Raining	C. H. Rigby.
*Montreal, Quebec	29.19	741.4	29.39	746.5	36	2.2	81	SW	17	7.6	.....	.....	10s	.....	W	0.74	18.8	Cloudy	C. H. McLeod, C. E.
*Parry Sound, Ontario	28.79	731.3	29.50	749.3	28	— 2.2	88	N	20	8.9	.....	.....	10n	.....	N	0.49	12.4	Cloudy	Rev. R. Mosley.
Peterboro, Ontario	28.75	730.2	29.50	749.3	33.7	0.9	77	SW	.....	.....	2	.....	10n	.....	.....	0.04	1.0	Snowing	J. F. Jeffers, B. A.
Port Dover, Ontario	28.94	735.1	29.05	758.1	33	0.6	89	SW	13	5.8	.....	.....	10n	.....	SW	0.20	5.1	Light rain	H. Morgan.
Port Hastings, N. S	29.49	749.0	29.54	750.3	34.4	1.3	.....	S	10	4.5	.....	.....	.....	.....	.....	0.40	10.2	Raining	Peter Grant.
Port Stanley, Ontario	29.02	737.1	29.68	753.9	34	1.1	84	W	26	11.6	.....	.....	10n	.....	W	0.09	2.3	Cloudy	M. Payne.
*Quebec, Quebec	28.99	736.3	29.32	744.7	37	2.8	90	SW	25	11.2	.....	.....	10n	.....	SW	0.86	21.8	Clearing	Capt. Ashe, R. N.
*Rockliffe, Ontario	29.02	737 1	29.49	749.0	30	— 1.1	94	NW	10	4.5	.....	.....	10s	.....	NW	0.23	5.8	Cloudy	W. H. McIntyre.
St. John, N. B	29.11	739.4	29.27	743.4	40	0.4	92	S	12	5.4	.....	.....	10n	.....	.....	0.79	20.1	Heavy rain	G. Murdock, C. E.
*Saugeen, Ontario	28.86	733.0	29.57	751.1	31	— 0.6	99	N	16	7.2	.....	.....	10s	.....	.....	0.22	5.6	Light snow	K. Stewart.
Stayner, Ontario	28.72	729.5	29.51	749.5	34	1.1	80	W	8	3.6	.....	.....	10n	.....	W	0.15	3.8	Threatening	R. J. Cole.
Stratford, Ontario	28.30	718.8	29.02	752.3	30.0	— 1.1	96	NW	15.0	6.7	.....	.....	10n	.....	.....	0.140	3.56	Snowing	C. J. MacGregor, M. A.
*Sydney, C. B	29.53	750.0	29.56	750.8	53	11.7	95	SW	26	11.6	.....	.....	10n	.....	SW	0.70	17.8	Light rain	T. C. Hill.
*Toronto, Ontario	29.17	740.9	29.56	750.8	35	1.7	75	SW	16	7.2	.....	.....	10ks	.....	W	0.06	1.5	Cloudy	Magnetic Observatory.
Windsor, N. S	29.29	744.0	29.39	746.5	55.0	12.8	98	S	35	15.6	.....	.....	10n	.....	.....	0.44	11.2	Raining	Prof. John E. Oram.
Woodstock, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Montgomery.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	35.0	1.7	100	SE	.....	.....	.....	.....	10n	.....	.....	0.08	2.0	Raining	John Delany.

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

1877.—December 6.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.31	744.5	29.54	750.3	36	2.2	80	W	8	3.6	.....	.....	10s	.....	Calm	0.43	10.9	Cloudy	
Alpena, Michigan	29.07	738.4	29.74	755.4	22	— 5.6	86	NW	14	6.3	.....	.....	10n	.....	NW	0.06	1.5	Light snow	
Atlantic City, New Jersey	29.71	754.6	29.73	755.1	40	4.4	100	W	20	8.9	.....	.....	10s	.....	W	0.65	16.5	Cloudy	
Augusta, Georgia	30.02	762.5	30.22	767.6	39	3.9	68	W	6	2.7	.....	0	Haze	.....	Calm	0.29	7.4	Clear	
Baltimore, Maryland	29.76	755.9	29.81	757.2	41	5.0	57	W	11	4.9	.....	2k	5s	NW	NW	0.47	11.9	Clearing	
Barnegat, New Jersey	29.66	753.4	29.68	753.9	42	5.6	83	NW	18	8.0	.....	.....	10ks	.....	NW	0.53	13.5	Cloudy	
Bismarck, Dakota	28.15	715.0	29.93	760.2	17	— 8.3	83	S	6	2.7	.....	.....	10s	.....	Calm	Inap.	Inap.	Cloudy	
Boise City, Idaho	27.49	698.2	30.33	770.4	20	— 6.7	78	Calm	0	0	.....	0	5s	.....	Calm	0	0	Fair	
Boston, Massachusetts	29.28	743.7	29.43	747.5	45.5	7.5	88	W	10	4.5	.....	.....	10s	.....	SW	0.88	22.4	Cloudy	
Brackettville, Texas	29.40	746.7	30.55	776.0	25	— 3.9	38	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Breckenridge, Minnesota	29.11	739.4	30.24	768.1	— 6	—21.1	90	NW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Brownsville, Texas	30.59	777.0	30.66	778.7	36	2.2	80	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Buffalo, New York	28.86	733.0	29.56	750.8	36	2.2	100	W	25	11.2	.....	.....	10n	.....	W	1.00	25.4	Sleeting	
Burkes, Arizona	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Burlington, Vermont	29.19	741.4	29.45	748.0	42	5.6	75	W	10	4.5	.....	.....	10s	.....	W	0.98	24.9	Cloudy	
Cairo, Illinois	29.88	758.9	30.30	769.6	35	1.7	61	NW	16	7.2	.....	.....	10s	.....	NW	0	0	Cloudy	
Camp Grant, Arizona	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Camp Verde, Arizona	27.13	689.1	30.62	777.7	20	— 6.7	56	NW	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Campo, California	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Cape Hatteras, N. Carolina	29.85	758.2	29.86	758.4	53	11.7	86	N	10	4.5	.....	.....	10s	.....	NW	3.31	84.1	Cloudy	
Cape Henry, Virginia	29.78	756.4	29.80	756.9	49	9.4	93	NW	16	7.2	.....	.....	10s	.....	NW	0.25	6.3	Cloudy	
Cape Lookout, N. Carolina	29.89	759.2	29.91	759.7	58	14.4	57	W	12	5.4	.....	.....	10s	.....	W	1.73	43.9	Cloudy	
Cape May, New Jersey	29.72	754.9	29.75	755.6	42	5.6	83	W	36	16.1	.....	.....	10s	.....	W	0.41	10.4	Cloudy	
Charleston, South Carolina	30.08	764.0	30.15	765.8	46	7.8	39	W	16	7.2	.....	.....	10s	.....	SW	0.31	7.9	Cloudy	
Cheyenne, Wyoming	24.04	610.6	29.98	761.5	32	0.0	30	NW	15	6.7	.....	0	5s	.....	NW	0	0	Fair	
Chicago, Illinois	29.28	743.7	30.00	762.0	30	— 1.1	78	NW	10	4.5	.....	.....	10s	.....	Calm	0.04	1.0	Cloudy	
Cincinnati, Ohio	29.32	744.7	29.98	761.5	35	1.7	70	W	12	5.4	.....	.....	10n	.....	W	Inap.	Inap.	Light snow	
Cleveland, Ohio	29.05	737.9	29.79	756.7	33	0.6	61	SW	25	11.2	.....	.....	10s	.....	SW	0.17	4.3	Cloudy	
Concho, Texas	28.45	722.6	30.20	769.4	20	— 6.7	68	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Corsicana, Texas	30.09	764.3	30.60	777.2	30	— 1.1	68	NW	7	3.1	.....	0	0	.....	.....	0	0	Clear	
Davenport, Iowa	29.51	749.5	30.20	767.1	22	— 5.6	72	NW	12	5.4	.....	.....	10s	.....	NW	0.05	1.3	Cloudy	
Denison, Texas	29.70	754.4	30.58	776.7	30	— 1.1	68	W	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Denver, Colorado	24.86	631.4	30.08	764.0	28	— 2.2	59	SE	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Detroit, Michigan	29.05	737.9	29.73	755.1	31	— 0.6	79	W	12	5.4	.....	.....	10s	.....	Calm	0.02	0.5	Cloudy	
Dodge City, Kansas	27.68	703.1	30.20	767.1	14	—10.0	71	W	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Dubuque, Iowa	29.40	746.7	30.15	765.8	21	— 6.1	85	NW	7	3.1	.....	.....	10s	.....	Calm	0.11	2.8	Cloudy	
Duluth, Minnesota	29.45	748.0	30.20	767.1	5	—15.0	75	Calm	0	0	.....	0	0	.....	.....	0.08	2.0	Clear	
Eagle Pass, Texas	29.81	757.2	30.63	778.0	26	— 3.3	75	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Eastport, Maine	29.19	741.4	29.25	742.9	52	11.1	100	S	19	8.5	.....	.....	10n	.....	.....	1.85	47.0	Light rain	
Erie, Pennsylvania	28.96	735.6	29.68	753.9	35	1.7	90	SW	17	7.6	.....	.....	10n	.....	.....	0.42	10.7	Light snow	
Escanaba, Michigan	29.28	743.7	29.99	761.7	11	—11.7	80	NW	16	7.2	.....	0	5s	.....	NW	0.28	7.1	Fair	
Florence, Arizona	28.63	727.2	30.23	767.8	45	7.2	24	E	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Fort Bayard, New Mexico	24.30	617.2	30.30	769.6	17	— 8.3	50	NE	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Fort Craig, New Mexico	25.92	658.4	.....	.....	11	—11.7	57	NW	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Fort Gibson, Indian Ter	29.90	759.4	30.48	774.2	28	— 2.2	77	NW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Fort Griffin, Texas	29.24	742.7	30.64	778.2	25	— 3.9	62	NW	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	29.24	742.7	30.46	773.7	24	— 4.4	87	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Galveston, Texas	30.56	776.2	30.61	777.5	38	3.3	80	NW	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Grand Haven, Michigan	29.22	742.2	29.90	759.4	29	— 1.7	78	NW	20	8.9	.....	.....	10s	.....	Calm	0.17	4.3	Cloudy	
Indianapolis, Indiana	29.20	741.7	30.00	762.0	32	0.0	79	W	7	3.1	.....	.....	10n	.....	W	0.02	0.5	Light snow	
Indianola, Texas	30.61	777.5	30.64	778.2	35	1.7	61	NW	10	4.5	.....	0	1s	.....	Calm	0	0	Clear	
Jacksboro, Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Jacksonville, Florida	30.20	767.1	30.23	767.8	48	8.9	42	NW	12	5.4	.....	.....	10s	.....	Calm	1.28	32.5	Cloudy	
Keokuk, Iowa	29.54	750.3	30.20	767.1	24	— 4.4	75	NW	8	3.6	.....	.....	10s	.....	Calm	0.05	1.3	Cloudy	
Key West, Florida	30.12	765.0	30.15	765.8	70.0	21.1	92	N	6	2.7	.....	.....	10s	.....	N	0.19	4.8	Cloudy	
Kittyhawk, North Carolina	29.79	756.7	29.82	757.4	50	10.0	78	W	16	7.2	.....	.....	10s	.....	SW	1.09	27.7	Cloudy	
Knoxville, Tennessee	29.15	740.4	30.20	767.1	33	0.6	69	SW	12	5.4	.....	.....	10ks	.....	SW	0.32	8.1	Cloudy	
La Crosse, Wisconsin	29.34	745.2	30.12	765.0	20	— 6.7	85	NW	4	1.8	.....	.....	10s	.....	NW	0.13	3.3	Cloudy	
La Mesilla, New Mexico	26.49	672.8	29.63	752.6	16	— 8.9	57	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Laredo, Texas	.....	.....	.....	.....	27	— 2.8	77	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Leavenworth, Kansas	29.43	747.5	30.34	770.6	26	— 3.3	88	NW	2	0.9	.....	5k	0	NW	.....	0.01	0.3	Fair	
Los Angeles, California	29.78	756.4	30.12	765.0	55	12.8	27	N	16	7.2	.....	0	0	.....	.....	0	0	Clear	
Louisville, Kentucky	29.52	749.8	30.11	764.8	35	1.7	79	W	19	8.5	.....	.....	10s	.....	W	Inap.	Inap.	Cloudy	
Lynchburg, Virginia	29.23	742.4	29.92	760.0	42	5.6	34	W	10	4.5	.....	0	5ks	.....	NW	0.37	9.4	Fair	
Maricopa Wells, Arizona	.....	.....	.....	.....	24	— 4.4	36	N	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Marquette, Michigan	29.20	741.7	29.95	760.7	16	— 8.9	83	W	12	5.4	.....	.....	10s	.....	Calm	0.31	7.9	Cloudy	
Mason, Texas	28.96	734.0	30.84	783.3	24	— 4.4	62	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Memphis, Tennessee	30.03	762.7	30.38	771.6	35	1.7	52	NW	12	5.4	.....	.....	8s	.....	NW	Inap.	Inap.	Cloudy	
Milwaukee, Wisconsin	29.26	743.2	29.99	761.7	23	— 5.0	86	NW	12	5.4	.....	.....	10s	.....	NW	0.05	1.3	Cloudy	
Mobile, Alabama	30.40	772.1	30.45	773.4	37	2.8	62	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Montgomery, Alabama	30.12	765.0	30.37	771.4	36.5	2.5	62	W	6	2.7	.....	0	0	.....	.....	Inap.	Inap.	Clear	
Morgantown, West Virginia	28.82	732.0	29.90	759.4	34	1.1	79	SW	18	8.0	.....	.....	10n	.....	SW	0.58	14.7	Light snow	
Mt. Washington, N. H.	23.06	585.7	29.42	747.3	18	— 7.8	100	NW	36	16.1	.....	.....	10n	.....	NW	3.03	77.0	Light snow	
Nashville, Tennessee	29.68	753.9	30.24	768.1	37	2.8	62	W	6	2.7	.....	10k	0	W	.....	0	0	Cloudy	
New Haven, Connecticut	29.43	747.5	29.54	750.3	47	8.3	85	W	6	2.7	.....	.....	10n	.....	W	1.04	26.4	Light rain	
New London, Connecticut	29.47	748.5	29.52	749.8	48	8.9	85	W	4	1.8	.....	5k	5s	W	W	0.41	10.4	Cloudy	
New Orleans, Louisiana	30.40	772.1	30.46	773.7	40	4.4	48	W	7	3.1	.....	0	0	.....	.....	0	0	Clear	
Newport, Rhode Island	29.45	748.0	29.50	749.3	48	8.9	85	W	14	6.3	.....	.....	10ks	.....	SW	1.00	25.4	Threatening	
New York, New York	29.46	748.3	29.64	752.8	41	5.0	83	SW	31	13.9	.....	.....	8s	.....	SW	0.31	7.9	Cloudy	
Norfolk, Virginia	29.79	756.7	29.85	758.2	48	8.9	86	W	12	5.4	.....	.....	10s	.....	SW	0.62	15.7	Cloudy	
North Platte, Nebraska	27.21	691.1	30.02	762.5	10	—12.2	60	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Olympia, Washington Ter.	30.06	763.5	30.10	764.5	40	4.4	100	Calm	0	0	.....	.....	10n	.....	Calm	0.97	24.6	Heavy rain	
Omaha, Nebraska	29.10	739.1	30.26	768.6	23	— 5.0	88	NW	5	2.2	.....	.....	10s	.....	NW	0.01	0.3	Cloudy	
Oswego, New York	29.24	742.7	29.56	750.8	39	3.9	73	SW	13	5.8	.....	.....	10n	.....	W	0.05	16.5	Light rain	
Pembina, Dakota	29.26	743.2	30.18	766.6	1	—17.2	85	SE	5	2.2	.....	.....	10s	.....	Calm	Inap.	Inap.	Cloudy	
Philadelphia, Pennsylvania	29.66	753.4	29.71	754.6	40	4.4	82	NW	24	10.7	.....	.....	10s	.....	W	0.31	7.9	Cloudy	
Phœnix, Arizona	.....	.....	.....	.....	29	— 1.7	45	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Pike's Peak, Colorado	17.72	450.1	29.94	760.5	9	—12.8	36	NW	32	14.3	.....	5cs	2s	NE	NW	0	0	Cloudy	
Pioche, Nevada	24.30	617.2	30.07	763.8	23	— 5.0	40	S	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Pittsburg, Pennsylvania	28.98	736.1	29.81	757.2	34	1.1	69	W	12	5.4	.....	.....	10s	.....	W	0.70	17.8	Threatening	
Port Huron, Michigan	28.99	736.3	29.67	753.6	31	— 0.6	79	NW	13	5.8	.....	.....	10n	.....	Calm	0.05	1.3	Light snow	
Portland, Maine	29.32	744.7	29.37	746.0	48	8.9	78	W	5	2.2	.....	8k	1s	SW	Calm	0.55	14.0	Clearing	
Portland, Oregon	30.10	764.5	30.20	767.1	40	4.4	91	Calm	0	0	.....	.....	8s	.....	Calm	0.93	23.6	Cloudy	
Prescott, Arizona	25.05	636.3	30.41	772.4	15	— 9.4	65	N	.....	.....	.....	2cs	0	Calm	.....	0	0	Fair	
Punta Rassa, Florida	30.17	766.3	30.19	766.8	60	15.6	88	NW	25	11.2	.....	5ks	5n	NW	NW	0.14	3.6	Light rain	
Red Bluff, California	29.86	758.4	30.24	768.1	36	2.2	70	N	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Rochester, New York	28.95	735.3	29.57	751.1	34	1.1	90	W	9	4.0	.....	.....	10n	.....	W	0.84	21.3	Light snow	

Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

UNITED STATES SERIES.—Continued.

STATIONS.	Barometer. Corrected for instru-m'tal error and temperature. Inches.	Barometer. Corrected for instru-m'tal error and temperature. Millimeters	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Roseburg, Oregon	29.57	751.1	30.16	766.1	33.5	0.8	100	Calm	0	0	.....	0	2s	.....	Calm	0	0	Fair	
Sacramento, California	30.11	764.8	30.20	767.1	35	1.7	80	NE	4	1.8	.....	2c	0	SW	.....	0	0	Fair	
St. Louis, Missouri	29.66	753.4	30.26	769.1	28	—2.2	77	W	16	7.2	.....	.....	10s	.....	Calm	0.01	0.3	Cloudy	
St. Marks, Florida	30.30	769.6	30.32	770.1	42	5.6	42	N	12	5.4	.....	5cs	0	SW	.....	0.75	19.1	Fair	
St. Paul, Minnesota	29.23	742.4	30.12	765.0	17	—8.3	83	NW	8	3.6	.....	.....	10s	.....	Calm	Inap.	Inap.	Cloudy	
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0	Clear	
Salt Lake City, Utah	25.97	659.6	30.30	769.6	15	—9.4	82	W	4	1.8	.....	0	0	.....	.....	0	0	Clear	
San Antonio, Texas	29.90	759.4	30.54	775.7	31	—0.6	69	N	3	1.3	.....	0	0	.....	.....	0	0	Clear	
San Diego, California	30.05	763.3	30.12	765.0	55	12.8	12	NE	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Sandusky, Ohio	29.11	739.4	29.80	756.9	34	1.1	79	SW	22	9.8	.....	.....	10ks	.....	SW	0.02	0.5	Cloudy	
Sandy Hook, New Jersey	29.62	752.3	29.64	752.8	42	5.6	83	W	41	18.3	.....	.....	10ks	.....	NW	0.26	6.6	Clearing	
San Francisco, California	30.11	764.8	30.18	766.6	47	8.3	77	N	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Santa Fé, New Mexico	23.48	596.4	30.02	762.5	10	—12.2	69	NE	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Savannah, Georgia	30.11	764.8	30.21	767.3	45	7.2	46	NW	13	5.8	.....	.....	10s	.....	SW	0.24	6.1	Clearing	
Shreveport, Louisiana	30.31	769.9	30.54	775.7	34	1.1	62	NW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Smithville, North Carolina	29.98	761.5	30.01	762.2	51	10.6	59	W	14	6.3	.....	.....	10s	.....	W	1.23	31.2	Cloudy	
Springfield, Massachusetts	29.36	745.7	29.48	748.8	40	4.4	64	NW	7	3.1	.....	.....	10n	.....	NW	0.69	17.5	Light rain	
Stockton, Texas	27.42	696.5	30.42	772.7	16	—8.9	66	SW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Thatcher's Island, Mass	29.37	746.0	29.42	747.3	46	7.8	92	W	12	5.4	.....	.....	10s	.....	W	0.60	15.2	Cloudy	
Toledo, Ohio	29.11	739.4	29.80	756.9	35	1.7	80	SW	16	7.2	.....	.....	10n	.....	SW	0.02	0.5	Heavy snow	
Tucson, Arizona	27.79	705.8	30.34	770.6	35	1.7	35	W	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Tybee Island, Georgia	30.15	765.8	30.18	766.6	44	6.7	60	NW	22	9.8	.....	0	8s	.....	SW	0.57	14.5	Clearing	
Umatilla, Oregon	29.96	761.0	.....	.....	32	0.0	89	Calm	0	0	.....	.....	10s	.....	Calm	0.08	2.0	Cloudy	
Vicksburg, Mississippi	30.21	767.3	30.49	774.4	36	2.2	53	NW	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Virginia City, Montana	24.84	618.2	29.82	757.4	22	—5.6	72	E	1	0.4	.....	.....	10s	.....	Calm	0	0	Cloudy	
Visalia, California	29.85	758.2	30.24	768.1	33	0.6	89	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Washington, D. C	29.72	754.9	29.84	757.9	39	3.9	55	NW	18	8.0	.....	Haze	8s	.....	W	0.90	22.9	Fair	
Wickenburg, Arizona	.....	.....	.....	.....	20	—6.7	27	N	.....	.....	.....	2c	0	Calm	.....	0	0	Fair	
Wilmington, N. Carolina	29.80	756.2	29.97	761.2	51	10.6	53	W	20	8.9	.....	.....	10s	.....	SW	0.94	23.9	Cloudy	
Winnemucca, Nevada	25.89	657.6	30.25	768.3	17	—8.3	67	NE	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Wood's Holl, Mass	29.43	747.5	29.48	748.8	47	8.3	92	NW	10	4.5	.....	.....	10s; fg	.....	NW	1.02	25.9	Cloudy	
Yankton, Dakota	28.92	734.6	30.33	770.4	12	—11.1	80	W	1	0.4	.....	0	8s	.....	W	0	0	Cloudy	
Yuma, Arizona	29.93	760.2	30.10	764.5	45	7.2	19	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Sub-Series.																			
York Factory, B. A.	29.84	757.9	29.89	759.2	—14.0	—25.6	73	SW	8	3.6	.....	0	0	.....	.....	0	0	Clear	J. Fortescue, W. Wood.
Havana, Cuba, W. I.	30.10	764.5	30.12	765.0	76	24.4	76	NW	6.0	2.7	.....	.....	8n	.....	NW	0	0	Cloudy	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.18	766.0	30.19	766.8	77	25.0	86	N	3	1.3	.....	8c	2s	Calm	N	0	0	.....	James Gall.
Navassa, W. I.	29.96	760.7	30.03	762.7	80	26.7	.....	NE	2	0.9	.....	.....	.....	.....	.....	0	0	Fair	F. M. Everett.
St. Thomas, W. I.	.....	.....	.....	.....	76	24.4	91	ENE	10	4.5	.....	2c	2c	E	.....	0	0	.....	G. O. Gellich.
Paramaribo, D. Guiana, S. A.	.....	.....	29.99	761.7	83	28.3	79	SE	.....	.....	2	5k	6k	E	.....	0	0	½ Cloudy	C. J. Hering.
Batavia, Dutch Guiana, S. A.	30.07	763.6	30.07	763.8	85.1	29.5	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0	Cloudy	Dr. H. Groot.
Medellin, Colombia, S. A.	25.20	640.1	.....	.....	67.5	19.7	82	Calm	.....	.....	0	8cs	2s	.....	.....	0	0	Cloudy	Thomas Herran.
Honolulu, Oahu, H. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Daniel Smith.
Makawao, Maui, H. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,560 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,283 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Ploche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,862.2 ft., or 1,323.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,060 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.67 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Ploche, 5.77 in.; Prescott, 5.86 in.; Salt Lake City, 4.83 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.69 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard Mare Island, Cal.	30.15	765.8	44	6.7	40	4.4	??	SE	12	5.4	.....	.....	3ks	.....	Calm	0	0	.....	.....	.....	
Navy Yard, Pensacola, Fla.	30.40	772.1	.....	.....	40	4.4	82	NW	3	1.3	.....	.....	3	.....	.....	0	0	.....	.....	D. clouds...	
Navy Yard, Portsmouth, N.H.	29.48	748.8	68	20.0	46	7.8	84	WNW	1	0.4	.....	.....	.....	.....	.....	0.4	10.	.....	.....	Cloudy.....	
Naval Hospital, Yokohama, Japan	30.17	766.3	52	11.1	43	6.1	96	NNW	.....	.....	3	.....	10n	.....	NW	Slight	Slight	.....	.....	Light rain...	
Adams. Wide Channel, Chili	29.70	754.4	48	8.9	48	8.9	85	NW	.....	.....	1	.....	5	.....	NW	Light	Light	None	.....	D. clouds....	
Alert, Yokohama, Japan	30.22	767.6	.....	.....	48	8.9	92	NNW	.....	.....	2	.....	10	.....	N	.....	.....	Smooth	.....	Raining.....	
Alliance, Constantinople, Turkey.	30.07	763.8	68	20.0	61	16.1	77	N	.....	.....	1	.....	6	.....	Calm	.....	.....	.....	.....	Pleasant.....	
Ashuelot. Shanghai, China	30.36	771.1	55	12.8	46	7.8	92	N	.....	.....	3–5	.....	8	.....	N	.....	.....	.....	.....	Squally.....	
Canonicus, New Orleans, La	30.39	771.9	38	3.3	41	5.0	91	NW	.....	.....	3	.....	2	.....	.....	.....	.....	.....	.....	Pleasant.....	
Colorado, New York, N. Y.	29.62	752.3	43	6.1	41.5	5.3	78	WSW	25	11.2	.....	.....	9	.....	W	0.31	7.9	.....	.....	Clearing... ..	
Despatch, Constantinople, Turkey.	30.07	763.8	67	19.4	59	15.0	82	NE	.....	.....	1	.....	5	.....	NE	.....	.....	.....	.....	Pleasant.....	
Essex, S. 0° 08′, E. 8° 54′	29.85	758.2	84	28.9	87	30.6	88	SW	.....	.....	2	.....	3	.....	.....	.....	.....	Smooth	SW	D. clouds.....	
Franklin, Norfolk, Va.	.....	.....	.....	.....	49	9.4	71	NW	7	3.1	.....	.....	2?	.....	NW	1.5	38.	.....	.....	Cloudy.....	
Guard, Lisbon, Portugal	30.18	766.6	64	17.8	62	16.7	88	NW	.....	.....	0–1	.....	5	.....	Var.	.....	.....	.....	.....	Misty.....	
Lackawana, Mare Island, Cal.	30.21	767.3	.....	.....	47	8.3	70	E	.....	.....	2	.....	0	.....	.....	.....	.....	.....	.....	Blue sky.....	
Marion, N. 38° 50,′ E. 15° 13′	29.86	758.4	60	15.6	59	15.0	94	WNW	.....	.....	2	.....	5	.....	NW	Light	Light	Smooth	NW	D. clouds.....	
Michigan, Erie, Pa	29.22	742.2	68	20.0	34	1.1	71	WSW	.....	.....	5	.....	10	.....	wsw	.....	.....	.....	.....	Snowing.....	
Monocacy, [Shanghai. En route from Nagasaki to	30.10	764.5	58	14.4	55	12.8	100	N	.....	.....	4–6	.....	9	.....	N	.....	.....	Rough	NNW	D. clouds.....	
Monongahela, N. 24° 35′, E. 36° 03′.	30.04	763.0	81	27.2	81	27.2	96	ENE	.....	.....	1–2	.....	c	.....	.....	.....	.....	Smooth	.....	D. clouds.....	
New Hampshire, Port Royal, S.C.	30.28	769.1	.....	.....	46	7.8	54	NW	13	5.8	.....	.....	.....	.....	NW	0	0	.....	.....	D. clouds.....	
Omaha, S. 14° 56′, W. 76° 31′	30.05	763.3	73.5	23.1	72.5	22.5	76	SE	15	6.7	.....	.....	9	.....	SE	0	0	Moderate.	SSE	Misty.....	
Onward, Callao, Peru	30.01†	762.2†	72	22.2	71	21.7	85	SE	.....	.....	3	.....	10	.....	.....	.....	.....	Long	W	D. clouds.....	
Oseanee. Norfolk, Va.	29.86	758.4	66	18.9	50	10.0	79	WNW	.....	.....	3	.....	10	.....	WNW	.....	.....	.....	.....	Overcast.....	
Palos, Shanghai, China	30.33	770.4	53	11.7	56	13.3	94	N	.....	.....	4–5	.....	10	.....	.....	.....	.....	.....	.....	Overcast.....	
Plymouth. St. Thomas, W. I.	30.76	781.3	82	27.8	80	26.7	100	ENE	.....	.....	3–5	.....	5	.....	ENE	.....	.....	Smooth	.....	Squally.....	
Powhatan, Norfolk, Va.	.....	.....	.....	.....	49	9.4	100	WNW	9.6	4.3	.....	.....	9	.....	NW	0.25	6.3	.....	.....	Overcast.....	
Ranger, Shanghai, China	30.46	773.7	.....	.....	54	12.2	80	NNW	.....	.....	3–4	.....	10	.....	NW	.....	.....	.....	.....	Cloudy.....	
Rio Bravo, Brownsville, Texas	30.48	774.2	.....	.....	37	2.8	94	NW.	.....	.....	2	.....	3	.....	W	.....	.....	.....	.....	D. clouds.....	
Santee, Annapolis, Md.	29.87	758.7	65	18.3	40	4.4	64	NW	.....	.....	4	.....	4	.....	W	0.07?	1.8?	.....	.....		
Saratoga, Norfolk, Va.	.....	.....	.....	.....	47	8.3	??	W	.....	.....	3	.....	10	.....	N&W	Moderate.	Moderate.	.....	.....	Raining.....	
St. Louis, League Island, Pa	29.65	753.1	40	4.4	38	3.3	81	NW	12	5.4	.....	.....	8	.....	NW	0.8	20.	.....	.....	Cloudy.....	
Swatara, Norfolk, Va.	29.91	759.7	.....	.....	53	11.7	80	WNW	.....	.....	2	.....	9	.....	N&W	.....	.....	.....	.....	D. clouds.....	
Tennessee, Kobe, Japan	30.09	764.3	67	19.4	53	11.7	93	ENE	15	6.7	.....	.....	10	.....	N&E	0.005	0.13	Slight	N&E	Misty.....	
Trenton, Villefranche, France	29.97	761.2	.....	.....	62	16.7	56	SSW	5	2.2	.....	.....	8	.....	S&W	0	0	.....	.....	D. clouds.....	
Vandalia, Villefranche, France	29.92	760.0	58	14.4	61	16.1	66	Calm	.....	.....	0	.....	1	.....	.....	.....	.....	.....	.....	D. clouds.....	
Wabash, Boston, Mass.	29.50	749.3	58	14.4	46	7.8	92	WNW	6	2.7	.....	.....	10	.....	Calm	0.39	9.9	.....	.....	D. clouds....	
Wyoming, Washington, D. C.	30.50†	774.7†	50	10.0	40	4.4	.....	WNW	.....	.....	4	.....	5	.....	S&E	.....	.....	.....	.....	D clouds....	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. The position given for the Plymouth is that at noon, local time, instead of that at 7:35 a. m., Washington time.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Character.	Direction from—		
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama, N. 26° 18′ 29″, W. 113° 07′ 26″			29.84	757.9	71	21.7	71	NNE			4		2		NE	Mod'ate	NNE	D. clouds	Capt. Howard.
S. S. City of Peking, N. 36° 50′, W. 131° 20′			29.91*	759.7*	61	16.1	94	S			6		8		S	Rough	S	Misty	Lt. Z. L. Tanner, U.S.N.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio, Hong-Kong, China			30.03	762.7	67	19.4		E			3		10					Overcast	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

NOTE.—The originals give the wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. *Aneroid.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic	Capt. H. H. Perry.
S. S. Baltic	Capt. J. W. Jenning.
S. S. Britannic	Capt. W. H. Thompson
S. S. Celtic	Capt. B. Gleadell.
S. S. Germanic	Capt. C. W. Kennedy.
S. S. Republic	

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.

S. S. Belgic																			Capt. John Metcalf.
S. S. Gaelic, N. 30° 10′, E. 156° 00′			30.17*	766.3*	72	22.2	1?	E			5		kn		E	Heavy	W	Raining	Capt. W. H. Kidley
S. S. Oceanic																			Capt. H. Parsell.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. *Aneriod.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. O. Pohle.
S. S. Braunschweig																			Capt. K. Undütsch.
S. S. Nürnberg, N. 29° 17′, W. 48° 31′			30.34	770.6	70.5	21.4	97	NNE			5		k		N	Smooth	NW	D. clouds	Capt. A. Jaeger.
S. S. Ohio, N. 45° 58′, W. 45° 49′			30.39	771.9	36.0	2.2	70	WSW			2		s		W	Smooth		Threatening	Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, nor distinguish between upper and lower clouds.

UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Lo'wr	Upper.	Lower.	Character.	Direction From—		
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second	0—10.	0—10.	0—10.	From—	From—				
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, N. 47° 31', W. 50° 58'			30.19*	766.8*	39	3.9	??	SW			6		8		WSW	Heavy	NW	Squally	Captain Sargent.
S. S. Ohio. Philadelphia, Pa			29.81	757.2	48	8.9	92	W			1		8		W			Clear?	Captain Morrison.
S. S. Pennsylvania, Liverpool			29.16†	740.7†	54	12.2	??	SW			5		10					Cloudy	Captain Harris.

Note.—The originals give the barometer as read off; wind-force by the scale 0 to 12. *Aneroid. † Corrected for temperature and elevation, instrumental error not known.

RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

S. S. Nederland																			Capt. Randle.
S. S. Switzerland																			Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

S. S. Hibernian																			
S. S. Scandinavian, N. 49° 6', W. 48° 10'			30.17	766.3	32	0.0		SW			5		9		SW	High	SE	Snowing	Capt. W. Richardson.

Note.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller. Kennebunk, Maine			29.42	747.3	54	12.2	80	W	3	1.3			10ks		W			Cloudy	Capt. James Jorgensen.

Note.—The originals for the schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4.

Collated at the Office of the Chief Signal Officer of the Army, Washington, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^{d}.) Chief Signal Officer, U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON DECEMBER 7, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.

1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:18 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.

1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours	.....	.....	30.22	767.5	65.8	18.8	77	E	.....	.....	1	.....	1	.....	.....	0	0	Very fair.....	Michel.
Algiers	.....	.....	30.17	766.2	64.8	18.2	76	NNW	.....	.....	1	.....	1	.....	.....	0	0	Very fair.....	Peter.
La Calle	.....	.....	30.17	766.4	59.9	15.5	73	WSW	.....	.....	2	.....	4	.....	.....	0.354	9.0	Cloudy	Fleury.
Tunis	.....	.....	30.15	765.7	61.2	16.2	66	NW	.....	.....	4	.....	6	.....	.....	0.087	2.2	Cloudy.....	Jacques.
Sfax	.....	.....	30.17	766.2	62.6	17.0	.....	SSE	.....	.....	3	.....	2	.....	.....	0	0	Fair	Husson.
Saida	.....	.....	30.28	769.1	60.8	16.0	68	SSW	.....	.....	1	.....	1	.....	.....	0	0	Very fair.....	Millot.
Tebessa	.....	.....	30.17	766.3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Bassières.
Geriville	.....	.....	30.28	769.0	48.6	9.2	84	NNW	.....	.....	3	.....	3	.....	.....	0	0	Pretty fair..	Lemaillot.
Laghouat	.....	.....	30.22	767.6	61.7	16.5	56	NW	.....	.....	2	.....	2	.....	.....	0	0	Fair	Guyot.
Biskra	.....	.....	30.21	767.4	70.2	21.2	26	NW	.....	.....	2	.....	7	.....	.....	0	0	Very cloudy	Kuntz.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890 ? meters, or 2,919.9 ? feet; Tebessa, 1,088 ? m., or 3,569.4 ? ft.; Geriville, 1,360 ? m.; or 4,461.7 ? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

Agram	29.57	751.0	30.13	765.3	46.6	8.1	85	Calm	.....	.....	0	.....	10	.....	.....	0	0	.....	Prof. Ivan Stozir
Cracow, I. R. Observatory	29.34	745.3	30.14	765.6	35.8	2.1	98	NE	.....	.....	1	.....	10	.....	.....	0.012	0.3	.....	Dr. Wierzbiski.
Eperies	29.17	740.9	30.08	764.0	39.9	4.4	90	Calm	.....	.....	0	.....	9c	.....	.....	0	0	.....	Julius Mikolik.
Gratz	28.87	733.3	30.17	766.3	39.7	4.3	95	S	.....	.....	2	.....	10	.....	.....	0.157	4.0	.....	Andreas Rospini.
Hermannstadt	28.63	727.3	30.07	763.8	47.5	8.6	67	SE	.....	.....	1	.....	5	.....	.....	0	0	.....	Prof. Reissenberger.
Kremsmünster	28.78	730.9	30.17	766.3	37.0	2.8	93	Calm	.....	.....	0	.....	10	.....	.....	0	0	.....	Prof. C. Wagner.
Lemberg	29.12	739.7	30.17	766.2	29.8	—1.2	92	SE	.....	.....	2	.....	10	.....	.....	0	0	.....	Dr. T. Stanecki.
Pola	29.93	760.3	30.05	763.2	53.6	12.0	73	WNW	.....	.....	2	.....	10cs	.....	.....	0	0	.....	I.R.Hydrographic Office
Szathmar	29.66	753.3	30.13	765.3	50.0	10.0	56	SW	.....	.....	3	.....	8	.....	.....	0	0	.....	Johann Tamas, S. J.
Szegedin	29.84	757.8	30.12	765.1	44.6	7.0	94	S	.....	.....	1	.....	10	.....	.....	0.118	3.00	.....	Karl Stancel.
Trieste	30.02	762.6	30.13	765.2	52.7	11.5	70	W	.....	.....	1	.....	3	.....	.....	0	0	Clear.....	P. Busin.
Vienna	29.40	746.7	30.11	764.8	44.1	6.7	88	Calm	.....	.....	0	.....	0	.....	.....	0	0	.....	I. R. Central Met. Obs'y
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

Arlon	28.60	726.5	30.15	765.7	43.7	6.5	89	W	.....	.....	1	.....	8	.....	.....	0.122	3.1	Solar halo....	Prof. M. Passau.
Brussels	29.84	758.0	30.05	763.2	45.9	7.7	84	SW	.....	.....	3	5	.....	W	.....	0.154	3.90	.....	Royal Observatory.
Furnes	29.97	761.2	29.99	761.8	47.8	8.8	99	SSW	.....	.....	2	.....	10	.....	.....	0.161	4.1	Light fog.....	M. E. de Cae.
Maeseyck	29.92	759.9	30.05	763.2	48.0	8.9	88	WSW	.....	.....	4	.....	2	.....	.....	0.154	3.9	.....	M. Pierrot.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:0, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	29.51	749.5	29.61	752.1	39.2	4.0	.....	SW	9	4.0	.....	.....	4	.....	.....	0.020	0.51	Blue sky.....	W. Boswell.
Ardrossan	29.65	753.1	29.67	753.6	42	5.6	.....	W	.....	.....	3	.....	8	.....	.....	.....	.....	Overcast.....	William McNeil.
Armagh, Observatory	.....	.....	29.77	756.1	38.8	3.8	.....	SW	15	6.7	.....	.....	6	.....	.....	.....	.....	D. clouds....	S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)	.....	.....	29.82	757.4	44.3	6.8	.....	WSW	25	11.2	.....	.....	1	.....	.....	.....	.....	Blue sky.....	John Hartnup.
Birr Castle, (Parsonstown)	.....	.....	29.87	758.7	38.1	3.4	.....	SW	.....	.....	2	.....	8	.....	.....	.....	.....	Showery.....	J. Dreyer.
Bradford, Yorkshire	29.39	746.5	29.79	756.7	41.0	5.0	.....	SE	.....	.....	3	.....	3	.....	.....	0.50	12.7	D clouds....	J. McLandsborough.
Bridgetown, (Barbados)	29.90	759.4	29.93	760.2	81.0	27.2	.....	N	.....	.....	1	.....	3	.....	.....	.....	.....	D. clouds....	Pvt. G. W. Roberts, A.
Cambridge, Observatory	.....	.....	29.91	759.7	44.5	6.9	.....	SSE	.....	.....	1	.....	10	.....	.....	.....	.....	Raining.....	H. Todd. [H. C.
Cardington	.....	.....	29.92	760.0	46.0	7.8	.....	SW	.....	.....	1	.....	10	.....	.....	.....	.....	Overcast....	John McLaren.
Chatham, School M. E.	29.82	757.4	29.95	760.7	48.2	9.0	.....	SW	.....	.....	3	.....	7	.....	.....	.....	.....	Blue sky.....	Lt. W. G. Morris, R. E.
Dartmoor	28.46	722.9	29.96	761.0	43.0	6.1	.....	W	.....	.....	1	.....	6	.....	.....	.....	.....	Gloomy.....	Alexander Watt.
Davos Platz (Switzerland)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Francis Redford, M. A.
Donaghadee	29.71	754.6	29.74	755.4	39	3.9	.....	WSW	.....	.....	3	.....	5	.....	.....	.....	.....	D. clouds....	J. Mac Gowan.
Dover	29.94	760.5	29.97	761.2	49	9.4	.....	W	.....	.....	3	.....	5	.....	.....	.....	.....	½ clouded...	J. Costello.
Eccles, (near Manchester)	.....	.....	29.81	757.2	44.3	6.8	.....	SW	1.0	0.4	.....	.....	7	.....	.....	.....	.....	D. clouds....	Thomas Mackereth.
Falmouth, Observatory	29.72	754.9	29.95	760.7	49.0	9.4	.....	WSW	.....	.....	1	.....	9	.....	.....	.....	.....	Overcast.....	The Staff.
Fort Napier, (Natal)	27.58	700.5	29.79	756.7	75.2	24.0	.....	E	.....	.....	2	.....	10	.....	.....	.....	.....	Overcast.....	Pvt. G. Salmon, A. H. C.
Free Town, (Sierra Leone)	.....	.....	29.85	758.2	87	30.6	.....	NW	.....	.....	0	.....	3	.....	.....	.....	.....	D. clouds....	
Galway, Queen's College	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	30.06	763.5	30.12	765.0	63.5	17.5	.....	E	.....	.....	1	.....	0	.....	.....	.....	.....	Blue sky.....	Corpl. C. Aitken, A.H.C.
Glasgow, Observatory	29.47	748.5	29.67	753.6	37.0	2.8	.....	WNW	.....	.....	2	.....	7	.....	.....	.....	.....	Hailing.....	D. G. Maclean.
Great Yarmouth	29.91	759.7	29.92	760.0	43	6.1	.....	SW	.....	.....	3	.....	5	.....	.....	.....	.....	Misty	G. T. Watson.
Greenwich, Royal Obs'y	29.78	756.4	29.96	761.0	48.3	9.1	.....	SW	.....	.....	1	.....	10	.....	.....	.....	.....	Overcast.....	The Staff, for G. B. Airy.
Guernsey	29.78	756.4	30.04	763.0	51	10.6	.....	SSW	.....	.....	1	.....	8	.....	.....	.....	.....	D. clouds....	Dr. S. E. Hoskins, F.R.S.
Helston	.....	.....	29.92	760.0	50	10.0	.....	SW	.....	.....	2	.....	10k	.....	.....	0.3	8.	Gloomy.....	M. P. Moyle.
Holyhead	29.78	756.4	29.83	757.7	45	7.2	.....	WSW	.....	.....	4	.....	3	.....	.....	.....	.....	D. clouds....	John Tilston.
Jersey	29.73	755.1	30.03	762.7	49.8	9.9	.....	SW	.....	.....	2	.....	10	.....	.....	Blank	Blank	Overcast.....	J. Fisher.
Kew, Observatory	.....	.....	29.96	761.0	47.0	8.3	.....	SW	9	4.0	.....	.....	10	.....	.....	.....	.....	Threatening	The Staff.
Kingstown	29.81	757.2	29.84	757.9	43	6.1	.....	W	.....	.....	4	.....	5	.....	.....	Blank	Blank	D. clouds....	George Mitchell.
Leicester, Museum	.....	.....	29.88	758.9	44.0	6.7	.....	SW	.....	.....	1	.....	10	.....	.....	.....	.....	Overcast.....	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.91	759.7	29.99	761.7	60.0	15.6	.....	N	.....	.....	2	.....	2	.....	.....	.....	.....	D. clouds....	Sgt. Fred. Travis, A. H.
Nairn	29.45	748.0	29.54	750.3	36	2.2	.....	SW	.....	.....	2	.....	2	.....	.....	.....	.....	¾ clouded...	W. D. Penny. [C.
Nassau, (Bahamas)	.....	.....	30.22	767.6	68.0	20.0	.....	NE	.....	.....	7	.....	10	.....	.....	Blank	Blank	Overcast.....	C. S. Duncombe.
Nottingham, Observatory	29.67	753.6	29.86	758.4	43.7	6.5	.....	SW	.....	.....	2	.....	10k	.....	SW	0.007	0.18	Overcast.....	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.34	745.2	29.87	758.7	42.5	5.8	.....	SSW	.....	.....	3	.....	10	.....	.....	.....	.....	Foggy	Rev. Stephen Whitty.
Oxford, Radcliffe Obs'y	.....	.....	29.92	760.0	47	8.3	.....	WSW	.....	.....	1	.....	10	.....	.....	.....	.....	Overcast.....	Mr. Lucas.
Plymouth	29.86	758.4	29.94	760.5	46.5	8.1	.....	Calm	.....	.....	0	.....	10	.....	.....	.....	.....	Overcast.....	John Merrifield.
Roche's Point	29.86	758.4	29.90	759.4	44	6.7	.....	NW	.....	.....	3	.....	5	.....	.....	.....	.....	½ clouded...	W. Kennedy.
Saint Ann's Head	29.72	754.9	29.89	759.2	49	9.4	.....	W	.....	.....	3	.....	10	.....	.....	.....	.....	Showery.....	John C. Walker.
Sandwick Manse, (Orkneys.)	.....	.....	29.44	747.8	39.8	4.3	.....	WSW	23	10.3	.....	.....	3	.....	.....	.....	.....	D. clouds....	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey)	.....	.....	30.00	762.0	53.2	11.8	.....	N	.....	.....	1	.....	10	.....	.....	.....	.....	Raining.....	Sergt. W. H. Lyne.
Sheffield	29.56	750.8	29.85	758.2	44.2	6.8	.....	SW	.....	.....	2	.....	3	.....	.....	0	0	Blue sky.....	W. F. Cooper.
Silloth Rectory	29.70	754.4	29.73	755.1	42.7	5.9	77	W	.....	.....	3	.....	6	.....	.....	0.010	0.25	D. clouds....	Rev. F. Redford, M. A.
Stonyhurst, Observatory	.....	.....	.....	.....	41.9	5.5	.....	SW	.....	.....	2	.....	7	.....	.....	.....	.....	Misty.	Rev. S. J. Perry.
Stornoway, Lews C., (Hebr.)	.....	.....	29.44	747.8	40	4.4	.....	WSW	.....	.....	2	.....	10	.....	.....	.....	.....	Overcast.....	John Smith.
Stratfield Turgiss	29.73	755.1	29.95	760.7	47.2	8.4	.....	SW	.....	.....	1	.....	7	.....	.....	.....	.....	D. clouds....	Rev. C. H. Griffith, F.M.S.
Thurso	.....	.....	29.46	748.3	40	4.4	.....	SW	.....	.....	2	.....	5	.....	.....	.....	.....	D. clouds....	John Trotter.
Truro, Royal Institution	.....	.....	29.95	760.7	49	9.4	.....	W	.....	.....	0	.....	10	.....	.....	.....	.....	Raining.....	W. Newcombe.
Valencia, Observatory	.....	.....	29.91	759.7	45.0	7.2	.....	W	21	9.4	.....	.....	5	.....	.....	.....	.....	D. clouds....	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Henry Mercer.
Cape Good Hope, Obs'y	29.82	757.4	29.86	758.4	74.7	23.7	50	S	24	10.7	.....	2	3	.....	.....	.....	.....	.....	The Staff, for E. J. Stone.
Hobart Town, (Tasmania)	.....	.....	29.86	758.4	62.5	16.9	67	N	.....	.....	3	.....	8k	.....	.....	0	0	Cloudy.....	Francis Abbott, F.R.A.S.
Leith, Restalrig Park	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Andrew Gibb.
Mauritius, Observatory	29.84	757.9	30.03	762.7	80.1	26.7	64	E	17.0	7.6	.....	9	3	WSW	E	0.12	3.1	Squally.....	C. Meldrum.
Melbourne, Observatory	29.85	758.2	29.94	760.5	60.9	16.1	81	S	4	1.8	.....	.....	4	.....	.....	0	0	Fine	R. L. J. Ellery.
Monach L't-house, (Hebrides)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Youngclause.
North Unst, (Shetland Is.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Robert Burnet.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m.

Marine Series. Vessels.	Sea or swell. Height scale 0—9	Sea or swell. Direction from—	Weather	Observer.
S. S. Algeria, N. 46° 45', W. 42° 35'	25*	SW	Raining.....	Capt. W. Watson.
S. S. Batavia	.....	.....	.....	Capt. J. E. Mouland.
Ship Camperdown	.....	.....	.....	Capt. A. T. Miller.
Brig Catherine	.....	.....	.....	Capt. Adam Smith.
Barque Celeste	.....	.....	.....	Capt. D. F. McKechnie.
S. S. Hibernia	.....	.....	.....	Capt. W. R. Cato
Barque Maroon	.....	.....	.....	Capt. A. T. Brown.
Ship Mikado	.....	.....	.....	Capt. C. C. Prehn.
S. S. Seine	.....	.....	.....	Capt. H. Manning.
Barque Sorata	.....	.....	.....	Capt. Jas. J. Price.
Schooner Traveller	.....	.....	.....	Capt. Alex Simpson
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. *Feet

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
San José	26.22	666.0			70.7	21.5	86	SE			6	4cs	5sd		NE	0	0		Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.71	754.5	29.75	755.7	42.4	5.8	97	S			2		10						
Farõe	29.61	752.1	29.63	752.6	45.1	7.3	88	WSW			4		8						Foggy
Godthaab, (Greenland)	28.36	720.4	28.41	721.5	15.8	— 9.0	78	NNE			4		10						
Stykkisholm, (Iceland)	28.93	734.9	28.98	736.0	18.1	— 7.7	100	NE			8		10						
Thorshavn, (Farõe)	29.15	740.5	29.19	741.4	38.5	3.6	69	SW			4		2						Snowing
Vestervig	29.38	746.3	29.55	750.6	42.6	5.9	97	SW			6		8						
																			Raining

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

Alençon, Normal School	29.55	750.6	30.10	764.6	46.4	8	95	SW			1		10			0	0	Covered	Collignon, Director.
Amiens, Normal School	29.92	760.0	30.04	762.9	48.2	9	86	WSW			2		0			0.079	2.0	Clear	Bonvarne, Director.
Avignon, Normal School	30.05	763.2	30.13	765.2	52.2	11.2	78	N			1		0			0.08	2.	Very clear	Mr. Giraud, Director.
Bar-sur-Seine	29.54	750.4	30.11	764.9	50.5	10.3	75	SSW			1		8kn		S	0.165	4.2	Very cloudy	C. Saillard.
Beaumette Obs'y (Angers)	29.83	757.6	29.99	761.7	48.6	9.2	97	SSE	1.8	0.8					S	0.551	14.0		Albert Cheux.
Beauvais	29.80	756.8	30.09	764.2	46.6	8.1	83	SW			1		10			0.069	1.75	Covered	Normal School.
Besançon	29.25	743.0	30.17	766.2	48.6	9.2	80	SSW			2		8		SW	0.24	6.	Very cloudy	Normal School.
Bourg-en-Bresse	29.27	743.5	30.23	767.8	48.6	9.2	95	S			2		5n		NW	0.087	2.2	Cloudy	Normal School.
Bourges, Normal School	29.52	749.9	30.08	764.1	48.7	9.2	95	SW			2		10		SW	0.327	8.3	Covered	A. Wagner, Director.
Brest, Naval Observatory	29.68	753.8	29.90	759.4	48.4	9.1	89	SSE			1		10		S	0.020	0.50	Raining	The Staff.
Carcassonne, Normal School	29.69	754.0	30.10	764.6	58.6	14.8	84	W			2		2		NW	0.890	22.6	Slightly cl'dy	Vateau, Director.
Caen	29.98	761.4	30.05	763.3	48.6	9.2	81	SSW			2		10		NNW	0.031	0.8	Covered	Normal School.
Chartres, Normal School	29.45	748.0	30.02	762.6	50.0	10		W			1		10			0.386	9.8	Covered	Lequin, Director.
Châlons-sur-Marne, N. Sch'l	29.79	756.6	30.11	764.8	49.6	9.8	95	Calm			0		2ck			0.197	5.0	Slightly cl'dy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.72	729.5	30.08	764.1	52.7	11.5	71	SE			1		10			0.118	3.0	Covered	Alluard, Director.
Commercy, Normal School	29.22	742.1	30.11	764.8	45.3	7.4	83	W			2		5		W	0.20	5.	Cloudy	Dr. Goulet, Director.
Commune de Gréasque*	29.01	736.9	30.15	765.9	54.1	12.3	61	NE			2		1		NE	0	0	Clear	M. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	29.84	758.0	30.06	763.4	49.3	9.6	97	SE			2		10			0	0	Covered	Mouillot, Director.
Le Mans, Normal School	29.74	755.5	30.06	763.5	49.6	9.8	81	W			2		10		W	0	0	Covered	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.24	742.8	30.18	766.6	48.2	9	86	NW			1		10			0.177	4.50	Covered	Voudez, Director.
Lorient, Naval Observatory	29.89	759.1	29.99	761.7	49.6	9.8	79	SE			3		10			0.543	13.8	Covered	T. Carré, Director.
Mâcon, Normal School	29.43	747.4	30.13	765.3	47.7	8.7	94	Calm			0		10			0.24	6.	Covered	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	29.02	737.0	30.11	764.7	46.4	8	86	S			2		5		N	0	0	Cloudy	Normal School.
Nismes, Normal School	29.75	755.6	29.95	760.8	58.6	14.8	68	NW			2		5		N	0	0	Cloudy	Boyer, Director.
Orleans, Normal School	29.84	757.9	30.22	767.6	50.0	10	83	SE			2		8		SE	0.16	4.	Very cloudy	Bernard, Director.
Paris, Observatory	29.85	758.1	30.09	764.2	48.0	8.9	80	W			1		10ck		W	0.126	3.20	Covered	National Observatory.
Privas	29.03	737.3	30.12	765.0	47.3	8.5	85	S			1		1		S	0.035	0.9	Clear	Normal School
Rochefort, Naval Obs'y	30.00	761.9	30.03	762.7	54.0	12.2	93	SE			1		10		NW	0.08	2.	Covered	Lt. Decante, Director.
Rouen, Normal School	29.98	761.6	30.07	763.8	47.8	8.8	75	WSW			2		10		S	0.114	2.9	Covered	F. Lucard, Director.
Tarbes, Normal School	28.92	734.6	30.03	762.7	48.2	9	86	W			3		2		E	0	0	Slightly cl'dy	T. Hugues, Director.
Villefranche	29.40	746.8	30.13	765.3	49.1	9.5	95	NW			1		8		N	0.177	4.5	Very cloudy	Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.81	757.2	29.84	757.9	78.6	24.2													
Marseilles, Observatory			30.11	764.9	56.1	13.4	66	SW			1-2		4			0.59	15.		L'Abbé Marchési.
Mont-Louis	24.95	633.6	30.26	768.6	46.8	8.2	69	WSW	11.2	5.00			2		W	0	0		The Staff.
Nice			30.11	764.9	55.4	13.0	79	Calm			0		6			0.224	5.7		Mr. Falguère.
Paris, Montsouris Obs'y	29.80	756.9	30.08	763 9	48.6	9.2	81	Calm			0		10			Inap.	Inap.	Rainy	Dr. A. Niepce.
Perpignan			30.11	764.7	59.0	15.0	77	S	5.6	2.50			3		NW	0.031	0.8		Marié Davy, Director.
Pic du Midi, (Summit,) H. P.	21.22	539.0			37.0	2.8		SW			2		5			0	0		Dr. Fines.
Pic du Midi, (Plantade,) H. P.	22.67	573.2			41.5	5.3		SW			3		5					Fair	M. Baylac.
Saint Maur, (near Paris)	29.92	759.9	30.08	764.1	49.6	9.8	86	S			1		10		WSW	0.453	11.5	Fair	Gen'l de Nansouty.
Toulouse, Observatory	29.39	746.6	30.12	765.0	54.9	12.7	89	SE			2		7			0.331	8.4		E. Renou.
Tours	29.89	758.5	30.06	763.5	48.6	9.2	92	S			1		10			0.065	1.65		The Staff.
Versailles, (near Paris)			30.08	763.9	49.6	9.8	76	SW			1		10		WSW	0.122	3.1		C. Marquet.
Zi-Ka-Wei, (near Shanghai)	30.26	768.6	30.28	769 2	41.4	5.2	84	NE	1.6	0.7			1k			0.051	1.29	Covered	Dr. A. Bérigny.
																0	0	Clear	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; for Montsouris, the barometer reduced to freezing but not to sea-level. At Mirecourt and Rochefort the cloud directions are apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,369 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time.

*Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg																			
Berlin	29.81	757.2	29.98	761.5	45.7	7.6	81	W			1		10			0.095	2.42		Prof. Dr. Hoh.
Breslau	29.52	749.7	30.05	763.2	46.9	8.3	71	SW			3		2			0	0		Prof. Arndt.
Carlsruhe	29.69	754.2	30.12	765.1	51.4	10.8	76	SW			2		9			0.126	3.2		Royal University Obs'y.
Cassel	29.45	748.1	30.07	763.6	47.3	8.5	63	W			3		8	SW		0	0		Albert Senz.
Crefeld	29.85	758.2	30.01	762.3	49.6	9.8	65	W			5		7ck			0.04	1.		Dr. H. Möhl.
Emden	29.92	760.0	29.96	760.9	45.5	7.5	82	SW			7		4			0.236	6.0		Director Lose.
Frankfort on the Main	29.79	756.6	30.16	766.1	48.8	9.2		WSW			2		2			0.035	0.9		Prof. Prestel.
Friedrichshafen	28.73	729.8	30.20	767.1	46.0	7.8	85	SE			1		10	WSW		0.890	22.6		Physical Society.
Hamburg	29.81	757.2	29.88	759.0	45.7	7.6	86	WSW			4		2k	WSW		0.083	2.1	Clear	M. Wilhelm.
Kiel	29.79	756.7	29.81	757.1	45.1	7.3	82	WSW			4		10			0.034	0.88		Captain F. Hegemann.
Königsberg, (Prussia)	29.99	761.7	30.07	763.8	34.7	1.5	91	S								0	0	Covered	Prof. G. Karsten.
Köslin			29.89	759.2	41.2	5.1		SE			2		4			0	0		Prof. E. Luther.
Leipsic, Observatory	29.64	752.9	30.07	763.8	45.5	7.5	83	SW			4		3	W		0.016	0.4		H. Müller.
Memel, Naval School	30.05	763.3	30.10	764.5	33.4	0.8	92	SSE			4		10ks						Prof. Bruhns.
Neufahrwasser	30.00	762.1	30.02	762.5	37.8	3.2	93	S			5		10			0	0	Dust-haze	Reinbrech von Skalweit.
Posen	29.72	754.9	30.02	762.5	44.8	7.1	86	SW			3–4		2			0.008	0.21	Clear	A. Lothes.
Strassburg Obs., (in Alsace	29.60	751.9	30.16	766.1	49.8	9.9	74	NE			1		5	W		0.074	1.87		Dr. Magener.
Stuttgart	29.15	740.4	30.10	764.6	49.1	9.6	71	W			1		6	W		0.280	7.1		Dr. Schur.
Treves, (Trier)	29.48	748.8	30.00	762.1	46.9	8.3	76	SW			4		2			0.110	2.80	Dense fog	Prof. Schoder.
Weissenburg, (Bavaria)	28.60	726.4	30.14	765.6	43.3	6.3	93	WSW	4	2			7kn	W	W	0.067	1.7		Prof. Flesch.
Wustrow, Naval School	29.84	757.9	29.89	759.2	43.9	6.6	89	SSW			5		10			0.054	1.37	Covered	Dr. Von Bebber.
German Naval Series.																			E. F. Schütz.

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4. Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines, Königsberg, Posen and Wustrow in cubic zolls. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.61	752.2	30.01	762.2	58.8	14.9		NE			3							½ Clear	Dr. J. F. J. Schmidt.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and wind-force; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.94	760.5	29.99	761.8	78.0	25.6	57	W	12.0?	5.4?			2			0	0	D. clouds	
Deesa	29.47	748.6	29.96	760.9	77.8	25.4	44	N					5	SSW		0	0	D. clouds	
Bombay	29.87	758.8	29.91	759.8	81.0	27.2	75	N	6.0	2.7			10		SSW	0	0	Overcast	
Poona	27.89	708.4	29.90	759.3	78.0	25.6	55	SE					10	SW	SE	0	0	D. clouds	
Lahore	29.27	743.4	30.04	763.1	60.6	15.9	66	Calm	0.9	0.4			3			0	0	Cloudy	
Belgaum	27.38	695.4	29.92	759.8	77.7	25.4	56	SE	11.0	4.9			8	W	SE	0	0	D. clouds	
Bangalore																			
Roorkee	29.09	738.9	30.03	762.7	62.8	17.1	54	Calm	0.9	0.4			7			0	0		
Agra	29.45	748.1	30.04	763.0	64.8	18.2	60	W								0	0		
Trichinopoly																			
Nagpur	28.95	735.3	30.00	762.1	76.6	24.8	66	N	3.5	1.6			10		NE	0	0	Thunder	
Madras																			
Lucknow	29.67	753.5	30.06	763.5	60.4	15.8	79	Calm	0.1	0.04			10			0	0	Overcast	
Allahabad	29.74	755.4	30.06	763.6	64.2	17.9	72	Calm					10			0	0	Overcast	
Patna	29.84	757.8	30.02	762.6	68.0	20.0	60	W	1.2	0.5			10	W	W	0	0	Overcast	
Hazaribagh	27.97	710.4	30.04	763.0	65.8	18.8	46	NW	4.2	1.9			8			0	0		
Cuttack	29.94	760.5	30.02	762.6	75.5	24.2	56	Calm	1.0	0.4			4			0	0	D. clouds	
Calcutta (Alipore)	30.00	762.1	30.02	762.6	69.8	21.0	59	NW	3.0	1.3			0			0	0	Blue sky	
Goalpara	29.57	751.1	29.97	761.2	68.7	20.4	70	ESE	1.5	0.7			4	W		0	0	D. clouds	
Chittagong	29.91	759.6	30.00	762.0	71.0	21.7	75	NW	3.2	1.4			0			0	0	Blue sky	
Sibsagar	29.67	753.5	30.02	762.5	61.2	16.2	92	ENE	1.3	0.6			10	W		0	0	D. clouds	
Rangoon																			
Jubbulpore	28.66	727.9	30.06	763.6	68.0	20.0	61	NE	1.7	0.8			10	NE	NE	0	0	Overcast	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	22.22	564.4	30.20	767.1	27.0	— 2.8	85	SSE	.....	.....	1	.....	0	.....	.....	0	0	.....	Ab. Dom. Mongini.
Stelvio	22.19	563.5	30.12	765.1	27.7	— 2.4	.....	NNE	.....	.....	1	.....	7	.....	.....	0	0	.....	Signora Ernesta Manfredi.
Udine	29.67	753.5	30.08	764.1	53.2	11.8	48	Calm	0	0	.....	.....	7	.....	.....	0	0	.....	Prof. Giovanni Clodig.
Padua	29.99	761.8	30.10	764.6	49.5	9.7	70	S	0.7	0.3	.....	.....	7	WSW	.....	0	0	.....	Prof. Dott. Lorenzoni.
Vicenza	29.91	759.6	30.10	764.6	49.6	9.8	72	SE	0	0	.....	.....	2	.....	.....	0	0	.....	Conte Alm. Da Schio.
Verona	29.86	758.4	30.09	764.2	51.1	10.6	91	NE	0	0	.....	.....	10	.....	.....	0	0	.....	Dott. B. Bertoncelli.
Bergamo	28.78	731.0	30.13	765.8	48.9	9.4	66	SW	.....	.....	2	.....	0	.....	.....	0	0	.....	Prof. Trionfini Carlo.
Domodossola	29.09	738.8	30.14	765.6	48.6	9.2	80	.....	.....	.....	.....	.....	0	.....	.....	0	0	.....	Prof. Giuseppe Calza.
Milan	29.61	752.0	30.14	765.5	47.1	8.4	.....	W	.....	.....	2	.....	3	WNW	.....	0.031	0.8	.....	Ab. Gio. Capelli.
Pavia	29.77	756.3	30.13	765.3	47.7	8.7	74	S	.....	.....	2	.....	0	.....	.....	0	0	.....	Prof. Gio. Cantoni.
Moncalieri	29.22	742.2	30.15	765.8	46.9	8.3	69	NNE	1.3	0.6	.....	.....	0	.....	.....	0	0	.....	Prof. P. F. Denza.
Mondovi	28.18	715.8	30.14	765.5	46.9	8.3	55	ESE	.....	.....	2	.....	0	.....	.....	0	0	.....	Prof. D. C. Bruno.
Porto Maurizio	29.93	760.1	30.15	765.8	56.3	13.5	70?	SW	.....	.....	2	.....	2	.....	.....	0	0	.....	Prof. L. Vassallo.
Genoa	29.95	760.6	30.12	765.0	58.1	14.5	42	Calm	0	0	.....	.....	0	.....	.....	0	0	.....	Prof. G. M. Garibaldi.
Piacenza	29.88	759.0	30.15	765.7	47.3	8.5	81	NW	4.3	1.9	.....	.....	0	.....	.....	0	0	.....	Dott. G. Manzi.
Parma	29.82	757.5	30.15	765.8	52.0	11.1	72	SW	.....	.....	2	.....	1	.....	.....	0	0	.....	Prof. P. Pigorini.
Florence	29.89	759.2	30.15	765.8	52.7	11.5	70	S	.....	.....	2	.....	1	.....	.....	0	0	.....	Cav. F. Meucci.
Leghorn	30.01	762.2	30.10	764.4	52.0	11.6	82	NE	1.3	0.6	.....	.....	4	.....	.....	0	0	.....	Prof. P. Monte.
Siena	28.89	733.7	30.11	764.8	50.7	10.4	70	NW	0	0	.....	.....	7	NE	.....	0	0	.....	Prof. L. Toscani.
Urbino	28.55	725.1	30.13	765.2	46.9	8.3	82	SW	.....	.....	2	.....	10	.....	.....	0.256	6.5	.....	Prof. P. Serpieri.
Pesaro	30.08	764.0	30.13	765.3	50.5	10.3	84	NW	19.2	8.6	.....	.....	8	.....	.....	0.138	3.5	.....	Prof. Luigi Guidi.
Ancona	30.03	762.8	30.14	765.6	52.0	11.1	84	WNW	.....	.....	4	.....	5	NW	.....	0	0	.....	Prof. F. DeBosis.
Grosseto	29.99	761.7	30.10	764.6	56.8	13.8	67	NE	.....	.....	2	.....	6	SE	.....	0	0	.....	Avv. P. Ponticelli.
Rome	29.91	759.7	30.09	764.2	56.7	13.7	73	N	0	0	.....	.....	8	.....	.....	0	0	.....	Prof. P. A. Secchi.
Naples, O. U.	29.87	758.8	30.08	763.9	59.7	15.4	59	NNE	.....	.....	2	.....	2	ENE	.....	0	0	.....	Prof. L. Palmieri.
Lecce	29.83	757.7	30.08	764.1	64.3	12.4	84	NNW	4.9	2.2	.....	.....	8	N	.....	0.118	3.0	.....	Prof. C. De Giorgi.
Cosenza	29.18	741.1	30.08	763.9	53.6	12.0	69	SW	0	0	.....	.....	2	.....	.....	0	0	.....	Prof. F. D. Conti.
Cagliari	29.90	759.4	30.09	764.3	58.5	14.7	62	NW	.....	.....	2	.....	6	N	.....	0	0	.....	Prof. A. Pacinotti.
Riposto, (Sicily)	.....	.....	.....	.....	65.8	18.2	71	NE	.....	.....	2	.....	3	S	.....	0	0	.....	Prof. F. Caffero.
Palermo	29.74	755.3	29.99	761.8	58.1	13.4	75	NE	4.3	1.9	.....	.....	8	.....	.....	0.260	6.6	.....	Prof. G. Cacciatore.
Caltanissetta	27.98	710.6	29.94	760.4	53.4	11.9	66	NNE	.....	.....	2	.....	5	W	.....	0	0	.....	Prof. A. Pagani.
Syracuse	29.89	759.3	29.97	761.2	57.9	14.4	67	NE	.....	.....	4	.....	7	NW	.....	0	0	.....	Prof. V. Giuliano.
SUB-SERIES.																			
Naples, S. R.	29.53	750.1	30.09	764.2	57.2	14.0	63	NW	2.5	1.1	.....	.....	3	.....	.....	0	0	.....	Prof. F. Brioschi.

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,548.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Siena, 348.5 m., or 1,143.3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Tokei (Yeddo)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	The Observatory.
Tokei (Yeddo) University	29.98	761.5	30.08	764.1	52	11.1	79	NNE	10	4.5	.....	10	.....	.....	.....	0.18	4.6	Misty.	Prof. P. V. Veeder.

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the coöperation of Senor Mariano Bârcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Aguascalientes	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	I. N. Marin, M. D.
Córdoba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	C. Peña, M. D.
Cuernavaca	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	L. Castillo, A. E.
Guadalajara	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. L. Perez.
Guanajuato	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. V. Fernandez.
Leon	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. M. Leal.
Mexico	23.26	590.6	30.41	772.4	42.8	6.0	90	Calm	0	0	.....	0	Haze	.....	.....	0.29	7.4	Hazy.	Central Observatory.
Orizaba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	N. N.
Orizaba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	I. Orozco, M. D.
Pabellon, (Aguascalts)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. V. de Leon, M. E.
Puebla	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. B. Gonzalez.
Toluca	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. C. Velazquez.
Tlacotalpam	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. F. R. Bayly.
San Luis Potosi	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	G. Barroeta, M. D.
Vera-Cruz	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. J. Rossell.
Zacatecas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. A. Bonilla, M. E.
Puebla, (Catholic Institute)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	P. Spina. [M. M. D. D.
Morelia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Tena, F. L. Páramo.

NOTE.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,290 m., or 7,512.9 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabell m, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosí, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	30.02	762.5	30.02	762.5	47.8	8.8	.....	SW	.....	.....	4	.....	.....	.....	.....	0.181	4.6	.....	
Groningen	29.82	757.5	29.88	758.9	45.0	7.2	.....	W	.....	.....	5	.....	.....	.....	.....	0.059	1.5	.....	
Helder	29.89	759.3	29.89	759.3	46.4	8.0	.....	WSW	.....	.....	5	.....	.....	.....	.....	0.496	12.6	.....	
Hellevoetsluis	.....	.....	29.98	761.6	46.4	8.0	81	SW	.....	.....	4	.....	.....	.....	.....	.....	.....	.....	
Utrecht	29.94	760.5	29.99	761.7	46.8	8.2	82	SSW	.....	.....	4	.....	2	.....	.....	0.028	0.7	Light cloudy	H. v d Brink.

NOTE.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	29.35	745.4	29.40	746.8	43.2	6.2	85	SSE	26	11.5			9			0.630	16.0		
Brönö	29.56	750.9	29.60	751.9	43.2	6.2	53	SSE	31	14			2			0	0		
Christiania	29.48	748.9	29.63	752.7	36.7	2.6	93	ENE	4	2			10			0.016	0.4	Light rain	
Tromsö	29.72	754.8	29.76	755.9	34.9	1.6	59	Calm	0	0			0			0	0		

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	30.10	764.4	30.29	769.4	54.0	12.2	95	NE	6.9	3.1			3			0.197	5.0		Dr. J. A. Sampaio.
Campo Major	29.18	741.2	30.21	767.3	60.3	15.7	62	SSW	5.6	2.5			8	SSW		0	0		Dr. A. M. R. dos Santos.
Funchal, (Madeira)	29.98	761.6	30.06	763.4	68.0	20.0	68	Calm	0	0			9			0	0		Capt. D. A. de Cunha.
Lisbon, Observatory	29.82	757.4	30.18	766.5	60.4	15.8	74	SE	7.4	3.3			7			0.004	0.1		The Staff.
Ponta Delgada, (Azores)	30.17	766.3	30.24	768.1	59.5	15.3	50	N	12.5	5.6			5			0.142	3.6		

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

Naval Series. Vessels.	Sea or swell. Height scale 0-9	Sea or swell. Direction from—	
S. S. Bartholomew Dias.			R, A. T. Pinha, Com'd't.
S. S. India.			A. D. Pedroso, Com'd't.
S. S. Mindello.			J. F. R. R. Bastos, Com'd't.
S. S. Sado.			A. N. P. Sampaio, Com'd't.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.69	754.2	30.14	765.5	34.2	1.2	89	SSE	11	5			10ks						Astronomical Obs.
Wilna	29.81	757.1	30.25	768.3	34.2	1.2	68	SE	2	1			7					Light clouds	Astronomical Obs.
Dorpat	29.96	760.9	30.21	767.4	33.6	0.9	84	SSE	7	3			9n;ks						Prof. Dr. Weihrauch.
St. Petersburg	30.25	768.4	30.27	768.8	34.0	1.1	75	S	11	5			9k						Central Physical Obs.
Kuopio	29.77	756.1	30.11	764.7	31.5	— 0.3	100	SE	13	6			10			Blank	Blank		Ch. Forsten.
Kieff	29.67	753.5	30.34	770.6	32.2	0.1	61	ENE	7	3			1c					Light clouds	Physical Cabinet.
Nikolaiev	30.19	766.8	30.26	768.6	32.5	0.3	94	NE	13	6			10n						Kurdakof.
Kertch	30.21	767.4	30.23	767.9	41.4	5.2	87	NNE	7	3			0						Lagorio.
Moscow	30.12	765.0	30.73	780.5	15.1	— 9.4	91	S	9	4			7s						Meteorological Obs.
Lugan	30.26	768.7	30.48	774.2	30.6	— 0.8	85	E	31	14			10			Blank	Blank		Meteorological Obs.
Archangel	30.25	768.3	30.27	768.8	29.8	— 1.2	96	SSW	13	6			10						Ogorodnikof.
Tiflis	29.11	739.3	30.60	777.1	41.7	5.4	57	Calm	0	0			0						Physical Observatory.
Astrakhan	30.72	780.2	30.63	778.1	32.4	0.2	64	ESE	7	3			0						Sebastianof.
Kasan	30.40	772.2	30.70	779.8	15.1	— 9.4	100	Calm	0	0			7					Light clouds	Physical Cabinet.
Orenburg																			Tschernischet.
Ekaterinburg	29.45	748.1	30.49	774.4	14.9	— 9.5	91	W	22	10			10						Meteorological Obs.
Nukuss	30.27	768.9	30.52	775.2	27.9	— 2.3	75	N	4	2			1ks						
Kasaly																			Bobrof.
Tashkend	28.78	730.9	30.58	776.7	35.6	2.0	82	Calm	0	0			0						Michelson.
Barnaul	29.72	754.8	30.28	769.0	20.1	— 6.6	92	SW	9	4			10					Snowing	Meteorological Obs.
Yeniseisk	29.77	756.1	30.12	765.0	12.0	—11.1	87	WNW	4	2			10			Blank	Blank		Marks.
Irkutsk																			Usolzef.
Oorga																			Mossin.
Krotkowo	30.20	767.1	30.71	780.0	14.9	— 9.5	87	S	2	1			1s						Cand. Fatjanow.
Peking, (China)	30.05	763.3	30.19	766.9	22.8	— 5.1	61	Calm	0	0			3ks						Physical Observatory.
Nertchinsk																			Meteorological Obs.
Vladivostock	30.10	764.6	30.14	765.6	18.5	— 7.5	83	Calm	0	0			10n						
Nikolaievsk, on the Amoor					— 0.8	—18.2	83	W	13	6			0						

NOTE.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Viennasymbols; they omit the rain-fall. The elevation of Tiflis is 499 meters, or 1,341.8 feet; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft.

SPANISH SERIES.

Furnished by the cooperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y																			Antonio Rave, Director.
Bilbao, Met. Obs'y																			Prof. Manuel de Naveran
Burgos, Met. Obs'y																			Domingo Martin y Perez.
Madrid, Royal Observatory	27.97	710.4	30.20	767.0	51.4	10.8	85	NE	1.9	0.85		0	10			0.004	0.1	Covered	The Staff.
Murcia, Met. Obs'y																			Olayo Diaz, Director.
Santiago, Met. Obs'y																			R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	30.21	767.4	30.28	769.1	66.4	19.1	78	N	19.5	8.7			10n		N	Inap.	Inap.	Cloudy	Benito Vines, S. J.
San Fernando, Naval Obs'y	30.11	764.7	30.21	767.2	58.3	14.6	86	NNE	8.5	3.8		0	4		E	0	0		Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, IW			29.92	760.0	78.3	25.7	91	NE	6.7	3.00		5kn	3kn	NE	NE	0.167	4.25	Cloudy	Leonardo de Tejeda, Chief of Engineers.

NOTE.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8.19 a m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the cöoperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Upp'r 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	30.07	763.6	30.10	764.6	34.2	1.2		SE			2		10			0.157	4.0		
Umea	29.90	759.4	29.95	760.7	35.2	1.8	100	S			2		10			0.094	2.4		
Hernosand	29.89	759.2	29.94	760.5	37.6	3.1	93	SE			2		10			0.063	1.6		
Stockholm	29.69	754.0	29.86	758.5	39.2	4.0	95	S			2		10			0.024	0.6		
Wisby	29.86	758.4	29.92	759.9	39.9	4.4	97	SSE			4		10			0.028	0.7		
Sub-Series.																			
Upsala	29.79	756.6	29.86	758.5	37.4	3.0	97	SE	9.2	4.1			10			0.034	0.88		Dr. Hildebrandsson.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.69	728.7	30.13	765.3	48.6	9.2	74	N			1		1			0.020	0.5	Clear	The Observatory.
Zurich	28.52	724.3	30.19	766.8	43.5	6.4	88	SE			1		9			1.024	26.0	Covered	The Observatory.

Note.—For Geneva the corresponding departures from the normal values are: Barometer, +1.6 mm; Thermometer, +5.8 cent.; Relative Humidity, —5 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople			30.04	763.1	53.2	11.8	86	N	9	4.0			10		N	0	0		The Observatory.
Fao, (Persian Gulf)																			
Salonica																			
Valona			30.04	763.0	57.7	14.3		SW			1		2			0.24	6.	Slightly cl'dy	A. Bertrand.
Varna																			Imperial Observatory.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.80	756.9	29.91	759.8	75.9	24.4	49	SE			2		3cs			0.12	3.0	D. clouds	Prof. C. V. A. Van Dyck

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	29.84	757.9	29.91	759.7	14.6	— 9.7	80	NW	8.0	3.6		0							Hon. J. Ferguson.
Brockville, Ontario	29.89	759.2	30.23	767.8	12	—11.1		Calm	0	0		0	2s		N	0.10	2.5	Fair	W. R. Bigg.
*Chatham, N. B	29.83	757.7	29.90	759.4	14	—10.0	93	W	8	3.6		5k	2ks	W	W	0.05	1.3	Fair	G. A. Blair.
Charlottetown, P. E. Island	29.90	759.4	29.94	760.5	20	— 6.7	68	W	10	4.5		5k	0	Calm		0.300	7.62	Fair	H. J. Cundall, C. E.
Cornwall, Ontario	29.99	761.7	30.20	767.1	13.4	—10.3	85	NW			3	0	2s			0	0	Fair	James Smith, M. A.
Dalhousie, N. B					13	—10.6	86	W			3					0	0	Threatening	H. A. Johnson.
Esquimault, B. C	29.89	759.2	29.93	760.2	42.1	5.6	80	N				2ck	0			0	0	Clear	W. H. Bevis.
*Father Point, Quebec	29.90	759.4	29.92	760.0	17	— 8.3	74	W	34	15.2		5ck	2s	W	W	0.03	0.8	Fair	J. McWilliams.
Fredericton, N. B	29.97	761.2	30.04	763.0	14.0	— 9.5	63	NW	14.0	6.3		2k	0	NW		0.080	2.03	Fair	Prof. Harrison.
*Fort Garry, Manitoba	28.99	736.3	29.85	758.2	24	— 4.4	98	NE	5	2.2		5k	5n	NE	NE	0.050	1.27	Cloudy	James Stewart.
Goderich, Ontario																			H. J. Strang, M. A.
Granton, Ontario	29.00	736.6	30.17	766.3	21.3	— 5.9	100	SW			2		10n			0.40	10.2	Snowing	James Grant.
*Halifax, N. S	29.67	753.6	29.81	757.2	31	— 0.6	87	NW	20	8.9			10n		NW	0.708	17.86	Threatening	F. Allison, M. A.
Hamilton, Ontario	29.86	758.4	30.25	768.3	28.5	— 1.9	71	SW			1	10cs		SW		0	0	Cloudy	Geo. Dickson, M. A
Heart's Content, N. F	29.33	745.0	29.36	745.7	37	— 2.8	67	SW			5		3s		SW	1.58	40.1	Cloudy	E. Weedon.
*Kingston, Ontario	29.86	758.4	30.22	767.6	15	— 9.4	88	NE	3	1.3		5k	0	NE		Inap.	Inap.	Fair	S. Woods, M. A.
Little Glace Bay, N. S	29.69	754.1	29.73	755.1	30.0	— 1.1		NW	10	4.5		8k		NW		0.80	20.3	Cloudy	C. H. Rigby.
*Montreal, Quebec	29.08	761.5	30.19	766.8	14	—10.0	66	W	12	5.4		5k	8s	W		Inap.	Inap.	Cloudy	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.36	745.7	30.11	764.8	16	— 8.9	91	N	10	4.5			10n		W	0.03	0.8	Light snow	Rev. R. Mosley.
Peterboro, Ontario	29.38	746.2	30.18	766.6	19.9	— 6.7	48	NE			1		10s			0	0	Overcast	J. F. Jeffers, B. A.
Port Dover, Ontario	29.47	748.5	30.21	767.3	25	— 3.9	87	W	4	1.8		10k	0	SW		Inap	Inap.	Cloudy	H. Morgan.
Port Hastings, N. S	29.70	754.4	29.75	755.6	40.1	4.5		NW	10	4.5						0	0	Fine	Peter Grant.
Port Stanley, Ontario	29.54	750.3	30.23	767.8	26	— 3.3	92	SW	22	9.8			10n		W	Inap.	Inap.	Cloudy	M. Payne.
*Quebec, Quebec	29.78	756.4	30.13	765.3	14	—10.0	64	W	9	4.0		2c	2n	W	W	0.01	0.3	Fair	Capt. Ashe, R. N.
*Rockliffe, Ontario	29.67	753.6	30.17	766.3	8	—13.3	87	E	4	1.8		8cs	0	W		Inap.	Inap.	Fair	W. H. McIntyre.
St. John, N. B	29.80	756.9	29.98	761.6	20	— 6.7	85	N	12	5.4		5k	0			0	0	Fair	G. Murdock, C. E.
*Saugeen, Ontario	29.32	744.7	30.06	763.5	26	— 3.3	90	SW	8	3.6			10n			0.06	1.5	Cloudy	K. Stewart.
Stayner, Ontario	29.29	744.0	30.12	765.0	23	— 5.0	81	Calm	0	0			10n		W	0.20	5.1	Cloudy	R. J. Cole.
Stratford, Ontario	28.80	731.5	30.17	766.3	21.0	— 6.1	87	SW	10.0	4.5			10s			0.10	2.5	Cloudy	C. J. MacGregor, M. A.
*Sydney, C. B	29.67	753.6	29.70	754.4	31	— 0.6	87	W	16	7.2			10ks		W	0.64	16.3	Cloudy	T. C. Hill.
*Toronto, Ontario	29.80	756.9	30.20	767.1	26	— 3.3	79	SW	12	5.4			10ks		W	Inap.	Inap.	Cloudy	Magnetic Observatory.
Windsor, N. S	29.70	754.4	29.80	756.9	29.5	— 1.4	72	NW	12	5.4			8k			0.45	11.4	Fair	Prof. John E. Oram.
Woodstock, Ontario																			J. Montgomery.
Sub-Series.																			
St. Johns, Newfoundland					37.0	2.8	90	SW				0	5ks			0.66	16.8	Stormy	John Delany.

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

By authority of the **SECRETARY OF WAR.** UNITED STATES SERIES.

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'r 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.99	*761.7	30.23	767.8	26	— 3.3	76	Calm	0	0	.....	0	2s	.....	Calm	0	0	Clear	
Alpena, Michigan	29.30	744.2	29.98	761.5	23	— 5.0	73	SW	10	4.5	.....	.....	10s	.....	SW	0.02	0.5	Cloudy	
Atlantic City, New Jersey	30.30	769.6	30.32	770.1	31	— 0.6	79	W	7	3.1	.....	0	0	.....	.....	0	0	Clear	
Augusta, Georgia	30.34	770.6	30.54	775.7	31	— 0.6	79	NW	2	0.9	.....	2c	Fog;sk	NW	NW;SW	0	0	Smoky	
Baltimore, Maryland	30.30	769.6	30.35	770.9	37	2.8	54	W	6	2.7	.....	5k	2s	NW	W	0	0	Fair	
Barnegat, New Jersey	30.27	768.8	30.29	769.4	33	0.6	79	W	12	5.4	.....	2k	0	W	.....	0	0	Fair	
Bismarck, Dakota	28.27	718.0	30.04	763 0	24	— 4.4	86	W	16	7.2	.....	0	5s	.....	NW	0	0	Fair	
Boise City, Idaho	27.40	696.0	30.20	767.1	22	— 5.6	72	S	4	1.8	.....	0	5s	.....	Calm	0	0	Fair	
Boston, Massachusetts	29.98	761.5	30.14	*765.5	30	— 1.1	57	NW	18	8.0	.....	1k	0	NW	.....	0.01	0.3	Clear	
Brackettville, Texas	29.24	742.7	30.34	770.6	31	— 0.6	68	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Breckenridge, Minnesota	28.93	734.8	29.99	761.7	21	— 6.1	93	W	16	7.2	.....	0	5s	.....	Calm	0	0	Fair	
Brownsville, Texas	30.45	773.4	30.52	775.2	41	5.0	56	N	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Buffalo, New York	29.45	748.0	30.19	766.8	26	— 3.3	76	W	10	4.5	.....	.....	10s	.....	W	0.02	0.5	Cloudy	
Burkes, Arizona	.....	.....	.....	.....	30	— 1.1	36	NW	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Burlington, Vermont	29.96	761.0	30.24	768.1	18	— 7.8	84	NW	7	3.1	.....	0	2s	.....	W	0.01	0.3	Fair	
Cairo, Illinois	30.02	762.5	30.44	773.2	33	0.6	70	S	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Camp Grant, Arizona	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Camp Verde, Arizona	27.03	686.6	30.52	775.2	22	— 5.6	72	NW	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Campo, California	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Cape Hatteras, N. Carolina	30.41	772.4	30.42	772.7	40	4.4	56	NW	14	6.3	.....	0	0	.....	.....	0	0	Clear	
Cape Henry, Virginia	30.37	771.4	30.40	772.1	38	3.3	54	NW	15	6.7	.....	0	0	.....	.....	0	0	Clear	
Cape Lookout, N. Carolina	30.42	772.7	30.44	773.2	38	3.3	62	NW	7	3.1	.....	2k	0	Calm	.....	0	0	Fair	
Cape May, New Jersey	30.30	769.6	30.33	770.4	36	2.2	62	W	28	12.5	.....	0	0	.....	.....	0	0	Clear	
Charleston, South Carolina	30.44	773.2	30.51	774.9	37	2.8	71	N	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Cheyenne, Wyoming	24.16	613.6	30.10	764.5	26	— 3.3	52	N	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Chicago, Illinois	29.37	746.0	30.09	764.3	32	0.0	79	SW	12	5.4	.....	8ck	2s	SW	Calm	Inap.	Inap.	Cloudy	
Cincinnati, Ohio	29.66	753.4	30.35	770.9	30	— 1.1	78	S	1	0.4	.....	7k	Fog	W	Calm	0.02	0.5	Fair	
Cleveland, Ohio	29.53	750.0	30.30	769.6	26	— 3.3	77	S	20	8.9	.....	.....	10s	.....	S	0.03	0.8	Cloudy	
Concho, Texas	28.41	721.6	30.25	768.3	30	— 1.1	78	SW	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Corsicana, Texas	29.97	761.2	30.49	774.4	32	0.0	69	SW	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Davenport, Iowa	29.48	748.8	30.14	765.5	32	0.0	79	W	6	2.7	.....	Haze	4s	Calm	W	0.01	0.3	Fair	
Denison, Texas	29.59	751.6	30.45	773.4	34	1.1	61	SW	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Denver, Colorado	24.92	633.0	30.14	765.5	27	— 2.8	65	SW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Detroit, Michigan	29.47	748.5	30.18	766.6	23	— 5.0	86	SW	18	8.0	.....	2ck	5s	SW	SW	0.01	0.3	Fair	
Dodge City, Kansas	27.55	699.8	29.98	761.5	25	— 3.8	75	N	18	8.0	.....	0	0	.....	.....	0	0	Clear	
Dubuque, Iowa	29.34	745.2	30.08	764.0	24	— 4.4	74	W	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Duluth, Minnesota	29.12	739.6	29.84	757.9	12	—11.1	80	N	8	3.6	.....	.....	10ks	.....	N	0	0	Cloudy	
Eagle Pass, Texas	29.65	753.1	30.46	737.7	27	— 2.8	64	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Eastport, Maine	29.87	758.7	29.94	760.5	21	— 6.1	71	NW	21	9.4	.....	0	5s	.....	NW	0.10	2.5	Fair	
Erie, Pennsylvania	29.48	744.8	30.24	768.1	27	— 2.8	77	SW	15	6.7	.....	.....	10s	.....	.....	0.21	5.3	Cloudy	
Escanaba, Michigan	29.21	741.9	29.90	759.4	21	— 6.1	71	SW	12	5.4	.....	.....	10s	.....	SW	0	0	Cloudy	
Florence, Arizona	28.56	725.4	30.16	766.1	55	12.8	38	E	.....	.....	.....	0	0	.....	.....	0	0	Clear	
FortBayard, New Mexico	24.25	615.9	30.25	768.3	27	— 2.8	55	W	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Fort Craig, New Mexico	25.84	656.3	.....	.....	13	—10.6	62	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Fort Gibson, Indian Ter	29.80	756.9	30.37	771.4	34	1.1	51	SE	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Fort Griffin, Texas	29.04	737.6	30.39	771.9	37	2.8	63	S	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	1	0.4	.....	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	29.05	737.9	30.25	768.3	24	— 4.4	87	SW	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Galveston, Texas	30.47	773.9	30.52	775.2	44	6.7	84	NE	16	7.2	.....	0	0	.....	.....	0	0	Clear	
Grand Haven, Michigan	29.38	746.2	30.04	763.0	37	2.8	71	SW	7	3.1	.....	.....	10s	.....	Calm	0.01	0.3	Cloudy	
Indianapolis, Indiana	29.43	747.5	30.25	768.3	30	— 1.1	78	S	1	0.4	.....	.....	10s	.....	W	0.01	0.3	Cloudy	
Indianola, Texas	30.49	774.4	30.52	775.2	45	7.2	84	S	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Jacksboro, Texas	29.16	740.7	30.40	772.1	31	— 0.6	68	S	3	1.3	.....	0	0	.....	.....	.....	.....	Clear	
Jacksonville, Florida	30.47	773.9	30.49	774.4	38	3.3	63	NW	3	1.3	.....	5cs	0	Calm	.....	0	0	Fair	
Keokuk, Iowa	29.50	749.3	30.15	765.8	35	1.7	70	W	7	3.1	.....	.....	10s	.....	Calm	0	0	Cloudy	
Key West, Florida	30.28	769.1	30.32	770.1	57.5	14.2	75	N	25	11.2	.....	.....	10s	.....	N	0	0	Cloudy	
Kittyhawk, North Carolina	30.40	772.1	30.43	772.9	35	1.7	70	NW	12	5.4	.....	0	1s	.....	NE	0	0	Clear	
Knoxville, Tennessee	29.48	744.8	30.57	776.5	26	— 3.3	77	Calm	0	0	.....	0	Sm'e	.....	.....	Inap.	Inap.	Smoky	
La Crosse, Wisconsin	29.25	742.9	30.03	762.7	25	— 3.9	75	S	7	3.1	.....	0	0	.....	.....	0	0	Clear	
La Mesilla, New Mexico	26.39	670.3	30.54	775.7	18	— 7.8	37	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Laredo, Texas	.....	.....	.....	.....	28	— 2.2	77	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Leavenworth, Kansas	29.38	746.2	30.27	768.8	31	— 0.6	79	S	1	0.4	.....	2c	Fog	Calm	.....	0	0	Fair	
Los Angeles, California	29.69	754.1	30.02	762.5	55	12.8	12	N	7	3.1	.....	0	2s	.....	Calm	0	0	Clear	
Louisville, Kentucky	29.78	756.4	30.37	771.4	32	0.0	89	S	5	2.2	.....	0	Fog	.....	Calm	Inap.	Inap.	Clear	
Lynchburg, Virginia	29.69	754.1	30.41	772.4	35	1.7	45	Calm	0	0	.....	0	Haze	.....	Calm	0	0	Hazy	
Maricopa Wells, Arizona	.....	.....	.....	.....	26	— 3.3	28	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Marquette, Michigan	29.08	738.6	29.82	757.4	20	— 6.7	70	S	3	1.3	.....	.....	10s	.....	Calm	0	0	Cloudy	
Mason, Texas	28.74	730.0	30.66	778.7	24	— 4.4	74	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Memphis, Tennessee	30.16	766.1	30.50	774.7	33	0.6	69	S	5	2.2	.....	0	Sm'e	.....	N	0	0	Clear	
Milwaukee, Wisconsin	29.33	745.0	30.05	763.3	23	— 5.0	86	SW	10	4.5	.....	0	5s	.....	SW	0.01	0.3	Fair	
Mobile, Alabama	30.54	775.7	30.59	777.0	33	0.6	84	Calm	0	0	.....	8c	0	W	.....	0	0	Fair	
Montgomery, Alabama	30.32	770.1	30.57	776.5	33	0.6	84	S	1	0.4	.....	0	Fg;sm.	.....	Calm	0	0	Clear	
Morgantown, West Virginia	29.25	742.9	30.38	771.6	30	— 1.1	68	SW	13	5.8	.....	.....	10s	.....	SW	0.01	0.3	Cloudy	
Mt. Washington, N. H.	23.44	595.4	29.80	756.9	—5	—20.6	63	NW	36	16.1	.....	0	5s	.....	NW	0.66	16.8	Fair	
Nashville, Tennessee	29.93	760.2	30.51	774.9	25	— 3.9	87	Calm	0	0	.....	0	Haze	.....	Calm	Inap.	Inap.	Clear	
New Haven, Connecticut	30.09	764.3	30.22	767.6	35	1.7	61	NW	4	1.8	.....	0	0	.....	.....	Inap.	Inap.	Clear	
New London, Connecticut	30.15	765.8	30.20	767.1	34	1.1	70	NW	6	2.7	.....	1k	1s	NW	W	0.02	0.5	Clear	
New Orleans, Louisiana	30.47	773.9	30.54	775.7	40	4.4	56	NE	4	1.8	.....	2ck	2ks	SW	SW	0	0	Fair	
Newport, Rhode Island	30.14	765.5	30.19	766.8	33	0.6	51	W	22	9.8	.....	0	0	.....	.....	0.02	0.5	Clear	
New York, New York	30.09	764.3	30.28	769.1	34	1.1	61	NW	10	4.5	.....	0	5ks	.....	Calm	0	0	Fair	
Norfolk, Virginia	30.37	771.4	30.43	772.9	34	1.1	69	NW	1	0.4	.....	0	0	.....	.....	0	0	Clear	
North Platte, Nebraska	27.30	693.4	30.09	764.3	16	— 8.9	83	W	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Olympia, Washington Ter.	29.92	760.0	29.96	761.0	36	2.2	100	S	1	0.4	.....	.....	Fog	.....	Calm	0.23	5.8	Dense fog	
Omaha, Nebraska	29.07	738.4	30.22	767.6	29	— 1.7	85	NW	3	1.3	.....	0	2s	.....	Calm	0	0	Clear	
Oswego, New York	29.88	758.9	30.22	767.6	28	— 2.2	76	NW	4	1.8	.....	.....	10n	.....	Calm	0.10	2.5	Light snow	
Pembina, Dakota	29.02	737.1	29.88	758.9	26	— 3.3	100	NW	12	5.4	.....	.....	10n	.....	NW	0.01	0.3	Light snow	
Philadelphia, Pennsylvania	30.27	768.8	30.32	770.1	33	0.6	69	SW	4	1.8	.....	0	Sm'e	.....	Calm	0	0	Clear	
Phœnix, Arizona	.....	.....	.....	.....	32	0.0	30	NE	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Pike's Peak, Colorado	17.77	451.4	29.98	761.5	11	—11.7	40	NW	12	5.4	.....	8cs	0	N	.....	0	0	Cloudy	
Pioche, Nevada	24.21	614.9	29.98	761.5	34	1.1	71	S	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Pittsburg, Pennsylvania	29.47	748.5	30.38	770.4	28	— 2.2	77	W	9	4.0	.....	.....	10c	.....	W	0.05	1.3	Cloudy	
Port Huron, Michigan	29.45	748.0	30.16	766.1	22	— 5.6	86	SW	18	8.0	.....	.....	10ks	.....	SW	0	0	Cloudy	
Portland, Maine	30.05	763.3	30.10	764.5	27	— 2.8	64	NW	9	4.0	.....	1k	Haze	Calm	.....	0	0	Clear	
Portland, Oregon	29.99	761.7	30.09	764.3	42	5.6	65	E	8	3.6	.....	0	2s	.....	Calm	0	0	Clear	
Prescott, Arizona	24.95	633.7	30.31	769.9	18	— 7.8	68	NE	.....	.....	.....	2cs	0	Calm	.....	0	0	Fair	
Punta Rassa, Florida	30.39	771.9	30.41	772.4	45	7.2	60	W	16	7.2	.....	2k	2ks	N	N	Inap.	Inap.	Fair	
Red Bluff, California	29.67	753.6	30.04	763.0	39	3.9	73	N	4	1.8	.....	0	5s	.....	Calm	0	0	Fair	
Rochester, New York	29.55	750.6	30.19	766.8	28	— 2.2	83	SW	4	1.8	.....	.....	10s	.....	SW	0.10	2.5	Cloudy	

Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

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Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

UNITED STATES SERIES.—CONTINUED.

STATIONS.	BAROMETER. Corrected for instrum'tal error and temperature. Inches.	BAROMETER. Corrected for instrum'tal error and temperature. Millimeters.	BAROMETER. Reduced to sea-level. Inches.	BAROMETER. Reduced to sea-level. Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Upper. From—	CLOUDS. Direction. Lower. From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	WEATHER.	OBSERVER.
Roseburg, Oregon	29.44	747.8	30.03	762.7	36	2.2	100	Calm	0	0	.....	.....	Fog	.....	Calm	0	0	Foggy	
Sacramento, California	29.99	761.7	30.08	764.0	40	4.4	82	Calm	0	0	.....	1c	Sm'e	W	Calm	0	0	Clear	
St. Louis, Missouri	29.69	754.1	30.29	769.4	35	1.7	80	S	12	5.4	.....	0	Sm'e	.....	.....	0	0	Clear	
St. Marks, Florida	30.51	774.9	30.53	775.4	32	0.0	94	N	3	1.3	.....	5c	0	Calm	.....	0	0	Fair	
St. Paul, Minnesota	29.06	738.1	29.94	760 5	19	—7.2	84	SW	12	5.4	.....	0	0	.....	.....	0	0	Clear	
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salt Lake City, Utah	25.89	657.6	30.22	767.6	20	—6.7	70	SW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
San Antonio, Texas	29.77	756.1	30.39	771.9	39	3.9	82	NE	8	1.3	.....	0	0	.....	.....	0	0	Clear	
San Diego, California	29.98	761.5	30.05	763.3	51	10.6	72	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Sandusky, Ohio	29.55	750.6	30.27	768.8	27	—2.8	88	SW	20	8.9	.....	0	8s	.....	Calm	Inap.	Inap.	Fair	
Sandy Hook, New Jersey	30.24	768.1	30.26	768.6	37	2.8	71	SW	17	7.6	.....	0	5ks	.....	W	0	0	Fair	
San Francisco, California	29.97	761.2	30.04	763.0	50	10.0	79	SW	3	1.3	.....	.....	10s	.....	Calm	0	0	Cloudy	
Santa Fé, New Mexico	23.46	595.9	30.00	762.0	19	—7.2	60	NE	13	5.8	.....	0	0	.....	.....	0	0	Clear	
Savannah, Georgia	30.42	772.7	30.52	775.2	35	1.7	80	N	8	3.6	.....	2cs	0	SW	.....	0	0	Fair	
Shreveport, Louisiana	30.31	769.9	30.55	776.0	32	0.0	79	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Smithville, North Carolina	30.45	773.4	30.49	774.4	32	0.0	89	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Springfield, Massachusetts	30.00	762.0	30.14	765.5	31	—0.6	49	NW	11	4.9	.....	0	0	.....	.....	Inap.	Inap.	Clear	
Stockton, Texas	27.22	691.4	30.22	767.6	22	—5.6	72	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Thatcher's Island, Mass	30.06	763.5	30.12	765.0	29	—1.7	78	NW	28	12.5	.....	1k	0	W	.....	0	0	Clear	
Toledo, Ohio	29.50	749.3	30.21	767.3	28	—2.2	88	S	14	6.3	.....	0	8s	.....	S	0.06	1.5	Cloudy	
Tucson, Arizona	27.73	704.3	30.28	769.1	36	2.2	28	NW	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Tybee Island, Georgia	30.48	774.2	30.51	774.9	37	2.8	80	N	10	4.5	.....	5c	0	Calm	.....	0	0	Fair	
Umatilla, Oregon	29.03	760.2	.....	.....	35	1.7	80	Calm	0	0	.....	.....	10s	.....	Calm	Inap.	Inap.	Cloudy	
Vicksburg, Mississippi	30.30	769.6	30.58	776.7	32	0.0	69	SE	3	1.3	.....	0	Sm'e	.....	Calm	0	0	Clear	
Virginia City, Montana	24.39	619.5	29.87	758.7	23	—5.0	86	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Visalia, California	29.70	754.4	30.08	764.0	40	4.4	82	NW	3	1.3	.....	Haze	0	Calm	.....	0	0	Clear	
Washington, D. C	30.26	768.6	30.39	771.9	33.5	0.8	66	NW	4	1.8	.....	0	.1s	.....	W	0	0	Clear	
Wickenburg, Arizona	.....	.....	.....	.....	20	—6.7	56	SE	.....	.....	.....	5c	0	Calm	.....	0	6	Fair	
Wilmington, N. Carolina	30.39	771.9	30.48	774.2	34	1.1	61	N	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Winnemucca, Nevada	25.74	653.8	30.10	764.5	25	—3.9	62	NE	11	4.9	.....	0	8s	.....	Calm	0	0	Cloudy	
Wood's Holl, Mass	30.12	765.0	30.17	766.3	35	1.7	52	NW	26	11.2	.....	Haze	0	.....	.....	0	0	Clear	
Yankton, Dakota	28.90	734.0	30.27	768.8	25	—3.9	75	SW	11	4.9	.....	0	0	.....	.....	0	0	Clear	
Yuma, Arizona	29.99	761 7	30.17	766.3	43	6.1	35	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
SUB-SERIES.																			
York Factory, B. A	29.67	753.6	29.72	754.9	8.0	—13.3	100	E	9	4.0	.....	.....	10s	.....	.....	.....	.....	Snowing	J. Fortescue, W. Wood.
Havana, Cuba, W. I	30.19	766.8	30.21	767.3	67	19.4	79	N	7.2	3.2	.....	.....	8n	.....	N	0	0	Cloudy	Chas. Hasselbrink.
Kingston, Jamaica, W. I	30.16	766.1	30.17	766.3	76	24.4	82	Calm	0	0	.....	5c	2s	Calm	NE	0	0	.....	James Gall.
Navassa, W. I	29.95	760.7	30.03	762.7	79.6	26.4	.....	NE	10	4.5	.....	.....	.....	.....	.....	0	0	Fair	F. M Everett.
St. Thomas, W. I	.....	.....	.....	.....	78	25.6	86	NE	4	1.8	.....	2c	2k	ENE	.....	0	0	.....	G. O. Gellich.
Paramaribo, D. Guiana, S. A	.....	.....	29.97	761.2	83	28.3	83	NE	.....	.....	3	5k	7ks	E	.....	0.400	10.16	¾ cloudy	C. J. Hering.
Batavia, Dutch Guiana, S. A	30.05	763.2	30.06	763.4	85.1	29.5	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.266	6.50	Cloudy	Dr. H. Groot.
Medellin, Colombia, S. A	25.24	641.1	.....	.....	66.0	18.9	78	Calm	.....	.....	0	1k	1ks	.....	.....	0	0	Fair	Thomas Herran.
Honolulu, Oahu, H. I	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Daniel Smith.
Makawao, Maui, H. I	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters: Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 760 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.5 (?) m.: Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.: Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Ploche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.67 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Ploche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.: Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard Mare Island, Cal.	30.02	762.5	45	7.2	43	6.1	75	NNE	1	0.4	.....	.....	10ks	.....	Calm	0	0	.....	.....	Overcast.....	
Navy Yard, Pensacola, Fla.	30.50	774.7	.....	.....	41	5.0	49	N	3	1.3	.....	.....	7	.....	.....	0	0	.....	.....	D. clouds.....	
Navy Yard, Portsmouth, N.H	30.20	767.1	68	20.0	24	— 4.4	61	N	4	1.8	.....	.....	.....	.....	.....	0	0	.....	.....	Clear	
Naval Hospital, Yokohama, Japan.....	29.96	761.0	57	13.9	53	11.7	86	ENE	.....	.....	5	.....	10ks	.....	E	0.21	5.3	.....	.....	Cloudy.....	
Adams. Island Harbor, Chili.....	30.00	762.0	49	9.4	49	9.4	71	Var.	.....	.....	1	.....	8	.....	SW	Light	Light	None	.....	D. clouds.....	
Alert. Yokohama, Japan.....	30.07	763.8	.....	.....	58	14.4	88	NE	.....	.....	2–5	.....	10	.....	N	.....	.....	Smooth	.....	Squally.....	
Alliance, Constantinople, Turkey.	30.13	765.3	67	19.4	56	13.3	87	N	.....	.....	1	.....	10	.....	N	.....	.....	.....	.....	Overcast.....	
Ashuelot. Shanghai, China.....	30.33	770.4	56	13.3	44	6.7	92	Calm	.....	.....	0	.....	2	.....	Calm	.....	.....	.....	.....	D. clouds.....	
Canonicus, New Orleans, La.....	30.45	773.4	37	2.8	39	3.9	73	NE	.....	.....	2	.....	6	.....	.....	.....	.....	.....	.....	Cloudy.....	
Colorado. New York, N. Y.....	30.25	768.3	35	1.7	34	1.1	62	W	10	4.5	.....	.....	5	.....	WNW	0	0	.....	.....	Fair	
Despatch, Constantinople, Turkey.	30.14	765.5	64	17.8	53	11.7	74	NE	.....	.....	2	.....	10	.....	NE	.....	.....	.....	.....	Rainy.....	
Essex, S. 3° 14′, E. 9° 37′.....	29.83	757.7	82	27.8	85	29.4	87	SSE	.....	.....	2	.....	7	.....	.....	.....	.....	Smooth	S	D. clouds.....	
Franklin, Norfolk, Va.....	30.48	774.2	36	2.2	36	2.2	46	NW	4.8	2.1	.....	.....	9?	.....	NW	0	0	.....	.....	Clear.....	
Guard, Lisbon, Portugal.....	30.17	766.3	63	17.2	62	16.7	83	SSE	.....	.....	2	.....	6	.....	S	.....	.....	.....	.....	D. clouds.....	
Lackawana, Mare Island, Cal.....	30.08	764.0	.....	.....	47	8.3	85	E	.....	.....	1	.....	9	.....	W	.....	.....	.....	.....	Blue sky.....	
Marion, N. 40° 30′, E. 12° 15′.....	30.19	766.8	63	17.2	60	15.6	65	NNW	.....	.....	2	.....	4	.....	Calm	Light	Light	Smooth	NNW	D. clouds.....	
Michigan, Erie, Pa.....	29.68	753.9	50	10.0	25	— 3.9	75	W	.....	.....	4	.....	10	.....	W	.....	.....	.....	.....	Cloudy.....	
Monocacy, Shanghai, China	30.16	766.1	64	17.8	46	7.8	84	NE	.....	.....	0–1	.....	.....	.....	.....	.....	.....	.....	.....	D. clouds.....	
Monongahela, N. 22° 03′, E. 37° 41′.	30.02	762.5	87	30.6	87	30.6	84	S&E	.....	.....	1	.....	cs	.....	.....	.....	.....	Smooth	.....	D. clouds. ...	
New Hampshire, Port Royal, S.C.....	30.59	777.0	.....	.....	36	2.2	80	NW	8	3.6	.....	.....	.....	.....	W	0	0	.....	.....	D. clouds.....	
Omaha, S. 16° 34′, W. 75° 36′.....	30.11	764.8	73.5	23.1	72.5	22.5	74	SE	12	5.4	.....	.....	10	.....	SE	0	0	Moderate	SE	Cloudy.....	
Onward, Callao, Peru.....	30.03†	762.7†	74	23.3	71	21.7	85	SE	.....	.....	2	.....	9	.....	.....	.....	.....	Long	W	Hazy.....	
Ossipee, Norfolk, Va.....	30.45	773.4	68	20.0	35	1.7	80	WNW	.....	.....	1	.....	1	.....	Calm	.....	.....	.....	.....	D. clouds.....	
Palos, Shanghai, China.....	30.33	770.4	54	12.2	44	6.7	76	NE	.....	.....	1–2	.....	0	.....	.....	.....	.....	.....	.....	Clear	
Plymouth. St. Thomas, W. I.....	30.10	764.5	84	28.9	82	27.8	91	ENE	.....	.....	2	.....	5	.....	E	.....	.....	Smooth	.....	.....	
Powhatan, Norfolk, Va.....	.....	.....	.....	.....	38	3.3	??	WNW	4.8	2.1	.....	.....	8	.....	.....	0	0	.....	.....	Pleasant.....	
Ranger, Shanghai, China.....	30.40	772.1	.....	.....	49.5	9.7	78	ENE	.....	.....	1	.....	1	.....	S	.....	.....	.....	.....	Clear.....	
Rio Bravo, Brownsville, Texas.....	30.37	771.4	.....	.....	42	5.6	83	NE	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	Blue sky.....	
Santee, Annapolis, Md.....	30.40	772.1	63	17.2	36	2.2	63	WSW	.....	.....	1	.....	8	.....	ENE	0	0	.....	.....	Cloudy.....	
Saratoga, Norfolk, Va.....	.....	.....	.....	.....	33	0.6	89	Calm	.....	.....	0	.....	2	.....	Calm	0	0	.....	.....	Misty.	
St. Louis, League Island, Pa	30.17	766.3	34	1.1	33	0.6	90	W	15	6.7	.....	.....	1	.....	W	0	0	.....	.....	Clear	
Swatara, Norfolk, Va.....	30.47	773.9	.....	.....	41	5.0	74	W	.....	.....	1	.....	0	.....	.....	.....	.....	.....	.....	Blue sky.....	
Tennessee, Kobe, Japan.....	30.07	763.8	67	19.4	51	10.6	72	NNW	3	1.3	.....	.....	0	.....	.....	0	0	None	.....	Blue sky.....	
Trenton, Villefranche, France.....	30.20	767.1	.....	.....	59	15.0	59	SE	10	4.5	.....	.....	10	.....	S&E	0	0	.....	.....	D. clouds.....	
Vandalia, Villefranche, France.....	30.15	765.8	59	15.0	56	13.3	87	ENE	.....	.....	1	.....	10	.....	.....	.....	.....	.....	.....	D. clouds.....	
Wabash, Boston, Mass.....	30.11	764.8	42	5.6	30	— 1.1	.....	NW	11	4.9	.....	.....	1	.....	Calm	0	0	.....	.....	D. clouds....	
Wyoming, Washington, D. C.....	30.54†	775.7†	.....	.....	36	2.2	.....	WNW	.....	.....	3	.....	1	.....	.....	.....	.....	.....	.....	D. clouds.....	

Note.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. The position given for the Plymouth is that at noon, local time, instead of that at 7:35 a. m., Washington time.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Character.	Direction from—		
S. S. Alaska																			Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama, N. 29° 28′ 42″, W. 116° 32′ 10″			29.89	759.2	66	18.9	94	NE			3		2		Calm	Very light.	NNW	D. clouds	Capt. Howard.
S. S. City of Peking, N. 36° 13′, W. 135° 20′			30.05*	763.3*	57	13.9	81	W			6		6		W	Long	W	D. clouds	Lt. Z. L. Tanner, U.S.N.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio, Hong-Kong, China			30.04	763.0	71	21.7		E			4		10					Overcast	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

NOTE.—The originals give the wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. *Aneroid.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.

S. S. Belgic																			Capt. John Metcalf.
S. S. Gaelic, N. 30° 15′, E. 151° 00′			29.97*	761.2*	72	22.2	??	E			6		kn		SW	Heavy	W	Raining	Capt. W. H. Kidley
S. S. Oceanic																			Capt. H. Parsell.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. *Aneriod.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig																			Capt. K. Undütsch.
S. S. Nürnberg, N. 28° 36′, W. 54° 11′			30.29	769.4	73.5	23.1	90	ESE			3		0			Smooth	NW	Blue sky	Capt. A. Jaeger.
S. S. Ohio, N. 48° 6′, W. 37° 11′			29.76	755.9	58.5	14.7	88	SSW			8		ks		SW	High	SW	Overcast	Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, nor distinguish between upper and lower clouds.

UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Lo'wr	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second	0—10.	0—10.	0—10.	From—	From—	Character	Direction From—		
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, N. 45° 40′, W. 52° 51′			29.38*	746.2*	40	4.4	??	SW			8		3		NW	Heavy	W		Captain Sargent.
S. S. Ohio, Philadelphia, Pa			30.35	770.9	33	0.6	89	WSW			1		1		WSW			Clear	Captain Morrison.
S. S. Pennsylvania, Liverpool			29.74†	755.4†	51	10.6	??	WNW			5		1		WNW			Clear	Captain Harris.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. *Aneroid. † Corrected for temperature and elevation, instrumental error not known.

RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

S. S. Nederland																			Capt. Randle.
S. S. Switzerland																			Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

S. S. Hibernian																			
S. S. Scandinavian, N. 48° 1′, W. 51° 30′			29.25	742.9	42	5.6		WSW			6		7ck		SW	Very high.	WSW	D. clouds	Capt. W. Richardson.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, Kennebunk, Maine			30.11	764.8	26	—3.3	75	WNW	7	3.1			0					Clear	Capt. James Jorgensen.

NOTE.—The originals for the schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.,) Chief Signal Officer, U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON DECEMBER 8, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:20 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours	.....	.....	30.18	766.6	62.6	17.0	75	Calm	.....	.....	0	.....	2	.....	.....	0	0	Fair	Michel.
Algiers	.....	.....	30.13	765.3	62.6	17.0	87	N	.....	.....	2	.....	9	.....	.....	0	0	Covered	Peter.
La Calle	.....	.....	30.09	764.2	63.9	17.7	74	NW	.....	.....	2	.....	7	.....	.....	0	0	Very cloudy	Fleury.
Tunis	.....	.....	30.14	765.6	62.4	16.9	80	NW	.....	.....	3	.....	7	.....	.....	0	0	Very cloudy	Jacques.
Sfax	.....	.....	30.09	764.2	59.0	15.0	.....	SW	.....	.....	3	.....	6	.....	.....	.....	.....	Cloudy	Husson.
Saida	.....	.....	30.21	767.3	67.5	19.7	23	SSW	.....	.....	1	.....	1	.....	.....	0	0	Very fair	Millot.
Tebessa	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Bassières.
Geriville	.....	.....	30.20	767.1	52.2	11.2	93	N	.....	.....	3	.....	3	.....	.....	0	0	Pretty fair	Lemaillot.
Laghouat	.....	.....	30.18	766.6	66.2	19.0	40	N	.....	.....	1	.....	0	.....	.....	0	0	Clear	Guyot.
Biskra	.....	.....	30.12	765.0	68.7	20.4	36	NW	.....	.....	1	.....	5	.....	.....	0	0	Cloudy	Kuntz.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890 ? meters, or 2,919.9 ? feet; Tebessa, 1,088 ? m., or 3,569.4 ? ft.; Geriville, 1,360 ? m.; or 4,461.7 ? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Agram	29.30	744.3	29.87	758.6	41.5	5.3	91	Calm	.....	.....	0	.....	10	.....	.....	0.122	3.1	Dense fog	Prof. Ivan Stozir
Cracow, I. R. Observatory	29.17	741.0	29.96	761.0	39.9	4.4	98	NE	.....	.....	1	.....	10	.....	.....	0.035	0.9	.....	Dr. Wierzbiski.
Eperies	29.03	737.4	29.93	760.2	41.9	5.5	91	Calm	.....	.....	0	.....	10	.....	.....	0	0	.....	Julius Mikolik.
Gratz	28.62	727.0	29.91	759.6	37.0	2.8	91	WSW	.....	.....	2	.....	10	.....	.....	0	0	.....	Andreas Rospini.
Hermannstadt	28.48	723.4	29.93	760.2	45.3	7.4	78	SE	.....	.....	1	.....	8	.....	.....	0.020	0.50	.....	Prof. Reissenberger.
Kremsmünster	28.50	723.8	29.87	758.6	41.4	5.2	87	W	.....	.....	2	.....	10	.....	.....	0.197	5.0	.....	Prof. C. Wagner.
Lemberg	28.97	735.7	30.00	762.0	30.0	— 1.1	94	SE	.....	.....	1	.....	10	.....	.....	0	0	.....	Dr. T. Stanecki.
Pola	29.74	755.5	29.86	758.4	45.3	7.4	98	ESE	.....	.....	1	.....	10s	.....	.....	0	0	.....	I.R.HydrographicOffice
Szathmar	29.56	750.8	30.04	762.9	44.4	6.9	94	E	.....	.....	2	.....	10	.....	.....	0	0	Foggy	Johann Tamas, S. J.
Szegedin	29.64	752.9	29.93	760.2	46.0	7.8	92	S	.....	.....	1	.....	10	.....	.....	0.033	0.85	.....	Karl Stancel.
Trieste	29.79	756.7	29.89	759.3	47.3	8.5	69	Calm	.....	.....	0	.....	10	.....	.....	Inap.	Inap.	Drizzling	P. Busin.
Vienna	29.14	740.1	29.85	758.1	44.2	6.8	85	S	.....	.....	1	.....	0	.....	.....	0.020	0.5	.....	I. R. Central Met. Obs'y
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Arlon	28.65	727.6	30.21	767.2	38.1	3.4	70	NW	.....	.....	6	.....	5	.....	.....	0	0	.....	Prof. M. Passau.
Brussels	29.98	761.4	30.19	766.7	43.5	6.4	65	WNW	.....	.....	5	.....	0	.....	.....	0	0	.....	Royal Observatory.
Furnes	30.16	766.1	30.19	766.7	45.7	7.6	99	WNW	.....	.....	4	.....	8	.....	.....	0	0	Light fog	M. E. de Cae.
Maeseyck	29.97	761.3	30.10	764.6	43.5	6.4	83	NW	.....	.....	4	.....	3	.....	.....	0	0	.....	M. Pierrot.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	29.71	754.6	29.81	757.2	39.6	4.2	.....	SSW	18	8.0	.....	.....	10	.....	.....	0.020	0.51	Raining... ...	W. Boswell.
Ardrossan	29.88	758.9	29.90	759.4	48	8.9	.....	SW	.....	.....	3	.....	10	.....	.....	.....	.....	Raining.....	William McNeil.
Armagh, Observatory	.....	.....	.....	.....	45.7	7.6	.....	SSW	20	8.9	.....	.....	10	.....	.....	.....	.....	Squally.....	S. Call, for Dr. Robinson
Bidston, (Liverpool Obs.)	.....	.....	30.10	764.5	48.0	8.9	.....	WSW	6	2.7	.....	.....	7	.....	.....	.....	.....	D. clouds.. ..	John Hartnup.
Birr Castle, (Parsonstown)	.....	.....	30.10	764.5	46.0	7.8	.....	SSW	.....	.....	1	.....	10	.....	.....	.....	.....	Overcast.....	J. Dreyer.
Bradford, Yorkshire	29.66	753.4	30.06	763.5	46.1	7.8	.....	SW	.....	.....	2	.....	10	.....	.....	0.13	3.3	Overcast.....	J. McLandsborough.
Bridgetown, (Barbados)	29.89	759.2	29.92	760.0	81.0	27.2	.....	NE	.....	.....	2	.....	3	.....	.....	.....	.....	D. clouds.....	Pvt. G. W. Roberts, A.
Cambridge, Observatory	.....	.....	30.17	766.3	49.0	9.4	.....	S	.....	.....	1	.....	2	.....	.....	.....	.....	D. clouds	H. Todd. [H.O.
Cardington	.....	.....	30.20	767.1	44.0	6.7	.....	W	.....	.....	1	.....	4	.....	.....	.....	.....	D. clouds.....	John McLaren.
Chatham, School M. E.	30.00	762.0	30.13	765.3	44.2	6.8	.....	SW	.....	.....	1	.....	3	.....	.....	.....	.....	Blue sky.....	Lt. W. G. Morris, R. E.
Dartmoor	28.74	730.0	30.26	768.6	43.0	6.1	.....	W	.....	.....	2	.....	5	.....	.....	.....	.....	Fine.....	Alexander Watt.
Davos Platz (Switzerland)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Francis Redford, M. A.
Donaghadee	29.94	760.5	29.97	761.2	46	7 8	.....	SW	.....	.....	5	.....	8	.....	.....	.....	.....	D. clouds.....	J. Mac Gowan.
Dover	30.19	766.8	30.22	767.6	46	7.8	.....	WNW	.....	.....	3	.....	2	.....	.....	.....	.....	¼ clouded...	J. Costello.
Eccles, (near Manchester)	.....	.....	30.10	764.5	45.9	7.7	.....	SW	2.6	1.2	.....	.....	10	.....	.....	.....	.....	Gloomy.....	Thomas Mackereth.
Falmouth, Observatory	30.04	763.0	30.28	769.1	49.3	9.6	.....	WSW	.....	.....	2	.....	8	.....	.....	.....	.....	Overcast.....	The Staff.
Fort Napier, (Natal)	27.51	698.7	29.72	754.9	77.6	25.3	.....	W	.....	.....	5	.....	10	.....	.....	.....	.....	Overcast.....	Pvt. G. Salmon, A.H. C.
Free Town, (Sierra Leone)	.....	.....	29.88	758.9	87	30.6	.....	Calm	.....	.....	0	.....	3	.....	.....	.....	.....	D. clouds.....	
Galway, Queen's College	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	30.15	765.8	30.21	767.3	64.2	17.9	.....	E	.....	.....	2	.....	2	.....	.....	.....	.....	D. clouds.....	Corpl. C. Aitken, A.H.C.
Glasgow, Observatory	29.68	753.9	29.89	759.2	45.5	7.5	.....	WSW	.....	.....	3	.....	10	.....	.....	.....	.....	Raining.....	D. G. Maclean.
Great Yarmouth	30.14	765.5	30.15	765.8	40	4.4	.....	W	.....	.....	2	.....	3	.....	.....	.....	.....	Foggy	G. T. Watson.
Greenwich, Royal Obs'y	30.04	763.0	30.22	767.6	43.4	6.3	.....	WSW	.....	.....	1	.....	2	.....	.....	.....	.....	Blue sky.....	The Staff, for G. B. Airy.
Guernsey	30.07	763.8	30.29	769.4	49.5	9.7	.....	WSW	.....	.....	1	.....	6	.....	.....	.....	.....	D. clouds.....	Dr. S. E. Hoskins, F.R.S.
Helston	.....	.....	30.24	768.1	50	10.0	.....	SW	.....	.....	1	.....	3ck	.....	.....	0.2	5.	Fine.....	M. P. Moyle.
Holyhead	30.05	763.3	30.11	764.8	48	8.9	.....	SW	.....	.....	4	.....	3	.....	.....	.....	.....	D. clouds.....	John Tilston.
Jersey	30.04	763.0	30.34	770.6	49.0	9.4	.....	NW	.....	.....	2	.....	4	.....	.....	Blank	Blank	D. clouds.....	J. Fisher.
Kew, Observatory	.....	.....	30.22	767.6	45.2	7.3	.....	W	8	3.6	.....	.....	6	.....	.....	.....	.....	Hazy.....	The Staff.
Kingstown	30.04	763.0	30.07	763.8	47	8.3	.....	W	.....	.....	3	.....	10	.....	.....	.....	.....	Overcast	George Mitchell.
Leicester, Museum	.....	.....	30.18	766.6	43.8	6.6	.....	SW	.....	.....	2	.....	3	.....	.....	.....	.....	D. clouds.....	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.92	760.0	30.00	762.0	60.6	15.9	.....	NW	.....	.....	5	.....	6	.....	.....	.....	.....	D. clouds....	Sgt. Fred. Travis, A. H.
Nairn	29.59	751.6	29.68	753.9	47	8.3	.....	SW	.....	.....	2	.....	8	.....	.....	.....	.....	¾ clouded...	W. D. Penny. [O.
Nassau, (Bahamas)	.....	.....	30.17	766.3	72.2	22.3	.....	NE	.....	.....	5	.....	10	.....	.....	.....	.....	Overcast.....	C. S. Duncombe.
Nottingham, Observatory	29.97	761.2	30.16	766.1	44.7	7.1	.....	SSW	.....	.....	2	.....	5c	.....	NW	0	0	D. clouds....	E. J. Lowe, F. R. S
Oscott, St. Mary's College	29.62	752.3	30.16	766.1	43.2	6.2	.....	SW	.....	.....	2	.....	10	.....	.....	.....	.....	Misty.....	Rev. Stephen Whitty
Oxford, Radcliffe Obs'y	.....	.....	30.31	769.9	45	7.2	.....	WSW	.....	.....	1	.....	7	.....	.....	.....	.....	D. clouds.....	Mr. Lucas.
Plymouth	30.18	766.6	30.26	768.6	46.6	8.1	.....	W	.....	.....	2	.....	10	.....	.....	.....	.....	Overcast.....	John Merrifield.
Roche's Point	30.10	764.5	30.14	765.5	48	8.9	.....	WSW	.....	.....	3	.....	8	.....	.....	.....	.....	Cloudy.....	W. Kennedy.
Saint Ann's Head	30.03	762.7	30.20	767.1	50	10.0	.....	WSW	.....	.....	4	.....	7	.....	.....	.....	.....	D. clouds.. ..	John C. Walker.
Sandwick Manse, (Orkneys.)	.....	.....	29.58	751.3	42.8	6.0	.....	S	25	11.2	.....	.....	10	.....	.....	.....	.....	Raining.....	Rev. C. Clouston, L.L. D
Scutari, Cemetery, (Turkey)	.....	.....	29.78	756.4	59.8	10.4	.....	NE	.....	.....	2	.....	10	.....	.....	.....	.....	Drizzling.....	Sergt. W. H. Lyne.
Sheffield	29.88	758.9	30.16	766.1	46.5	8.1	.....	SW	.....	.....	2	.....	9	.....	.....	0.03	0.8	Overcast.....	W. F. Cooper.
Silloth Rectory	29.95	760.7	29.98	761.5	45.5	7.5	97	SW	.....	.....	3	.....	10	.....	.....	0	0	Overcast.....	Rev. F. Redford, M. A.
Stonyhurst, Observatory	.....	.....	.....	.....	45.0	7.2	.....	SW	.....	.....	3	.....	10	.....	.....	.....	.....	Overcast	Rev. S. J. Perry.
Stornoway, Lews C., (Hebr.)	.....	.....	29.56	750.8	47	8.3	.....	WSW	.....	.....	6	.....	10	.....	.....	.....	.....	Raining.....	John Smith.
Stratfield Turgiss	29.98	761.5	30.21	767.3	47.0	8.3	.....	SW	.....	.....	1	.....	1	.....	.....	.....	.....	Blue sky.....	Rev. C. H. Griffith, F.M.S.
Thurso	.....	.....	29.61	752.1	41	5.0	.....	S	.....	.....	2	.....	10	.....	.....	.....	.....	Raining.....	John Trotter.
Truro, Royal Institution	.....	.....	30.26	768.6	52	11.1	.....	SW	.....	.....	2	.....	4	.....	.....	.....	.....	D. clouds.....	W. Newcombe.
Valencia, Observatory	.....	.....	30.12	765.0	50.0	10.0	.....	SSW	22	9.8	.....	.....	6	.....	.....	.....	.....	D. clouds.....	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Henry Mercer.
Cape Good Hope, Obs'y	29.84	757.9	29.88	758.9	78.3	25.7	61	SSE	23	10.3	.....	1	1	.....	.....	.....	.....	.....	The Staff, for E. J. Stone.
Hobart Town, (Tasmania)	.....	.....	29.72	754.9	63.0	17.2	77	Calm	.....	.....	0	.....	10n	.....	.....	0	0	Covered.....	Francis Abbott, F.R.A.S.
Leith, Restalrig Park	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Andrew Gibb.
Mauritius, Observatory	29.83	757.7	30.02	762.4	79.5	26.4	65	ENE	17.5	7.8	.....	0	8	.....	ENE	0	0	Squally.....	C. Meldrum.
Melbourne, Observatory	29.82	757.4	29.92	759.9	59.0	15.0	83	S	14	6.3	.....	.....	10	.....	.....	0.05	1.3	Showery.....	R. L. J. Ellery.
Monach L't-house, (Hebrides)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Youngclause.
North Unst, (Shetland Is.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Robert Burnet.
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NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m.

MARINE SERIES.

VESSELS.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea or swell. Height scale 0—9	Sea or swell. Direction from—	Weather.	Observer.
S. S. Algeria, N. 45° 25', W. 46° 35'	.....	.....	29.99	761.7	37	2.8	.....	WNW	.....	.....	6	.....	10	.....	.....	15*	W	Hailing.....	Capt. W. Watson.
S. S. Batavia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. J. E. Mouland.
Ship Camperdown	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. A. T. Miller.
Brig Catherine	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. Adam Smith.
Barque Celeste	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. D. F. McKechnie
S. S. Hibernia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. W. R. Cato
Barque Maroon	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. A. T. Brown.
Ship Mikado	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. C. C. Prehn.
S. S. Seine	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. H. Manning.
Barque Sorata	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. Jas. J. Price.
Schooner Traveller	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. Alex Simpson
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
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NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. *Feet

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	BAROMETER. Corrected for instrum'tal error and temperature. Inches.	BAROMETER. Corrected for instrum'tal error and temperature. Millimeters.	BAROMETER. Reduced to sea-level. Inches.	BAROMETER. Reduced to sea-level. Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Upper. From—	CLOUDS. Direction. Lower. From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	WEATHER.	OBSERVER.
San José	26.22	666.0			68.0	20.0	81	E			6	3ck	8ks		NE	0	0		Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	30.00	762.0	30.05	763.2	42.4	5.8	96	Calm			0		10					Foggy
Fanöe	30.02	762.4	30.04	762.9	40.5	4.7	96	WSW			2		1					
Godthaab, (Greenland)	28.81	731.7	28.85	732.8	13.5	−10.3	76	NNE			4		6					
Stykkisholm, (Iceland)	28.49	723.6	28.53	724.7	34.7	1.5	96	S			8		8					Snowing
Thorshavn, (Faröe)	29.11	739.4	29.15	740.3	48.4	9.1	96	SW			4		10					Raining
Vestervig	29.80	756.8	29.97	761.1	41.0	5.0	84	Calm			0		0					

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

Alençon, Normal School	29.81	757.1	30.37	771.4	48.2	9	66	W			1		2		W	0	0	Slightly cl'dy	Collignon, Director.
Amiens, Normal School	30.12	765.0	30.23	767.8	40.4	8	84	WSW			2		0			0.150	3.8	Clear	Bonvarne, Director.
Avignon, Normal School	30.05	763.2	30.13	765.2	55.4	13	55	N			3		0			0	0	Very clear	Mr. Giraud, Director.
Bar-sur-Seine	29.69	754.1	30.28	769.0	43.9	6.6	65	N			2		8kn		N	0.575	14.6	Very cloudy	C. Saillard.
Beaumette Obs'y (Angers)	30.16	766.0	30.32	770.2	47.7	8.7	81	N	0	0					N	0.839	21.3		Albert Cheux.
Beauvais	30.00	761.9	30.29	769.4	45.3	7.4	65	NNW			1		2		NW	0	0	Slightly cl'dy	Normal School.
Besançon	29.35	745.6	30.27	768.9	43.7	6.5	92	WSW			3		8		W	0.606	15.4	Very cloudy	Normal School.
Bourg-en-Bresse	29.08?	738.6?	29.98?	761.6?	46.2	7.9	97	NW			2		5cn		NW	0.24	6.	Cloudy	Normal School.
Bourges, Normal School	29.56	750.7	30.12	765.0	45.3	7.4	83	SW			6		5		SE	0.295	7.5	Cloudy	A. Wagner, Director.
Brest, Naval Observatory	30.04	763.0	30.26	768.6	51.3	10.7	82	SW			2		3k		SW	0.177	4.50		The Staff.
Carcassonne, Normal School	29.89	759.1	30.31	769.8	55.0	12.8	93	W			2		2		NW	0.024	0.6	Slightly cl'dy	Vateau, Director.
Caen	30.19	766.9	30.27	768.9	49.6	9.8	74	W			2		1		NNW	0.217	5.5	Clear	Normal School.
Chartres, Normal School	29.69	754.0	30.26	768.7	50.0	10		N			2		4		S	0.67	17.		Lequin, Director.
Châlons-sur-Marne, N. Sch'l	29.92	759.9	30.24	768.2	44.6	7.0	74	N			3		2k		N	0.394	10.0	Slightly cl'dy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.89	733.8	30.28	769.0	47.1	8.4	59	NW			2		8		NW	0.039	1.0	Very cloudy	Allnard, Director.
Commercy, Normal School	29.89	744.1	30.21	767.3	40.3	4.6	77	W			4		5		W	0.256	6.5	Cloudy	Dr. Goulet, Director.
Commune de Gréasque*	28.91	734.4	30.06	763.4	52.0	11.1	61	NW			6		2		NW	0.04	1.	¼ Covered	V. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	30.12	765.0	30.33	770.4	48.9	9.4	94	W			2		0			0.512	13.0	Clear	Mouillot, Director.
Le Mans, Normal School	30.00	762.1	30.32	770.1	46.8	8.2	70	NNE			2		2		NE	0.768	19.5	Slightly cl'dy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.30	744.2	30.24	768.1	45.7	7.6	77	NE			6		5		S	0.280	7.10	Cloudy	Voudez, Director.
Lorient, Naval Observatory	30.20	767.1	30.39	769.6	50.0	10.0	76	N			1		5		NE	0	0	½ covered	T. Carré, Director.
Mâcon, Normal School	29.52	749.9	30.23	767.9	47.7	8.7	81	NW			4		5		NW	0.094	2.4	Cloudy	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	29.10	739.2	30.10	766.8	39.6	4.2	77	NNW			6		5		SSE	0	0	Cloudy	Normal School.
Nismes, Normal School	29.89	759.1	30.09	764.3	57.6	14.2	48	N			6		0			0.04	1.	Clear	Boyer, Director.
Orleans, Normal School	29.90	759.5	30.29	769.3	46.4	8	73	NW			2		5		N	0.094	2.4	Cloudy	Bernard, Director.
Paris, Observatory	30.04	762.9	30.28	769.2	47.1	8.4	61	NW			1		3k		NW	0.341	8.65	Slightly cl'dy	National Observatory.
Privas	29.11	739.5	30.19	766.8	55.4	13	50	N			6		1		N	0	0	Clear	Normal School
Rochefort, Naval Obs'y	30.32	770.1	30.35	770.9	45.7	7.6	91	NE			3		8		SW	0	0	¾ Covered	Lt. Decante, Director.
Rouen, Normal School	30.20	767.1	30.29	769.3	48.0	8.9	64	WSW			2		5		W	0.103	4.9	Cloudy	F. Lucard, Director.
Tarbes, Normal School	29.16	740.6	30.27	768.9	44.6	7	74	NW			2		0			0	0	Clear	T. Hugues, Director.
Villefranche	29.36	745.7	30.09	764.3	47.3	8.5	86	NNE			3		2		NW	0	0	Slightly cl'dy	Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.82	757.3	29.84	758.0	78.8	26										0.24	6.		L'Abbé Marchési.
Marseilles, Observatory			30.04	762.9	55.4	13.0	48	NW			4–6		1			0	0		The Staff.
Mont-Louis	25.01	635.3	30.33	770.3	47.7	8.7	41	W	18.6	8.33			3		WNW	0.016	0.4		Mr. Falguère.
Nice			29.84	758.0	56.7	13.7	65	E			3		1			0	0	Clear	Dr. A. Niepce.
Paris, Montsouris Obs'y	29.99	761.7	30.26	768.7	46.2	7.9	66	NW			3		2		NNW	0.319	8.1		Marié Davy, Director.
Perpignan			30.19	766.7	59.9	15.5	60	N	33.6	15.00			2		NW	0.685	17.4		Dr. Fines.
Pic du Midi, (Summit,) H. P.	21.33	541.8			32.0	0.0		NW			2		5					Rainy	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.08	676.1			36.0	2.2		NNW			2		5			0.409	10.4	Rainy	Gen'l de Nansouty.
Saint Maur, (near Paris)	30.11	764.8	30.28	769.0	46.4	8.0	65	NW			1		1		WNW	0	0	Clear	E. Renou.
Toulouse, Observatory	29.60	751.9	30.34	770.5	51.8	11.0	76	NW			1		7			0	0		The Staff.
Tours	30.12	765.0	30.32	770.0	47.1	8.4	70	NW			2		0			0.728	18.5	Clear	C. Marquet.
Versailles, (near Paris)			30.28	769.0	47.1	8.4	75	N			2		2			0.358	9.09	Clear	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.28	769.0	30.30	769.6	46.6	8.1	93	N	0.4	0.2			10k			0	0	Covered	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published. At Mirecourt and Rochefort the cloud directions are apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg																			Prof. Dr. Hoh.
Berlin	29.82	757.4	30.00	762.0	41.4	5.2	82	SE			1		8			0	0		Prof. Arndt.
Breslau	29.45	747.9	29.98	761.4	37.9	3.3	93	ESE			3		10			0	0		Royal University Obs'y.
Carlsruhe	29.60	751.8	30.04	762.9	42 4	5.8	70	NW			2		10			0.551	14.0	Raining	Albert Senz.
Cassel	29.41	747.0	30.04	763.1	39.0	3.9	89	NNW			7		8	WNW		0.179	4.54		Dr. H. Möhl.
Crefeld	29.92	760.0	30.08	764.1	43.7	6.5	71	NW			5		2			0.24	6.		Director Lose.
Emden	30.15	765.8	30.19	766.7	42.3	5.7	87	N			2		1			0	0		Prof. Prestel.
Frankfort on the Main	29.71	754.5	30.08	764.1	40.6	4.8		WNW			1		9			0.346	8.8		Physical Society.
Friedrichshafen	28.62	726.9	30.10	764.4	40.3	4.6	84	NNW			9		10	NW		0.154	3.9	Rain,snow,gr'pel	M. Wilhelm.
Hamburg	29.97	761.3	30.04	763.1	40.8	4.9	89	NNE			3		9k	SW		0.004	0.1	Cloudy	Captain F. Hegemann.
Kiel	30.03	762.8	30.05	763.2	42.1	5.6	84						10			0	0		Prof. G. Karsten.
Königsberg, (Prussia)	30.02	762.5	30.10	764.5	39.2	4.0	91	SW								0.002	0.06	Cloudy	Prof. E. Luther.
Kösiin			30.05	763.2	34 7	1.5		Calm			0		8			0	0		H. Müller.
Leipsic, Observatory	29.49	749.1	29.92	759.9	40.6	4.8	84	E			1		9			0	0		Prof. Bruhns.
Memel, Naval School	30.07	763.7	30.11	764.9	34.9	1.6	98	SE			1		10					Dense fog	Reinbrech von Skalweit.
Neufahrwasser	30.08	763.9	30.09	764.3	40.1	4.5	86	S			1		10			0	0		A. Lothes.
Posen	29.78	756.4	30.08	764.0	36.7	2.6	98	SE			2					0	0	Covered	Dr. Magener.
Strassburg Obs., (in Alsace	29.60	751.9	30.17	766.3	43.5	6.4	58	N			5		6	W		0.524	13.30	Rain; graupel	Dr. Schur.
Stuttgart	29.10	739.0	30.07	763.8	38.3	3.5	78	W			5		10			0.311	7.9		Prof. Schoder.
Treves, (Trier)	29.50	749.4	30.03	762.7	41.5	5.3	75	W			6		9			0.151	3.83	Foggy	Prof. Flesch.
Weissenburg, (Bavaria)	28.41	721.6	29.92	760.0	37.2	2.9	90	WNW	9	4			10		WNW	0.535	13.6	Raining	Dr. Von Bebber.
Wustrow, Naval School	30.05	763.3	30.09	764.3	39.9	4.4	92	ESE			3		10			0	0	Covered	E. F. Schütz.
German Naval Series.																			

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet: Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4. Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines, Königsberg, Posen and Wustrow in cubic zolls. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.37	745.9	29.76	755.9	57.4	14.1		N			3							⅛ Clear	Dr. J. F. J. Schmidt.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and wind-force; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.88	758.9	29.93	760.2	73.9	23.3	72	WSW	18.0?	8.0?			1			0	0	D. clouds	
Deesa	29.48	748.6	29.96	760.9	78.0	25.6	44	Calm								0	0	Blue sky	
Bombay	29.85	758.1	29.89	759.1	80.9	27.2	72	WSW	9.0	4.0			0			0	0	Blue sky	
Poona	27.88	708.1	29.89	759.1	77.8	25.4	67	S					7		SW	0	0	D. clouds	
Lahore	29.21	741.8	29.98	761.6	59.6	15.3	82	Calm	1.1	0.5			10			0.12	3.0	Cloudy	
Belgaum	27.37	695.3	29.91	759.6	77.6	25.3	56	SSE	4.0	1.8			4		SSE	0	0	D. clouds	
Bangalore																			
Roorkee	29.04	737.7	29.87	761.3	67.4	19.7	50	NW	1.4	0.6			1			0	0	Dust-storm	
Agra	29.35	745.5	29.93	760.2	72.7	22.6	68	E								0	0		
Trichinopoly																			
Nagpur	28.94	735.2	30.02	762.4	68.6	20.3	80	N	4.9	2.2			9		NE	0	0	D. clouds	
Madras																			
Lucknow	29.65	753.0	30.03	762.8	70.3	21.3	77	Calm	1.3	0.6			5	ESE		0	0	D. clouds	
Allahabad	29.69	754.1	30.01	762.2	68.4	20.2	79	Calm	0.4	0.2			10			0	0	Overcast	
Patna	29.86	758.4	30.05	763.2	67.4	19.7	57	W	0.8	0.4			10	W	W	0	0	Overcast	
Hazaribagh	27.98	710.7	30.06	763.4	64.6	18.1	66	Calm	4.5	2.0			10		W	0.03	0.8	Showery	
Cuttack	29.97	761.2	30.05	763.3	71.5	21.9	66	NNE	2.6	1.2			4			0	0	D. clouds	
Calcutta (Alipore)	30.06	763.4	30.08	763.9	66.0	18.9	74	NNW	4.0	1.8			10			0.01	0.3	Drizzling	
Goalpara	29.64	752.9	30.05	763.2	63.7	17.6	88	E	1.7	0.8			3	SW		0	0	D. clouds	
Chittagong	29.94	760.5	30.04	762.9	69.8	21.0	82	Calm	3.0	1.3			4			0	0	Blue sky	
Sibsagar	29.75	755.6	30.10	764.6	58.3	14.6	97	ENE	0.6	0.3			7			0.11	2.8	D. clouds	
Rangoon																			
Jubbulpore	28.63	727.2	30.04	763.1	65.0	18.3	74	SE	2.6	1.2			9	SE	S	0.57	14.5	Overcast	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	21.98	558.4	29.94	760.5	23.5	— 4.7	89	ENE	.....	.....	8	.....	10	.....	.....	†11.814	†300.0	.....	Ab. Dom. Mongini.
Stelvio	21.95	557.5	29.87	758.8	23.7	— 4.6	.....	SSW	.....	.....	4	.....	10	.....	.....	0	0	.....	Signora Ernesta Manfredi.
Udine	29.43	747.5	29.85	758.1	47.5	8.6	74	SE	1.3	0.6	.....	.....	7	.....	.....	0	0	.....	Prof. Giovanni Clodig.
Padua	29.74	755.3	29.85	758.1	45.7	7.6	89	NW	1.3	0.6	.....	.....	5	W	.....	0	0	.....	Prof. Dott. Lorenzoni.
Vicenza	29.66	753.1	29.85	758.1	48.0	8.9	82	SE	0.7	0.3	.....	.....	1	.....	.....	0	0	.....	Conte Alm. Da Schio.
Verona	29.65	753.1	29.88	758.9	51.4	10.8	73	W	0	0	.....	.....	8	.....	.....	0	0	.....	Dott. B. Bertoncelli.
Bergamo	28.55	725.1	29.90	759.4	47.1	8.4	73	SSW	.....	.....	2	.....	2	.....	.....	0	0	.....	Prof. Triulini Carlo.
Domodossola	28.84	732.6	29.90	759.4	46.6	8.1	76	N	.....	.....	1	.....	8	.....	.....	0.236	6.0	.....	Prof. Giuseppe Calza.
Milan	29.37	746.1	29.91	759.7	47.5	8.6	.....	WNW	.....	.....	4	.....	4	WSW	.....	0.024	0.6	.....	Ab. Gio. Capelli.
Pavia	29.57	751.0	29.92	760.0	43.0	6.1	94	W	.....	.....	4	.....	10	.....	.....	0.165	4.2	.....	Prof. Gio. Cantoni.
Moncalieri	29.01	736.9	29.94	760.5	45.5	7.5	80	N	0	0	.....	.....	9	E	.....	0	0	.....	Prof. P. F. Denza.
Mondovi	27.98	710.6	29.93	760.3	42.8	6.0	73	NW	.....	.....	4	.....	1	NW	.....	0	0	.....	Prof. D. C. Bruno.
Porto Maurizio	29.66	753.4	29.89	759.1	55.2	12.9	52	E	.....	.....	4	.....	5	NW	.....	0	0	.....	Prof. L. Vassallo.
Genoa	29.72	755.0	29.90	759.4	54.3	12.4	57	N	8.7	3.9	.....	.....	.....	.....	.....	0	0	.....	Prof. G. M. Garibaldi.
Piacenza	29.64	752.8	29.90	759.5	44.2	6.8	88	WNW	15.0	6.7	.....	.....	6	N	.....	0.087	2.2	.....	Dott. G. Manzi.
Parma	29.56	750.7	29.87	758.7	44.6	7.0	94	NNW	.....	.....	4	.....	10	.....	.....	0.035	0.9	.....	Prof. P. Pigorini.
Florence	29.66	753.3	29.92	759.9	43.7	6.5	95	W	.....	.....	2	.....	10	.....	.....	0.241	6.1	.....	Cav. F. Meucci.
Leghorn	29.77	756.2	29.86	758.4	45.5	7.5	97	NNE	8.0	3.6	.....	.....	10	NE	.....	0.500	12.7	.....	Prof. P. Monte.
Siena	28.65	727.7	29.87	758.8	43.0	6.1	99	WNW	0	0	.....	.....	10	.....	.....	0.331	8.4	.....	Prof. L. Toscani.
Urbino	28.35	720.0	29.93	760.1	44.6	7.0	90	SW	.....	.....	2	.....	10	.....	.....	0.118	3.0	.....	Prof. P. Serpieri.
Pesaro	29.81	757.7	29.88	759.0	47.7	8.7	94	W	6.3	2.8	.....	.....	10	W	.....	0.055	1.4	.....	Prof. Luigi Guidi.
Ancona	29.74	755.4	29.85	758.2	48.9	9.4	84	Calm	0	0	.....	.....	10	.....	.....	0.146	3.7	.....	Prof. F. DeBosis.
Grosseto	29.78	756.3	29.89	759.2	50.7	10.4	94	SSE	.....	.....	2	.....	10	S	.....	0.157	4.0	.....	Avv. P. Ponticelli.
Rome	29.74	755.5	29.92	760.0	46.0	7.8	96	E	0	0	.....	.....	10	.....	.....	0.331	8.4	.....	Prof. P. A. Secchi.
Naples, O. U.	29.77	756.1	29.97	761.2	57.2	14.0	67	W	.....	.....	2	.....	10	NW	.....	0	0	.....	Prof. L. Palmieri.
Lecce	29.74	755.5	30.00	761.9	57.6	14.2	77	NE	9.4	4.2	.....	.....	3	NE	.....	0.008	0.2	.....	Prof. C. De Giorgi.
Cosenza	29.10	739.1	30.00	761.9	55.8	13.2	75	W	0	0	.....	.....	9	.....	.....	0.047	1.2	.....	Prof. F. D. Conti.
Cagliari	29.78	756.4	29.97	761.3	60.3	15.7	75	NW	.....	.....	4	.....	10	NW	.....	0	0	.....	Prof. A. Pacinotti.
Riposto, (Sicily)	.....	.....	.....	.....	60.8	16.0	52	SW	.....	.....	2	.....	6	.....	.....	0	0	.....	Prof. F. Cafiero.
Palermo	29.75	755.6	30.00	762.1	57.9	14.4	62	W	11.2	5.0	.....	.....	10	.....	.....	0.004	0.1	.....	Prof. G. Cacciatore.
Caltanissetta	27.99	711.0	29.95	760.8	50.7	10.4	72	WNW	.....	.....	4	.....	5	S	.....	0	0	.....	Prof. A. Pagani.
Syracuse	29.89	759.1	29.96	761.0	57.2	14.0	61	W	.....	.....	2	.....	5	NW	.....	0.008	0.2	.....	Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.40	746.8	29.96	760.9	52.0	11.1	79	NW	1.3	0.6	.....	.....	10	.....	.....	0.862	21.9	.....	Prof. F. Brioschi.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,543.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Siena, 348.5 m., or 1,143.3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft. † Unmelted snow.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Tokei (Yeddo)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	The Observatory.
Tokei (Yeddo) University	30.12	765.0	30.23	767.8	43.5	6.4	88	W	1	0.4	.....	.....	8ks	.....	.....	0	0	Cloudy	Prof. P. V. Veeder.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Aguascalientes	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	I. N. Marin, M. D.
Córdoba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	C. Peña, M. D.
Cuernavaca	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	L. Castillo, A. E.
Guadalajara	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. L. Perez.
Guanajuato	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. V. Fernandez.
Leon	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. M. Leal.
Mexico	23.24	590.3	30.40	762.2*	41.2	5.1	100	Calm	0	0	.....	0	Haze	.....	.....	0	0	Hazy	Central Observatory. N. N.
Orizaba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	I. Orozco, M. D.
Orizaba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. V. de Leon, M. E.
Pabellon, (Aguascalts)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. B. Gonzalez.
Puebla	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. C. Velazquez.
Toluca	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. F. R. Bayly.
Tlacotalpam	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	G. Barroeta, M. D.
San Luis Potosi	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. J. Rossell.
Vera-Cruz	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. A. Bonilla, M. E.
Zacatecas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	P. Spina. [M. M. D. D.
Puebla, (Catholic Institute)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Tena, F. L. Páramo
Morelia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,740.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,290 m., or 7,512.9 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabell m, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m,, or 8,611.8 ft.; San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m. *Probably 772.2 mm.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	30.21	767.3	30.21	767.3	45.5	7.5	.....	NW	.....	.....	4	.....	.....	.....	.....	0.138	3.5	.....	
Groningen	30.02	762.5	30.08	763.9	42.8	6.0	.....	N	.....	.....	2	.....	.....	.....	.....	0.303	7.7	.....	
Helder	30.11	764.7	30.11	764.7	44.8	7.1	.....	NW	.....	.....	4	.....	.....	.....	.....	0	0	.....	
Hellevoetsluis	.....	.....	30.17	766.3	45.5	7.5	75	NW	.....	.....	4	.....	.....	.....	.....	.....	.....	.....	
Utrecht	30.09	764.3	30.14	765.5	44.6	7.0	71	NW	.....	.....	3	.....	2	.....	.....	0.173	4.4	Light cloudy	H. v d Brink.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temi-erature of the Air. Fahrenheit.	Temi-erature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	29.78	756.3	29.83	757.7	38.5	3.6	87	S	19.7	8.8	.....	.....	4	.....	.....	0.398	10.1	.....	
Brône	29.54	750.4	29.58	751.4	39.7	4.3	84	S	20	13	.....	.....	10	.....	.....	.....	.....	Light rain....	
Christiania	29.74	755.5	29.89	759.3	36.5	2.5	87	SW	0	0	.....	.....	0	.....	.....	0.252	6.4	.....	
Tromsö	29.51	749.5	29.55	750.6	39.9	4.4	53	SW	9	4	.....	.....	7	.....	.....	0	0	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	30.11	764.9	30.31	769.9	52.7	11.5	80	NNW	6.9	3.1	.....	.....	5	.....	.....	0	0	.....	
Campo Major	29.17	740.8	30.20	767.1	58.1	14.5	65	ENE	7.4	3.3	.....	.....	6	WNW	.....	0	0	.....	Dr. J. A. Sampaio.
Funchal, (Madeira)	30.08	764.1	30.15	765.9	66.0	18.9	70	SW	6.3	2.8	.....	.....	10	.....	.....	0.201	7.4	Raining.....	Dr. A. M. R. dos Santos.
Lisbon, Observatory	29.80	756.9	30.16	766.0	58.1	14.5	77	ENE	9.8	4.4	.....	.....	9	SSW	.....	0	0	.....	Capt. D. A. de Cunha.
Ponta Delgada, (Azores)	30.24	768.2	30.32	770.0	59.0	15.0	58	NNW	1.3	0.6	.....	.....	3	.....	.....	0	0	.....	The Staff.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

Naval Series. Vessels.	Sea or swell. Height scale 0–9	Sea or swell. Direction from—		
S. S. Bartholomew Dias	.....	.....	.....	R. A. T. Pinha, Com'd't.
S. S. India	.....	.....	.....	A. D. Pedroso, Com'd't.
S. S. Mindello	.....	.....	.....	J. F. R. R. Bastos, Com'd't.
S. S. Sado	.....	.....	.....	A. N. P. Sampaio, Com'd't.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the cooperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.61	752.1	30.05	763.2	38.5	3.6	97	E	4	2	.....	.....	10	.....	.....	.....	.....	Foggy	Astronomical Obs.
Wilna	29.76	755.9	30.21	767.2	28.2	— 2.1	89	S	2	1	.....	.....	10	.....	.....	.....	.....	Heavy clouds	Astronomical Obs.
Dorpat	29.93	760.2	30.19	766.8	25.9	— 3.4	87	SSE	2	1	.....	.....	5n;cs	.....	.....	.....	.....	.....	Prof. Dr. Welhratich.
St. Petersburg	30.18	766.6	30.20	767.0	27.0	— 2.8	80	SE	13	6	.....	.....	1s	.....	.....	.....	.....	.....	Central Physical Obs.
Kuopio	29.71	754.5	30.04	763.0	32.9	0.6	100	S	18	8	.....	.....	10	.....	.....	.....	.....	.....	Ch. Forsten.
Kieff	29.48	748.8	30.15	765.9	28.2	— 2.1	94	ESE	7	3	.....	.....	10n;ks	.....	.....	.....	.....	Rain and fog	Physical Cabinet.
Nikolaiev	30.00	761.9	30.07	763.7	33.1	0.6	92	E	13	6	.....	.....	10n	.....	.....	.....	.....	.....	Kurdakof.
Kertch	29.99	761.7	30.01	762.2	41.5	5.3	86	NE	7	3	.....	.....	2	.....	.....	.....	.....	Light clouds	Lagorio.
Moscow	29.92	760.0	30.63	775.4	12.9	—10.6	93	S	7	3	.....	.....	4ks	.....	.....	.....	.....	.....	Meteorological Obs.
Lugan	30.04	763.1	30.26	768.5	33.4	0.8	68	E	22	10	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Archangel	30.15	765.8	30.17	766.3	29.8	— 1.2	96	S	13	6	.....	.....	10	.....	.....	.....	.....	.....	Ogorodnikof.
Tiflis	28.87	733.2	30.34	770.7	40.5	4.7	60	Calm	0	0	.....	.....	2k	.....	.....	.....	.....	.....	Physical Observatory.
Astrakhan	30.50	774.6	30.41	772.5	34.5	1.4	64	E	2	1	.....	.....	0	.....	.....	.....	.....	.....	Sebastianof.
Kasan	30.24	768.0	30.53	775 5	18.5	— 7.5	63	Calm	0	0	.....	.....	3	.....	.....	.....	.....	.....	Physical Cabinet.
Orenburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Tschernischef.
Ekaterinburg	29.15	740.4	30.16	766.0	20.5	— 6.4	87	WNW	22	10	.....	.....	8ck	.....	.....	.....	.....	.....	Meteorological Obs.
Nukuss	30.24	768.0	30.48	774.3	28.0	— 2.2	75	NNE	4	2	.....	.....	0	.....	.....	.....	.....	.....	
Kasaly	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Tashkend	28.79	731.2	30.63	777.9	27.3	— 2.6	87	Calm	0	0	.....	.....	3	.....	.....	.....	.....	.....	Bobrof.
Barnaul	29.60	751.9	30.17	766.3	15.6	— 9.1	85	SW	4	2	.....	.....	10	.....	.....	.....	.....	.....	Michelson.
Yeniseisk	29.35	745.6	29.69	754.2	20.1	— 6.6	86	SW	9	4	.....	.....	10	.....	.....	Blank	Blank	Snowing.....	Meteorological Obs.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Marks.
Oorga	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Usolzef.
Krotkowo*	30.06	763.5	30.57	776.4	18.9	— 7.3	65	SW	2	1	.....	.....	0	.....	.....	.....	.....	.....	Mossin.
Peking, (China)	30.14	765.6	30.28	769.2	22.5	— 5.3	52	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Cand. Fatjanow.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Physical Observatory.
Vladivostock	30.11	764.7	30.15	765.7	20.7	— 6.3	84	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Meteorological Obs.
Nikolaievsk, on the Amoor	.....	.....	.....	.....	—13.9	—25.5	.....	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

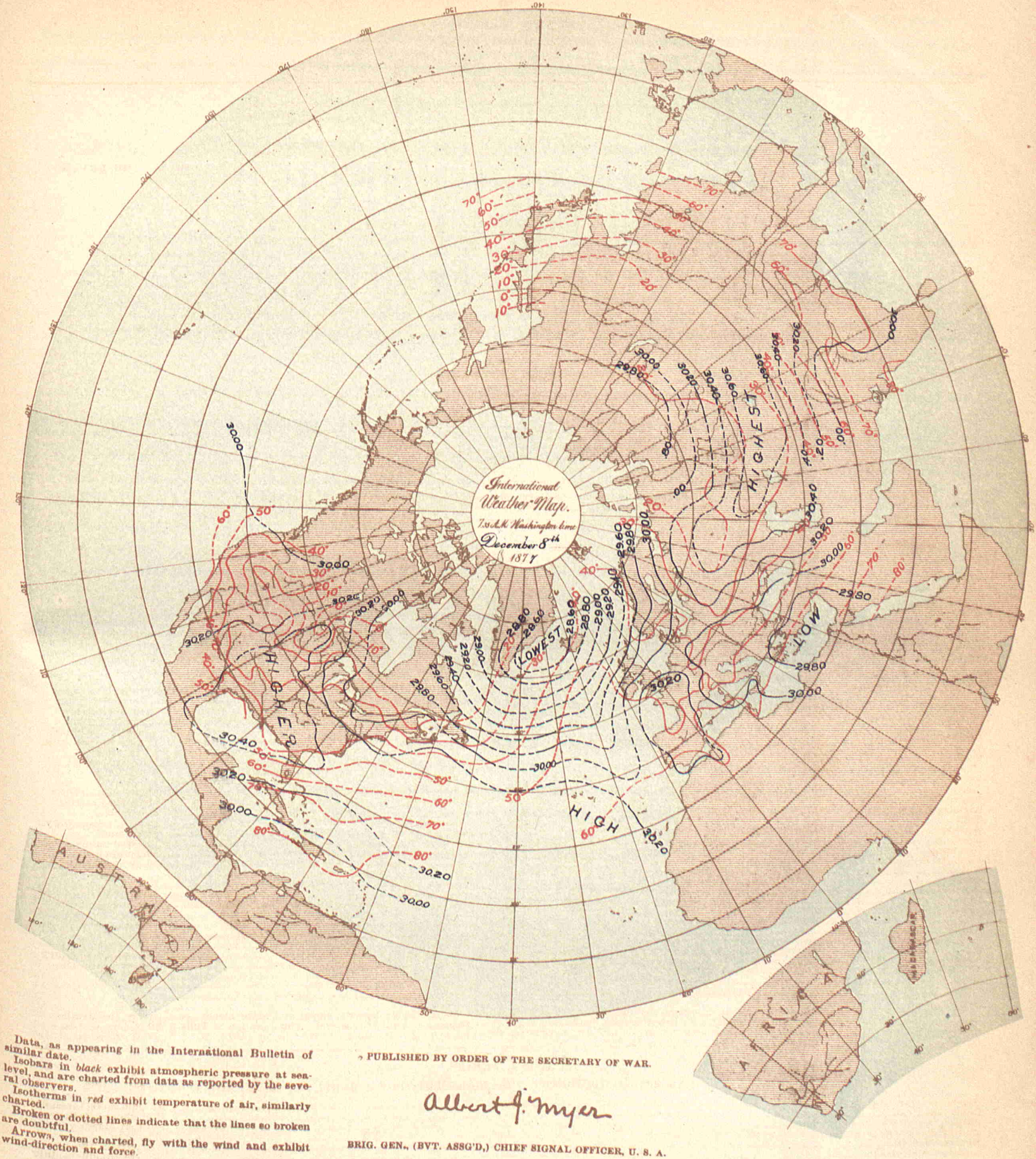
NOTE.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall; for Krotkowo, the barometer reduced to freezing but not to sea-level. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft. * N. 53° 47′, E. 38° 34′.

SPANISH SERIES.

Furnished by the cooperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Rave, Director.
Bilbao, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Manuel de Naveran
Burgos, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Domingo Martin y Perez.
Madrid, Royal Observatory	28.03	711.9	30.30	769.6	52.2	11.2	76	N	4.5	2.00	.....	2	2	NW	.....	0	0	Clouds.....	The Staff.
Murcia, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Olayo Diaz, Director.
Santiago, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I	30.16	766.0	30.23	767.7	68.3	20.2	92	NNE	11.6	5.2	.....	.....	10n	.....	.....	0.496	12.6	Raining.....	Benito Vines, S. J.
San Fernando, Naval Obs'y	30.13	765.4	30.23	767.9	63.1	17.3	78	E	1.6	0.7	.....	0	3	.....	SW	0	0	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, I.W.	.....	.....	29.91	759.8	76.6	24.8	94	SW	0	0	.....	1c	9ck	SW.	SW	0.571	14.50	D. clouds.....	Leonardo de Tejeda, Chief of Engineers.

NOTE.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

SWEDISH SERIES.

Furnished by the cooperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

STATIONS.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Barometer: Corrected for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.80	759.2	29.93	760.2	33.1	0.6	.....	S	.....	.....	2	.....	10	.....	.....	0.039	1.0	.....	
Umea	29.79	756.6	29.84	757.9	37.4	3.0	100	S	.....	.....	4	.....	10	.....	.....	0.228	5.8	Light rain...	
Hernosand	29.78	756.5	28.84	757.8	38.6	3.8	93	SE	.....	.....	2	.....	10	.....	.....	0.224	5.7	.....	
Stockholm	29.80	756.8	29.97	761.3	39 2	4.0	84	SW	.....	.....	2	.....	5	.....	.....	0.028	0.7	.....	
Wisby	29.97	761.1	30.02	762.6	39.6	4.2	97	WSW	.....	.....	4	.....	5	.....	.....	0.012	0.3	.....	
Sub-Series.																			
Upsala	29.88	758.9	29.95	760.8	36.9	2.7	92	SSW	8.5	3.8	.....	.....	2	SW	.....	0.006	0.15	.....	Dr. Hildebrandsson.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the cooperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.75	730.2	30.19	766.9	47.5	8.6	53	NE	.....	.....	2	.....	9	.....	.....	0.339	8.6	Covered.....	The Observatory.
Zurich	28.47	723.0	30.16	766.0	37.8	3.2	82	NW	.....	.....	4	.....	10	.....	.....	0.079	2.0	Covered.....	The Observatory.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—For Geneva the corresponding departures from the normal values are: Barometer, +3.0 mm; Thermometer, +5.3 cent.; Relative Humidity, —26 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	29.82	757.5	51.1	10.6	86	NNW	19	8.5	.....	.....	10	.....	NE	0.394	10.0	.....	The Observatory.
Fao, (Persian Gulf)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salonica	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Valona	.....	.....	29.89	759.2	56.1	13.4	.....	W	.....	.....	2	.....	0	.....	.....	.....	.....	.....	B. Stefanidès.
Varna	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0	Clear.....	A. Bertrand.
Sub-Series.																			Imperial Observatory.
Beirut, (Syria,) Lee Obs'y	29.60	751.8	29.70	754.3	63.0	17.2	68	SW	.....	.....	1	.....	10n	.....	SW	0.54	13.7	Raining.....	Prof. C. V. A. Van Dyck.

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	29.96	761.0	30.03	762.7	18.6	— 7.4	71	E	7.5	3.4	.....	5	.....	.....	.....	.....	.....	.....	Hon. J. Ferguson.
Brockville, Ontario	29.62	752.3	29.93	760.2	32	0.0	.....	SW	3	1.3	.....	.....	10s	.....	SW	0.15	3.8	Cloudy.....	W. R. Bigg.
*Chatham, N. B	30.00	762.0	30.07	763.8	16	— 8.9	93	S	3	1.3	.....	2cs	2ks	SW	SW	0	0	Fair.....	G. A. Blair.
Charlottetown, P. E. Island.	30.10	764.5	30.14	765.5	23	— 5.0	77	W	7	3.1	.....	0	0	.....	.....	0	0	Clear.....	H. J. Cundall, C. E.
Cornwall, Ontario	29.67	753.6	29.87	758.7	31.8	— 0.1	88	SW	.....	.....	2	.....	10s	.....	.....	0	0	Cloudy.....	James Smith, M. A.
Dalhousie, N. B	29.99	761.7	30.02	762.5	12.8	—10.7	100	W	.....	.....	1	.....	.....	.....	.....	0	0	Gloomy.....	H. A. Johnson.
Esquimault, B. C	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.22	5.6	.....	W. H. Bevis.
*Father Point, Quebec	29.92	760.0	29.94	760.5	18	— 7.8	84	S	16	7.2	.....	6ck	6s	W	W	0	0	Cloudy.....	J. McWilliams.
Fredericton, N. B	30.05	763.3	30.12	765.0	18.7	— 7.4	89	W	4.0	1.8	.....	.....	10s	.....	.....	Inap.	Inap.	Cloudy.....	Prof. Harrison.
*Fort Garry, Manitoba	29.41	747.0	30.32	770.1	10	—12.2	92	N	2	0.9	.....	Haze	2ks	N	N	0	0	Fair.....	James Stewart.
Goderich, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	H. J. Strang, M. A.
Granton, Ontario	28.88	733.5	30.04	763.0	28.2	— 2.1	100	W	.....	.....	1	.....	10n	.....	.....	Inap.	Inap.	Snowing.....	James Grant.
*Halifax, N. S	30.02	762.5	30.17	766.3	22	— 5.6	93	Calm	0	0	.....	.....	10n	.....	.....	0	0	Threatening	F. Allison, M. A.
Hamilton, Ontario	29.65	753.1	30.04	763.0	31.5	— 0.3	90	W	.....	.....	2	10cs	0	W	.....	0	0	Cloudy.....	Geo. Dickson, M. A
Heart's Content, N. F	29.93	760.2	29.95	760.7	26	— 3.3	62	W	.....	.....	6	8k	3ks	W	.....	0	0	Cloudy.....	E. Weedon.
*Kingston, Ontario	29.62	752.3	29.96	761.0	33	0.6	92	W	3	1.3	.....	6cs	0	Calm	.....	0.08	2.0	Fair.....	S. Woods, M. A.
Little Glace Bay, N. S	30.11	764.8	30.15	765.8	24.5	— 4.2	.....	NW	8	3.6	.....	1k	.....	NW	.....	0	0	Clear.....	C. H. Rigby.
*Montreal, Quebec	29.68	753.9	29.89	759.2	30	— 1.1	89	S	10	4.5	.....	.....	10n	.....	.....	0.10	2.5	Light snow..	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.20	741.7	29.92	760.0	28	— 2.2	83	N	5	2.2	.....	5k	5ks	SW	SW	0.36	9.1	Cloudy	Rev. R. Mosley.
Peterboro, Ontario	29.19	741.4	29.97	761.2	32.2	0.1	73	W	.....	.....	2	.....	9ks	.....	.....	0	0	.....	J. F. Jeffers, B. A.
Port Dover, Ontario	29.33	745.0	30.05	763.3	32	0.0	91	W	8	3.6	.....	10k	0	SW	.....	0.01	0.3	Cloudy.....	H. Morgan.
Port Hastings, N. S	30.10	764.5	30.15	765.8	40.6	4.8	.....	W	3	1.3	.....	.....	.....	.....	.....	0.15	3.8	Fine.....	Peter Grant.
Port Stanley, Ontario	29.39	746.5	30.07	763.8	32	0.0	92	W	15	6.7	.....	.....	10n	.....	W	Inap.	Inap.	Cloudy.....	M. Payne.
*Quebec, Quebec	29.60	751.8	29.95	760.7	21	— 6.1	100	SW	2	0.9	.....	.....	10n	.....	SW	0.10	2.5	Heavy snow	Capt. Ashe, R. N.
*Rockliffe, Ontario	29.40	746.7	29.88	758.9	24	— 4.4	98	Calm	0	0	.....	.....	8s	.....	NW	0.04	1.0	Light snow..	W. H. McIntyre.
St. John, N. B	29.88	758.9	30.00	763.5	21	— 6.1	85	Calm	0	0	.....	.....	10s	.....	.....	0.20	5.1	Threatening	G. Murdock, C. E.
*Saugeen, Ontario	29.25	742.9	29.98	761.5	29	— 1.7	100	W	13	5.8	.....	.....	10n	.....	W	0.05	1.3	Light snow..	K. Stewart.
Stayner, Ontario	29.16	740.7	29.98	761.5	28	— 2.2	78	Calm	0	0	.....	8k	0	NW	.....	0.02	0.5	Fair.....	R. J. Cole.
Stratford, Ontario	28.70	729.0	30.04	763.0	28.0	— 2.2	84	W	10.0	4.5	.....	.....	10s	.....	.....	0.10	2.5	Cloudy.....	C. J. MacGregor, M. A.
*Sydney, C. B	30.15	765.8	30.18	766.6	25	— 3.9	72	SW	6	2.7	.....	0	0	.....	.....	Inap.	Inap.	Clear.....	T. C. Hill.
*Toronto, Ontario	29.60	751.8	30.00	762.0	32	0.0	85	W	5	2.2	.....	5ck	2ks	W	W	0.02	0.5	Cloudy.....	Magnetic Observatory.
Windsor, N. S	30.05	763.3	30.15	765.8	25.0	— 3.9	75	SW	4	1.8	.....	2c	2k	E	.....	0	0	Clear.....	Prof. John E. Oram.
Woodstock, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Montgomery.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	27.0	— 2.8	.....	W	.....	.....	.....	0	10ks	.....	.....	0	0	Fair.....	John Delany.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er. 0—10.	Clouds. Amount. Low'r. 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.81	757.2	30.05	763.3	32	0.0	79	SE	4	1.8		0	2s		Calm	0	0	Fair	
Alpena, Michigan	29.31	744.5	29.99	761.7	27	— 2.8	77	W	10	4.5		2ck	5s	NW	W	0.03	0.8	Fair	
Atlantic City, New Jersey	30.18	766.6	30.20	767.1	36	2.2	80	SW	8	3.6		2cs	0	SW		0	0	Clear	
Augusta, Georgia	30.22	767.6	30.42	772.7	31	— 0.6	89	Calm	0	0		5cs	Fog	SW	Calm	0	0	Foggy	
Baltimore, Maryland	30.17	766.3	30.22	767.6	36	2.2	70	SW	2	0.9		5c	Sm'e	SW	Calm	0	0	Fair	
Barnegat, New Jersey	30.16	766.1	30.18	766.6	32	0.0	79	W	8	3.6		2c	0	W		0	0	Fair	
Bismarck, Dakota	28.47	723.1	30.34	770.6	3	—16.1	73	Calm	0	0		0	0			0	0	Clear	
Boise City, Idaho	27.32	693.9	30.11	764.8	21	— 6.1	78	Calm	0	0		0	0			0	0	Clear	
Boston, Massachusetts	29.92	760.0	30.08	764.0	40	4.4	56	SW	10	4.5		1cs	Sm'e			0	0	Clear	
Brackettville, Texas	29.12	739.6	30.20	767.1	40	4.4	56	Calm	0	0		0	2s		Calm	0	0	Fair	
Breckenridge, Minnesota	29.30	744.2	30.43	772.9	3	—16.1	87	W	10	4.5		0	0			Inap.	Inap.	Clear	
Brownsville, Texas	30.34	770.6	30.41	772.4	52	11.1	93	E	6	2.7		0	0			0	0	Clear	
Buffalo, New York	29.26	743.2	29.98	761.5	34	1.1	90	W	16	7.2		0	5ks		W	0.03	0.8	Fair	
Burkes, Arizona					54	12.2	15	SE				0	10ks		W	0	0	Cloudy	
Burlington, Vermont	29.70	754.4	29.97	761.2	36	2.2	90	S	12	5.4			10s		S	0	0	Cloudy	
Cairo, Illinois	30.07	763.8	30.45	774.4	33	0.6	70	Calm	6	0		0	0			0	0	Clear	
Camp Grant, Arizona																			
Camp Verde, Arizona	26.85	682.0	30.34	770.6	36	2.2	53	NW				10c	0	W		0	0	Cloudy	
Campo, California																			
Cape Hatteras, N. Carolina	30.36	771.1	30.36	771.1	41	5.0	83	W	6	2.7		8cs	0	SW		0	0	Fair	
Cape Henry, Virginia	30.24	768.1	30.27	768.8	35	1.7	70	SW	9	4.0		0	0			0	0	Clear	
Cape Lookout, N. Carolina	30.35	770.9	30.36	771.1	48	8.9	55	W	2	0.9		10cs	0			0	0	Cloudy	
Cape May, New Jersey	30.18	766.6	30.21	767.3	42	5.6	65	SW	20	8.9		5c	0	W		0	0	Fair	
Charleston, South Carolina	30.35	770.9	30.42	772.7	42	5.6	74	W	2	0.9		8cs	0	Calm		0	0	Fair	
Cheyenne, Wyoming	24.14	613.1	30.08	764.0	38	3.3	25	W	6	2.7		0	2s		W	0	0	Fair	
Chicago, Illinois	29.47	748.5	30.20	767.1	28	— 2.2	88	W	16	7.2		0	0			0	0	Clear	
Cincinnati, Ohio	29.58	751.3	30.26	768.6	35	1.7	61	SW	2	0.9			Fog		Calm	0	0	Foggy	
Cleveland, Ohio	29.40	746.7	30.16	766.1	32	0.0	69	NW	19	8.5		0	8ks		NW	0	0	Fair	
Concho, Texas	28.44	722.4	30.26	768.6	25	— 3.9	38	Calm	0	0		0	0			0	0	Clear	
Corsicana, Texas	29.96	761.0	30.47	773.9	30	— 1.1	68	Calm	0	0		0	0			0	0	Clear	
Davenport, Iowa	29.69	754.1	30.38	771.6	26	— 3.3	76	W	8	3.6		0	0			0	0	Clear	
Denison, Texas	29.65	753.1	30.51	774.9	32	0.0	79	NE	1	0.4		0	0			0	0	Clear	
Denver, Colorado	24.93	633.2	30.15	765.8	30	— 1.1	59	SW	4	1.8		0	2s		Calm	0	0	Clear	
Detroit, Michigan	29.38	746.2	30.08	764.0	31	— 0.6	79	W	8	3.6			10s		SW	0	0	Cloudy	
Dodge City, Kansas	27.73	704.3	30.20	767.1	24	— 4.4	74	SW	1	0.4		0	0			0	0	Clear	
Dubuque, Iowa	29.58	751.3	30.33	770.4	22	— 5.6	72	NW	7	3.1			10s		Calm	0	0	Cloudy	
Duluth, Minnesota	29.53	750.0	30.26	768.6	21	— 6.1	85	NW	4	1.8			10s		NW	0.03	0.8	Cloudy	
Eagle Pass, Texas	29.60	751.8	30.40	772.1	34	1.1	70	Calm	0	0		1cs	0	Calm		0	0	Clear	
Eastport, Maine	30.01	762.2	30.08	764.0	36	2.2	52	SW	7	3.1			10s			0	0	Threatening	
Erie, Pennsylvania	29.31	744.5	30.05	763.3	33	0.6	89	SW	14	6.3			10n			Inap.	Inap.	Light snow	
Escanaba, Michigan	29.41	747.0	30.10	764.5	24	— 4.4	74	NW	11	4.9			10s		NW	Inap.	Inap.	Cloudy	
Florence, Arizona	28.41	721.6	30.01	762.2	55	12.8	68	E					10s		E	0	0	Threatening	
Fort Bayard, New Mexico	24.19	614.4	30.19	766.8	43	6.1	22	NE	12	5.4		0	0			0	0	Hazy	
Fort Craig, New Mexico	25.80	655.3			27	— 2.8	64	SW	2	0.9			10s		Calm	0	0	Cloudy	
Fort Gibson, Indian Ter	29.90	759.4	30.49	774.4	26	— 3.3	76	N	1	0.4		0	0			0	0	Clear	
Fort Griffin, Texas	29.13	739.9	30.49	774.4	28	— 2.2	77	NW	4	1.8		0	0			0	0	Clear	
Fort St. Michael, Alaska																			
Fort Sill, Indian Territory	29.19	741.4	30.39	771.9	30	— 1.1	78	N	12	5.4		0	0			0	0	Clear	
Galveston, Texas	30.43	772.9	30.47	773.9	50	10.0	86	E	4	1.8		0	0			0	0	Clear	
Grand Haven, Michigan	29.41	747.0	30.08	764.0	34	1.1	61	N	24	10.7			10s		N	0.03	0.8	Cloudy	
Indianapolis, Indiana	29.47	748.5	30.30	769.6	32	0.0	60	W	12	5.4		0	0			0	0	Clear	
Indianola, Texas	30.44	773.2	30.47	773.9	49	9.4	93	E	12	5.4		0	0			0	0	Clear	
Jacksboro, Texas	29.26	743.2	30.49	774.4	27	— 2.8	67	SE	1	0.4		1c	0	Calm		0	0	Clear	
Jacksonville, Florida	30.38	771.6	30.41	772.4	44	6.7	67	N	8	3.6		10k	0	SE		0	0	Cloudy	
Keokuk, Iowa	29.73	755.1	30.30	771.9	28	— 2.2	67	NW	6	2.7		0	0			0	0	Clear	
Key West, Florida	30.21	767.3	30.25	768.3	64.0	17.8	86	N	17	7.6			10s		Calm	0	0	Cloudy	
Kittyhawk, North Carolina	30.31	769.9	30.34	770.6	38	3.3	71	SW	15	6.7		5cs	0	SW		0	0	Fair	
Knoxville, Tennessee	29.38	746.2	30.44	773.2	31	— 0.6	68	SW	2	0.9		0	Sm'e			0	0	Smoky	
La Crosse, Wisconsin	29.49	749.0	30.28	769.1	23	— 5.0	73	NW	7	3.1		10cs	0	W		0.04	1.0	Cloudy	
La Mesilla, New Mexico	26.32	668.5	30.47	773.9	34	1.1	52	Calm	0	0			10s		Calm	0	0	Cloudy	
Laredo, Texas					39	3.9	73	Calm	0	0		0	0			0	0	Clear	
Leavenworth, Kansas	29.56	750.8	30.47	773.9	27	— 2.8	88	Calm	0	0		0	Fog			0	0	Clear	
Los Angeles, California	29.70	754.4	30.04	763.0	54	12.2	49	NW	3	1.3		0	2s		Calm	0	0	Clear	
Louisville, Kentucky	29.76	755.9	30.35	770.9	37	2.8	62	SW	8	3.6		0	Fog		Calm	0	0	Clear	
Lynchburg, Virginia	29.56	750.8	30.26	768.6	42	5.6	42	SW	2	0.9		1c	0	Calm		0	0	Clear	
Maricopa Wells, Arizona					52	11.1	35	E					10s		Calm	0	0	Cloudy	
Marquette, Michigan	29.34	745.2	30.08	764.0	24	— 5.0	73	W	14	6.3			10s		Calm	0	0	Cloudy	
Mason, Texas	28.73	729.7	30.60	777.2	38	3.3	7	Calm	0	0		0	0			0	0	Clear	
Memphis, Tennessee	30.14	765.5	30.48	774.2	35	1.7	80	NW	4	1.8		0	Fg:sm'		C;NW	0	0	Clear	
Milwaukee, Wisconsin	29.46	748.3	30.19	766.8	23	— 5.0	73	NW	18	8.0		0	5s		NW	0	0	Fair	
Mobile, Alabama	30.45	773.4	30.50	774.7	35	1.7	80	W	1	0.4		0	Sm'e			0	0	Clear	
Montgomery, Alabama	30.24	768.1	30.49	774.4	32	0.0	95	Calm	0	0		0	Fg:sm'		Calm	0	0	Foggy	
Morgantown, West Virginia	29.12	739.6	30.22	767.6	35	1.7	61	SW	12	5.4		0	0			0	0	Clear	
Mt. Washington, N. H.	23.46	595.9	29.82	757.4	8	—13.3	100	NW	54	24.1			10n		NW	0.10	2.5	Light snow	
Nashville, Tennessee	29.88	758.9	30.45	773.4	32	0.0	79	Calm	0	0		0	Haze		Calm	0	0	Clear	
New Haven, Connecticut	30.00	762.0	30.12	765.0	40	4.4	63	SW	10	4.5		0	0			0	0	Clear	
New London, Connecticut	30.09	764.3	30.14	765.5	30	3.9	73	SW	4	1.8		1cs	1s	W	W	0	0	Clear	
New Orleans, Louisiana	30.43	772.4	30.48	774.2	41	5.0	74	N	2	0.9			Fog		NE	0	0	Dense fog	
Newport, Rhode Island	30.06	763.5	30.12	765.0	42	5.6	66	SW	11	4.9		0	7ks		SW	0	0	Fair	
New York, New York	29.99	761.7	30.18	766.6	32	0.0	69	SW	10	4.5		2cs	Sm'e	Calm		0	0	Clear	
Norfolk, Virginia	30.24	768.1	30.31	769.9	35	1.7	80	SW	4	1.8		2c	Haze	Calm	Calm	0	0	Fair	
North Platte, Nebraska	27.34	694.4	30.12	765.0	18	— 7.8	84	SE	10	4.5		0	0			0	0	Clear	
Olympia, Washington Ter.	29.81	757.2	29.85	758.2	41	5.0	91	SW	2	0.9			Fog		Calm	0.06	1.5	Dense fog	
Omaha, Nebraska	29.29	744.0	30.46	773.7	25	— 3.9	75	NW	3	1.3		0	0			0	0	Clear	
Oswego, New York	29.65	753.1	29.98	761.5	38	3.3	67	S	7	3.1			10ks		NW	0.03	0.8	Threatening	
Pembina, Dakota	29.47	748.5	30.40	772.1	2	—16.7	86	W	5	2.2		0	0			0.19	4.8	Clear	
Philadelphia, Pennsylvania	30.16	766.1	30.21	767.3	38	0.6	79	SW	12	5.4		5c	8m';hz	W	Calm	0	0	Smoky & Hazy	
Phœnix, Arizona					56	13.3	19	Calm					10s		Calm	0	0	Cloudy	
Pike's Peak, Colorado	17.58	452.3	30.09	764.3	12	—11.1	23	W	16	7.2		8cs	0	S		0	0	Cloudy	
Pioche, Nevada	24.14	613.1	29.91	759.7	33	0.6	23	S	2	0.9		0	2s		Calm	0	0	Fair	
Pittsburg, Pennsylvania	29.32	744.7	30.17	766.3	35	1.7	70	W	15	6.7		5k	0	W		0	0	Fair	
Port Huron, Michigan	29.35	745.5	30.04	763.0	30	— 1.1	89	SW	8	3.6			10ks		S;W	Inap.	Inap.	Cloudy	
Portland, Maine	29.99	761.7	30.04	763.0	32	0.0	79	SW	9	4.0		8k	Haze	W		0	0	Cloudy	
Portland, Oregon	29.93	760.2	30.03	762.7	43	6.1	66	SE	3	1.3			10s		Calm	0.03	0.8	Cloudy	
Prescott, Arizona	24.87	631.7	30.23	767.8	43	6.1	43	NE					10s		NE	0	0	Cloudy	
Punta Rassa, Florida	30.28	769.1	30.30	769.6	57	13.9	75	N	12	5.4		0	10ks		N	0	0	Cloudy	
Red Bluff, California	29.75	755.6	30.13	765.3	35	1.7	80	N	2	0.9		0	0			0	0	Clear	
Rochester, New York	29.34	745.2	29.97	761.2	33	0.6	89	W	8	3.6		5k	0	W		0.01	0.3	Fair	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	OBSERVER.
Roseburg, Oregon	29.46	748.3	30.04	763.0	39	3.9	94	Calm	0	0	.....	.....	10s	.....	Calm	0	0	Cloudy	
Sacramento, California	30.06	763.5	30.15	765.8	35	1 7	80	N	4	1.8	.....	0	Sm'e	.....	Calm	0	0	Clear	
St. Louis, Missouri	29.91	759.7	30.53	775.4	33	0.6	61	W	9	4.0	.....	0	Sm'e	.....	.....	0	0	Clear	
St. Marks, Florida	30.42	772.7	30.44	773.2	34	1.1	90	N	6	2.7	.....	0	2s	.....	Calm	0	0	Clear	
St. Paul, Minnesota	29.32	744.7	30.21	767.3	17	— 8.3	83	NW	10	4.5	.....	0	0	.....	.....	0	0	Clear	
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salt Lake City, Utah	29.79	655.0	30.12	765.0	24	— 4.4	74	NW	4	1.8	.....	0	0	.....	.....	0	0	Clear.	
San Antonio, Texas	29.72	754.9	30.35	770.9	35	1.7	80	NE	3	1.3	.....	2c	0	Calm	.....	0	0	Clear	
San Diego, California	30.00	762.0	30.07	763.8	57	13.9	46	NE	4	1.8	.....	.....	10s	.....	Calm	0	0	Cloudy	
Sandusky, Ohio	29.45	748.0	30.16	766.1	34	1.1	61	W	16	7.2	.....	0	4s	.....	Calm	0	0	Fair	
Sandy Hook, New Jersey	30.14	765.5	30.17	766.3	38	3.3	71	SW	16	7.2	.....	2c	Haze	SW	.....	Inap.	Inap.	Fair	
San Francisco, California	30.05	763.3	30.11	764.8	49	9.4	78	W	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Santa Fé, New Mexico	23.47	596.1	30.01	762 2	26	— 3.3	63	NE	3	1.3	.....	0	Haze	.....	.....	0	0	Clear	
Savannah, Georgia	30.34	770.6	30.44	773.2	40	4.4	73	N	4	1.8	.....	5c	5cs	W	W	0	0	Cloudy	
Shreveport, Louisiana	30.28	769.1	30.52	775.2	33	0.6	80	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Smithville, North Carolina	30.36	771.1	30.40	772.1	40	4.4	73	W	6	2.7	.....	10cs	0	SW	.....	0	0	Cloudy	
Springfield, Massachusetts	29.88	758 9	30.02	762.5	34	1.1	69	S	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Stockton, Texas	27.33	694.2	30.33	770.4	30	— 1.1	57	SW	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Thatcher's Island, Mass	30.02	762.5	30.08	764.0	38	3.3	71	W	20	8.9	.....	1cs	0	W	.....	0	0	Hazy	
Toledo, Ohio	29.41	747.0	30.11	764.8	34	1.1	61	SW	14	6.3	.....	0	5s	.....	SW	0	0	Fair	
Tucson, Arizona	27.64	702.0	30.19	766.8	37	2.8	54	E	.....	.....	.....	.....	10n	.....	.....	0.03	0.8	Light rain	
Tybee Island, Georgia	30.39	771.9	30.42	772.7	40	4.4	91	NW	4	1.8	.....	8cs	0	W	.....	0	0	Fair	
Umatilla, Oregon	29.82	757.4	.....	.....	33	0.6	89	SE	8	3.6	.....	.....	10s	.....	Calm	0	0	Cloudy	
Vicksburg, Mississippi	30.26	768.6	30.54	775.7	37	2.8	71	Calm	0	0	.....	0	Sm'e	.....	Calm	0	0	Smoky	
Virginia City, Montana	24.32	617.7	29.80	756.9	29	— 1.7	78	SE	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Visalia, California	29.76	755.9	30.15	765.8	38	3.3	91	E	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Washington, D. C	30.12	765.0	30.24	768.1	32.5	0.5	75	S	4	1.8	.....	2c	Sm'e	SW	.....	0	0	Fair	
Wickenburg, Arizona	.....	.....	.....	.....	39	3 9	55	SE	.....	.....	.....	0	10ks	.....	Calm	0	0	Threatening	
Wilmington, N. Carolina	30.30	769.6	30.38	771 6	37	2.8	71	SW	4	1.8	.....	10cs	Sm'e	W	Calm	0	0	Cloudy	
Winnemucca, Nevada	25.75	654.0	30.11	764.8	19	— 7.2	85	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Wood's Holl, Mass	30.08	764.0	30.14	765.5	45	7.2	60	SW	12	5.4	.....	5ck	0	SW	.....	0	0	Fair	
Yankton, Dakota	29.13	739.9	30.58	776.7	9	—12.8	78	NW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Yuma, Arizona	29.87	758.7	30.07	763.8	60	10.0	53	Calm	0	0	.....	.....	10n	.....	.....	0.01	0.3	Raining	
Sub-Series.																			
York Factory, B. A	29.94	760.5	30.00	762.0	— 3.6	—19.4	83	N	14	6.3	.....	.....	9s	.....	.....	0.18	4.6	Snowing	J. Fortescue, W. Wood.
Havana, Cuba, W. I	30.16	766.1	30.18	766.6	69	20.6	95	NE	3.6	1.6	.....	.....	8n	.....	E	0.52	13.2	Light rain	Chas. Hasselbrink.
Kingston, Jamaica, W. I	30.10	764.5	30.11	764.8	79	26.1	86	Calm	0	0	.....	2c	2s	Calm	SE	0	0	.....	James Gall.
Navassa, W. I	29.86	758.4	29.94	760.5	80.5	26.9	.....	NE	5	2.2	.....	.....	.....	.....	.....	0	0	Fair	F. M Everett.
St. Thomas, W. I	.....	.....	.....	.....	83	28.3	83	E	3	1.3	.....	2c	2lc	E	.....	0.3	8.	.....	G. O. Gellich.
Paramaribo, D. Guiana, S. A	.....	.....	29.96	761.0	81	27.2	91	E	.....	.....	3	.....	8ks	.....	.....	0.210	5.33	Cloudy	C. J. Hering.
Batavia, Dutch Guiana, S. A	30.02	762.6	30.03	762.8	77.9	25.5	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0	½ Cloudy	Dr. H. Groot.
Medellin, Colombia, S. A	25.23	640.8	.....	.....	66.5	19.2	79	Calm	.....	.....	0	2c	1ks	.....	.....	0	0	Fair	Thomas Herran.
Honolulu, Oahu, H. I	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Daniel Smith.
Makawao, Maui, H. I	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo; for Batavia, the barometer reduced to freezing but not to sea-level. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,893 (?) ft., or 1,473.2 (?) m., Camp Verde 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573,4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,110.2 (?) ft., or 341.1 (?) m.; Makawao, 2,265 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Ploche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m. Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.67 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in; Ploche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard Mare Island, Cal.	30.08	764.0	44	6 7	41	5.0	83	SE	2	0.9	.....	.....	1s	.....	Calm	0	0	.....	.....	Clear.....	
Navy Yard, Pensacola, Fla.	30.49	774.4	.....	.....	38	3.3	81	NNW	3	1.3	.....	.....	0	.....	.....	0	0	.....	.....	Blue sky.....	
Navy Yard, Portsmouth, N.H	30.08	764.0	64	17.8	32	0.0	79	WSW	2	0.9	.....	.....	.....	.....	.....	0	0	.....	.....	Clear	
Naval Hospital, Yokohama, Japan.....	30.15	765.8	57	13.9	49	9.4	82	E	.....	.....	3	.....	4s;hz	.....	E	0	0	.....	.....	Fair	
Adams. Island Harbor, Chili.....	29.78	756.4	53	11.7	53	11.7	73	NNW	.....	.....	1	.....	4	.....	SW	Light	Light	None	.....	D. clouds.....	
Alert, Yokohama, Japan.....	30.24	768.1	.....	.....	54	12.2	93	NNW	.....	.....	1–2	.....	2	.....	N	.....	.....	Smooth	.....	Hazy.....	
Alliance, Constantinople, Turkey.	29.91	759.7	63	17.2	53	11.7	86	NE	.....	.....	3	.....	10	.....	N	.....	.....	.....	.....	Overcast.....	
Ashuelot. Shanghai, China.....	30.27	768.8	49	9.4	46	7.8	92	Calm	.....	.....	0	.....	10	.....	Calm	.....	.....	.....	.....	D. clouds.....	
Canonicus, New Orleans, La.....	30.38	771.6	39	3.9	39	3.9	100	Calm	.....	.....	0	.....	.....	.....	.....	.....	.....	.....	.....	Foggy	
Colorado, New York, N. Y.....	30.13	765.3	35	1.7	35	1.7	70	WSW	11	4.9	.....	.....	3	.....	WSW	0	0	.....	.....	Fair.....	
Despatch, Constantinople, Turkey.	29.95	760.7	85	29.4	52	11.1	86	NE	.....	.....	3–6	.....	10	.....	NE	.....	.....	.....	.....	Rainy.....	
Essex, S. 6° 22′, E. 11° 50′	29.85	758.2	83	28.3	85	29.4	92	SSW	.....	.....	2	.....	7	.....	.....	.....	.....	Long	SW	D. clouds.....	
Franklin, Norfolk, Va.....	30.38	771.6	36	2.2	36	2.2	99	WNW	4	1.8	.....	.....	3	.....	WNW	0	0	.....	.....	D. clouds.....	
Guard, Lisbon, Portugal.....	30.14	765.5	62	16.7	60	15.6	76	NNE	.....	.....	3	.....	9	.....	S	.....	.....	.....	.....	D. clouds.....	
Lackawana, Mare Island, Cal.....	30.18	766.6	.....	.....	48	8.9	85	NNW	.....	.....	1	.....	9	.....	N&W	.....	.....	.....	.....	Misty.....	
Marion, N. 42° 30,′ E. 9° 15′.....	29.82	757.4	62	16.7	62	16.7	72	NNW	.....	.....	2	.....	8	.....	NW	Light	Light	Smooth	NNW	D. clouds.....	
Michigan, Erie, Pa.....	29.54	750.3	64	17.8	32	0.0	69	W	.....	.....	4	.....	10	.....	W	.....	.....	.....	.....	Snowing.....	
Monocacy, Shanghai, China	30.17	766.3	59	15.0	49	9.4	93	NW	.....	.....	2	.....	10	.....	.....	Blank	Blank	.....	.....	D. clouds.....	
Monongahela, N. 20° 01′, E. 38° 12′.	29.95	760.7	85	29.4	85	29.4	92	SSE	.....	.....	6	.....	ck	.....	.....	.....	.....	Moderate.	S&E	D. clouds.....	
New Hampshire, Port Royal, S.C.....	30.50	774.7	.....	.....	44	6.7	76	WNW	2	0.9	.....	.....	5	.....	N&W	0	0	.....	.....	D. clouds.....	
Omaha, S. 18° 07′, W. 74° 49′.....	30.10	764.5	72	22.2	70	21.1	78	SE	22	9.8	.....	.....	9	.....	SE	0	0	Moderate.	SE	Cloudy.....	
Onward, Callao, Peru.....	30.02†	762.5†	73	22.8	70	21.1	90	SE	.....	.....	4	.....	4	.....	.....	.....	.....	Long	W	D. clouds.. ...	
Osceola, Norfolk, Va.....	30.35	770.9	60	15.6	37	2.8	71	SSW	.....	.....	1	.....	1	.....	Calm	.....	.....	.....	.....	D. clouds.....	
Palos, Shanghai, China	30.28	769.1	56	13.3	49	9.4	85	N&W	.....	.....	0–1	.....	10	.....	.....	.....	.....	.....	.....	Misty.....	
Plymouth. St. Thomas, W. I.....	30.08	764.0	84	28.9	82	27.8	91	E	.....	.....	0–1	.....	7	.....	E	.....	.....	Smooth	.....	Cloudy.....	
Powhatan, Norfolk, Va.....	.....	.....	.....	.....	39	3.9	100	SW	3.6	1.6	.....	.....	4	.....	.....	0	0	.....	.....	Pleasant.....	
Ranger, Shanghai, China.....	30.41	772.4	.....	.....	53	11.7	86	N	.....	.....	2	.....	10	.....	Calm	.....	.....	.....	.....	Overcast.....	
Rio Bravo, Brownsville, Texas.....	30.27	768.8	.....	.....	52	11.1	100	ENE	.....	.....	1	.....	4	.....	NNW	.....	.....	.....	.....	D. clouds.....	
Santee, Annapolis, Md	30.28	769.1	62	16.7	35	1.7	70	W	.....	.....	1	.....	4	.....	W	0	0	.....	.....	Clear.....	
Saratoga, Norfolk, Va.....	.....	.....	.....	.....	29	— 1 7	??	Calm	.....	.....	0	.....	.....	.....	.....	0	0	.....	.....	Clear	
St. Louis, League Island, Pa	30.05	763.3	34	1.1	34	1.1	100	W	10	4.5	.....	.....	3	.....	SE	0	0	.....	.....	Clear.....	
Swatara, Norfolk, Va.....	30.37	771.4	.....	.....	51	10.6	65	SW	.....	.....	2	.....	5	.....	W	.....	.....	.....	.....	D. clouds...	
Tennessee, Kobe, Japan.....	30.07	763.8	63	17.2	51	10.6	65	NE	7.7	3.4	.....	.....	10	.....	N&E	0	0	None	.....	D clouds....	
Trenton, Villefranche, France.....	29.92	760.0	.....	.....	64	17.8	62	SE	5	2.2	.....	.....	2	.....	S&E	0	0	.....	.....	D. clouds.....	
Vandalia, Villefranche, France.....	29.88	758.9	60	15.6	59	15.0	65	ESE	.....	.....	2	.....	3	.....	.....	.....	.....	.....	.....	D. clouds	
Wabash, Boston, Mass.....	30.10	764.5	51	10.6	36	2.2	70	SW	8	3.6	.....	.....	3	.....	SW	0	0	.....	.....	D. clouds.....	
Wyoming, Washington, D. C.....	30.50†	774.7†	41	5.0	35	1.7	.....	WSW	.....	.....	2	.....	6	.....	.....	.....	.....	.....	.....	Hazy..	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. The position given for the Plymouth is that at noon, local time, instead of that at 7:35 a. m., Washington time.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Character.	Direction from—		
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama, N. 33° 10′ 42″, W. 118° 54′ 10″			29.89	759.2	65	18.3	94	NW			2		3		NW	Light	NW	D. clouds	Capt. Howard.
S. S. City of Peking, N. 36° 33′, W. 139° 10′			30.06*	763.5*	62	16.7	100	WSW			6		10		Calm	Heavy	WSW	Raining	Lt. Z. L. Tanner, U.S.N.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio, Hong-Kong, China			30.09	764.3	72	22.2		ENE			3		4		ENE			D. clouds	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

NOTE.—The originals give the wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. *Aneroid.

WHITE STAR LINE MARINE SERIES.																			
Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.																			
S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.																			
S. S. Belgic																			Capt. John Metcalf.
S. S. Gaelic, N. 31° 40′, E. 140° 40′			29.99*	761.7*	72	22.2	100	ESE			5		kn		NE	Smooth	W	Raining	Capt. W. H. Kidley
S. S. Oceanic																			Capt. H. Parsell.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. *Aneriod.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.																			
Furnished by the coöperation of A. Schumacher & Co., Agents.																			
S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig																			Capt. K. Undütsch.
S. S. Nürnberg, N. 27° 58′, W. 59° 36′			30.27	768.8	77.5	25.3	78	E			2		c		ESE	Smooth	WNW	Blue sky	Capt. A. Jaeger.
S. S. Ohio, N. 48° 53′, W. 32° 57′			29.72	754.9	48.5	9.2	67	SW			7		ks		SW	High	SW	Squally	Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, nor distinguish between upper and lower clouds.

UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Lo'wr	Upper.	Lower.	Character	Direction From—		
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second	0—10.	0—10.	0—10.	From—	From—				
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, N. 44° 01′, W. 57° 10′			30.21*	767.3*	40	4.4	??	W			7		2		W	Heavy	NW		Captain Sargent.
S. S. Ohio, Philadelphia, Pa.			30.23	767.8	34	1.1	79	W			1		3		W			Clear.	Captain Morrison.
S. S. Pennsylvania, Liverpool			30.04†	763.0†	53	11.7	??	WNW			4		7		WNW			Cloudy	Captain Harris.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. *Aneroid. † Corrected for temperature and elevation, instrumental error not known.

RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

S. S. Nederland																			Capt. Randle.
S. S. Switzerland																			Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

S. S. Hibernian																			
S. S. Scandinavian, Off Cape Ballard, N. F.			29.91	759.7	25	—3.9		WSW			4		7		SSW	Mod'ate	WSW	Snowing	Capt. W. Richardson.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, Kennebunk, Maine			30.06	763.5	40	4.4	86	W	2	0.9			0					Clear.	Capt. James Jorgensen.

NOTE.—The originals for the schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg'd.) Chief Signal Officer. U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON DECEMBER 9, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:48 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.

1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:18 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.

1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours	.....	.....	30.00	761.9	66.2	19.0	60	Calm	.....	.....	0	.....	2	.....	.....	0	0	Fair	Michel.
Algiers	.....	.....	29.93	760.3	62.2	16.8	85	NW	.....	.....	1	.....	2	.....	.....	0	0	Fair	Peter.
La Calle	.....	.....	29.93	760.3	61.2	16.2	61	NW	.....	.....	3	.....	6	.....	.....	0	0	Cloudy	Fleury.
Tunis	.....	.....	29.87	758.6	61.0	16.1	56	NW	.....	.....	5	.....	6	.....	.....	0.016	0.4	Cloudy	Jacques.
Sfax	.....	.....	29.97	761.2	59.0	15.0	.....	W	.....	.....	3	.....	1	.....	.....	.....	.....	Very fair	Husson.
Saida	.....	.....	30.03	762.8	65.8	18.8	30	SSW	.....	.....	1	.....	3	.....	.....	0	0	Pretty fair	Millot.
Tebessa	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Bassières.
Geriville	.....	.....	30.05	763.3	50.0	10.0	92	WNW	.....	.....	2	.....	2	.....	.....	0	0	Fair	Lemaillot.
Laghouat	.....	.....	30.05	763.2	69.8	21.0	27	Calm	.....	.....	0	.....	2	.....	.....	0	0	Fair	Guyot.
Biskra	.....	.....	29.97	761.2	71.1	21.7	31	NW	.....	.....	3	.....	4	.....	.....	0	0	Cloudy	Kuntz.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 800? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m.; or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann. Director of the Imperial and Royal Central Meteorological Institute at Vienna.

Agram	29.52	749.7	30.08	764.1	43.5	6.4	59	NE	.....	.....	4	.....	10	.....	.....	0	0	.....	Prof. Ivan Stozir
Cracow, I. R. Observatory	29.59	749.4	30.32	770.0	30.9	— 0.6	85	NE	.....	.....	2	.....	10	.....	.....	0	0	.....	Dr. Wierzbiski.
Eperies	29.26	743.1	30.10	766.7	31.1	— 0.5	75	N	.....	.....	4	.....	10k;s	.....	.....	0	0	.....	Julius Mikolik.
Gratz	28.84	732.5	30.13	765.4	41.7	5.4	77	SW	.....	.....	2	.....	5	.....	.....	0.142	3.6	.....	Andreas Rospini.
Hermannstadt	28.52	724.3	29.98	761.5	39.2	4.0	77	SE	.....	.....	1	.....	4	.....	.....	0	0	.....	Prof. Reissenberger.
Kremsmünster	28.87	733.2	30.26	768.7	37.0	2.8	93	W	.....	.....	2	.....	10	.....	.....	0	0	.....	Prof. C. Wagner.
Lemberg	29.15	740.3	30.19	766.9	28.4	— 2.0	98	S	.....	.....	1	.....	10	.....	.....	0	0	.....	Dr. T. Stanecki.
Pola	29.82	757.3	29.93	760.2	50.4	10.2	47	NE	.....	.....	4	.....	3ks	.....	.....	0.098	2.48	.....	I.R.Hydrographic Office
Szathmar	29.58	751.3	30.06	763.4	41.6	5.3	71	E	.....	.....	2	.....	2	.....	.....	0	0	.....	Johann Tamas, S. J.
Szegedin	29.73	755.1	30.02	762.5	38.5	3.6	83	NW	.....	.....	3	.....	8	.....	.....	0	0	.....	Karl Stancel.
Trieste	29.93	760.3	30.04	762.9	50.5	10.3	42	E	.....	.....	2	.....	0	.....	.....	0	0	.....	P. Busin.
Vienna	29.47	748.6	30.20	767.0	40.3	4.6	71	N	.....	.....	3	.....	10	.....	.....	0.079	2.0	.....	I. R. Central Met. Obs'y
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

Arlon	28.75	730.2	30.32	770.1	34.7	1.5	81	N	.....	.....	2	.....	8	.....	.....	0	0	.....	Prof. M. Passau.
Brussels	30.08	763.9	30.28	769.2	41.4	5.2	79	WNW	.....	.....	0	3	.....	.....	.....	0	0	.....	Royal Observatory.
Furnes	30.21	767.2	30.23	767.8	43.3	6.3	99	SW	.....	.....	2	.....	3	.....	.....	0	0	Light fog	M. E. de Cae.
Maeseyck	30.18	766.5	30.31	769.8	36.1	2.3	94	NW	.....	.....	0	.....	2	.....	.....	0	0	.....	M. Pierrot.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Aberdeen	29.75	755.6	29.85	758.2	45.6	7.6	.....	S	15	6.7	.....	.....	9	.....	.....	0	0	Overcast.....	W. Boswell.
Ardrossan	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	William McNeil.
Armagh, Observatory	.....	.....	29.81	757.2	49.3	9.6	.....	S	23	10.3	.....	.....	.....	.....	.....	.....	.....	.....	S. Call, for Dr. Robi nson
Bidston, (Liverpool Obs.)	.....	.....	30.02	762.5	42.7	5.9	.....	ESE	15	6.7	.....	.....	10	.....	.....	.....	.....	Overcast.. ..	John Hartnup.
Birr Castle, (Parsonstown)	.....	.....	29.83	757.7	50.5	10.3	.....	SSW	.....	.....	1	.....	10	.....	.....	.....	.....	Misty	J. Dreyer.
Bradford, Yorkshire	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. McLandsborough.
Bridgetown, (Barbados)	29.91	759.7	29.94	760.5	80.0	26.7	.....	NE	.....	.....	1	.....	2	.....	.....	0.01	0.3	.....	Pvt. G. W. Roberts, A.
Cambridge, Observatory	.....	.....	30.17	766.3	47.0	8.3	.....	S	.....	.....	1	.....	10	.....	.....	.....	.....	D. clouds....	H. Todd. [H. C.
Cardington	.....	.....	30.15	765.8	47.6	8.7	.....	S	.....	.....	1	.....	7	.....	.....	.....	.....	Overcast	John McLaren.
Chatham, School M. E	30.09	764.3	30.22	767.6	44.2	6.8	.....	W	.....	.....	1	.....	7	.....	.....	.....	.....	Blue sky.....	Lt. W. G. Morris, R. E.
Dartmoor	28.62	726.9	30.12	765.0	42.8	6.0	.....	SE	.....	.....	4	.....	4	.....	.....	.....	.....	Gloomy.....	Alexander Watt.
Davos Platz (Switzerland)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Francis Redford, M. A.
Donaghadee	29.81	757.2	29.84	757.9	48	8.9	.....	SW	.....	.....	6	.....	10	.....	.....	.....	.....	Overcast.....	J. Mac Gowan.
Dover	30.19	766.8	30.22	767.6	46	7.8	.....	SSW	.....	.....	3	.....	4	.....	.....	.....	.....	⅜ clouded...	J. Costello.
Eccles, (near Manchester)	.....	.....	30.05	763.3	45.0	7.2	.....	SE	1.8	0.8	.....	.....	10	.....	.....	.....	.....	Gloomy.....	Thomas Mackereth.
Falmouth, Observatory	29.83	757.7	30.06	763.5	49.2	9.6	.....	ESE	.....	.....	4	.....	10	.....	.....	.....	.....	Overcast....	The Staff.
Fort Napier, (Natal)	27.49	698.2	29.70	754.4	75.4	24.1	.....	SE	.....	.....	2	.....	10	.....	.....	.....	.....	Overcast.....	Pvt. G. Salmon, A.H. C.
Free Town, (Sierra Leone)	.....	.....	29.87	758.7	88	31.1	.....	Calm	.....	.....	0	.....	3	.....	.....	.....	.....	D. clouds....	
Galway, Queen's College	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	29.89	759.2	29.94	760.5	60.5	15.8	.....	W	.....	.....	5	.....	10	.....	.....	Blank	Blank	Gloomy.....	Corpl. C. Aitken, A.H.C.
Glasgow, Observatory	29.62	752.3	29.83	757.7	47.0	8.3	.....	NNE	.....	.....	4	.....	10	.....	.....	.....	.....	Raining.....	D. G. Maclean.
Great Yarmouth	30.19	766.8	30.20	767.1	45	7.2	.....	SSW	.....	.....	1	.....	5	.....	.....	.....	.....	Misty.....	G. T. Watson.
Greenwich, Royal Obs'y	30.01	762.2	30.18	766.6	50.0	10.0	.....	SSW	.....	.....	1	.....	4	.....	.....	.....	.....	D. clouds....	The Staff, for G. B. Airy.
Guernsey	29.90	759.4	30.12	765.0	46.0	7.8	.....	SE	.....	.....	3	.....	0	.....	.....	.....	.....	Blue sky.....	Dr. S. E. Hoskins, F.R.S.
Helston	.....	.....	30.03	762.7	51	10.6	.....	SE	.....	.....	4	.....	6	.....	.....	0	0	D. clouds....	M. P. Moyle.
Holyhead	29.90	759.4	29.95	760.7	48	8.9	.....	SSW	.....	.....	5	.....	10	.....	.....	.....	.....	Misty.....	John Tilston.
Jersey	29.88	758.9	30.18	766.6	44.9	7.2	.....	SE	.....	.....	4	.....	7	.....	.....	.....	.....	D. clouds....	J. Fisher.
Kew, Observatory	.....	.....	30.18	766.6	53.8	12.1	.....	S	16	7.2	.....	.....	6	.....	.....	.....	.....	D. clouds....	The Staff.
Kingstown	29.87	758.7	29.90	759.4	50	10.0	.....	SSE	.....	.....	5	.....	10	.....	.....	.....	.....	Overcast.....	George Mitchell.
Leicester, Museum	.....	.....	30.12	765.0	43.3	6.3	.....	SW	.....	.....	2	.....	8	.....	.....	.....	.....	D. clouds....	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.63	752.6	29.71	754.6	60.2	15.7	.....	W	.....	.....	4	.....	6	.....	.....	.....	.....	D. clouds....	Sgt. Fred. Travis, A. H.
Nairn	29.24?	742.7?	29.33?	745.0?	50	10.0	.....	SW	.....	.....	1	.....	8	.....	.....	.....	.....	¾ clouded...	W. D. Penny. [C.
Nassau, (Bahamas)	.....	.....	30.10	764.5	73.0	22.8	.....	NE	.....	.....	7	.....	8	.....	.....	.....	.....	D. clouds....	C. S. Duncombe.
Nottingham, Observatory	29.91	759.7	30.11	764.8	47.3	8.5	.....	S	.....	.....	3	.....	7clk;k	.....	SW	0.009	0.23	D. clouds..	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.56	750.8	30.09	764.3	45.0	7.2	.....	S	.....	.....	3	.....	9	.....	.....	.....	.....	D. clouds....	Rev. Stephen Whitty
Oxford, Radcliffe Obs'y	.....	.....	30.14	765.5	47	8.3	.....	S	.....	.....	1	.....	7	.....	.....	.....	.....	D. clouds....	Mr. Lucas.
Plymouth	30.01	762.2	30.09	764.3	48.0	8.9	.....	SE	.....	.....	4	.....	7	.....	.....	.....	.....	D. cloud	John Merrifield.
Roche's Point	29.82	757.4	29.89	759.2	50	10.0	.....	S	.....	.....	6	.....	10	.....	.....	.....	.....	Raining.....	W. Kennedy.
Saint Ann's Head	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	John C. Walker.
Sandwick Manse, (Orkneys)	.....	.....	29.73	755.1	45.9	7.7	.....	S	20	8.9	.....	.....	10	.....	.....	.....	.....	Misty.....	Rev. C. Clouston, LL. D
Scutari, Cemetery, (Turkey)	.....	.....	29.74	755.4	46.0	7.8	.....	N	.....	.....	3	.....	10	.....	.....	.....	.....	Drizzling....	Sergt. W. H. Lyne.
Sheffield	29.80	756.9	30.09	764.3	45.9	7.7	.....	SW	.....	.....	1	.....	5	.....	.....	.....	.....	D. clouds....	W. F. Cooper.
Silloth Rectory	29.89	759.2	29.92	760.0	47.3	8.5	84	S	.....	.....	3	.....	10	.....	.....	0	0	Overcast....	Rev. F. Redford, M. A.
Stonyhurst, Observatory	.....	.....	.....	.....	43.3	6.3	.....	S	.....	.....	2	.....	10	.....	.....	0.440	11.18	Drizzling....	Rev. S. J. Perry.
Stornoway, Lews C. (Hebr.)	.....	.....	29.59	751.6	48	8.9	.....	SSW	.....	.....	6	.....	10	.....	.....	.....	.....	Raining.....	John Smith.
Stratfield Turgiss	29.93	760.2	30.15	765.8	47.8	8.8	.....	S	.....	.....	1	.....	3	.....	.....	.....	.....	Blue sky.....	Rev. C. H. Griffith, F.M.S.
Thurso	.....	.....	29.70	754.4	47	8.3	.....	S	.....	.....	3	.....	8	.....	.....	.....	.....	Gloomy.....	John Trotter.
Truro, Royal Institution	.....	.....	30.05	763.3	50	10.0	.....	SE	.....	.....	6	.....	10	.....	.....	.....	.....	Gloomy.....	W. Newcombe.
Valencia, Observatory	.....	.....	29.76	755.9	53.1	11.7	.....	SW	36	16.1	.....	.....	10	.....	.....	.....	.....	Raining.....	The Staff.
SUB-SERIES.																			
Calf of Man, (Isle of Man)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Henry Mercer.
Cape Good Hope, Obs'y	30.04	763.0	30.08	764.0	76.0	24.4	41	S	14	6.3	.....	8	6	.....	.....	.....	.....	.....	The Staff, for E. J. Stone.
Hobart Town, (Tasmania)	.....	.....	30.16	766.1	55.0	12.8	66	SW	.....	.....	3	.....	0	.....	.....	0.01	0.3	.....	Francis Abbott, F.R.A.S.
Leith, Restalrig Park	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Andrew Gibb.
Mauritius, Observatory	29.86	758.4	30.05	763.2	79.8	26.6	64	ENE	13.0	5.8	.....	6	4	WNW	E	0	0	Squally.....	C. Meldrum.
Melbourne, Observatory	30.22	767.6	30.31	769.9	53.7	12.1	70	SSE	9	4.0	.....	.....	6	.....	.....	0.11	2.8	Fine.....	R. L. J. Ellery.
Monach Light-house, (Hebrides)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Youngclause.
North Unst, (Shetland Is.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Robert Burnet.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series: 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m.

MARINE SERIES. VESSELS.	Sea or swell. Height scale 0—9	Sea or swell. Direction from—																	
S. S. Algeria, N. 43° 30', W. 51° 0'	10*	NNW	30.07	763.8	42	5.6	.....	SSE	.....	.....	4	.....	10	W	WNW	.....	.....	Overcast.....	Capt. W. Watson.
S. S. Batavia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. J. E. Mouland.
Ship Camperdown	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. A. T. Miller.
Brig Catherine	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. Adam Smith.
Barque Celeste	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. D. F. McKechnie.
S. S. Hibernia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. W. R. Cato
Barque Maroon	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. A. T. Brown.
Ship Mikado	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. C. C. Prehn.
S. S. Seine	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. H. Manning.
Barque Sorata	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. Jas. J. Price.
Schooner Traveller	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. Alex Simpson.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
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.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. *Feet

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	BAROMETER. Corrected for instrum'tal error and temperature. Inches.	BAROMETER. Corrected for instrum'tal error and temperature. Millimeters.	BAROMETER. Reduced to sea-level. Inches.	BAROMETER. Reduced to sea-level. Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Upper. From—	CLOUDS. Direction. Lower. From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	WEATHER.	OBSERVER.
San José	26.20	665.5			67.1	19.5	86	NE			5	2ck	4sd		NE	0	0		Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	30.26	768.7	30.31	769.9	40.3	4.6	90	Calm			0		10					Foggy
Funöe	30.25	768.3	30.27	768.8	41.0	5.0	94	S			4		7					
Godthaab, (Greenland)	29.19	741.5	29.24	742.6	11.1	—11.6	75	ENE			2		8					
Stykkisholm, (Iceland)	28.71	729.3	28.76	730.4	31.8	— 0.1	96	SW			6		8					Snowing
Thorshavn, (Faröe)	29.48	747.6	29.47	748.5	43.7	6.5	78	SW			2		7					
Vestervig	30.00	762.1	30.17	766.4	42.6	5.9	97	S			6		10					

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the cooperation of the Director of the Paris Observatory, and the respective observers.

Alençon, Normal School	29.72	754.9	30.27	768.9	48.2	9	35	SW			1		2		SW	0	0	Slightly cl'dy	Collignon, Director.
Amiens, Normal School	30.19	766.8	30.30	769.6	39.9	4.4	81	E			2		0			0	0	Clear	Bonvarne, Director.
Avignon, Normal School	29.98	761 4	30.06	763.4	45.5	7.5	57	N			3		0			0	0	Clear	Mr. Giraud, Director.
Bar-sur-Seine	29.65	753 1	30.24	768.2	37.9	3.3	85	NNE			2	2c		E		0	0	Slightly cl'dy	C. Saillard.
Beaumette Obs'y (Angers)	29.97	761.1	30.13	765.2	43.5	6.4	82	E	5.8	2.6					N	0	0		Albert Cheux.
Beauvais	29.96	760.9	30.26	768.5	39.2	4	85	NE			1		0			0	0	Clear	Normal School.
Besançon	29.28	743.7	30.21	767.3	39.2	4	77	NE			4		2		NE	0	0	Slightly cl'dy	Normal School.
Bourg-en-Bresse	29.26	743.3	30.18	766.6	39.7	4.3	62	N			2	5c		N		0	0	Cloudy	Normal School.
Bourges, Normal School	29.55	750.6	30.13	765.3	34.9	1.6	96	NE			2		1		NE	0	0	Clear	A. Wagner, Director.
Brest, Naval Observatory	29.79	756.7	30.01	762.2	46.9	8.3	75	SSE			4		7		SSE	0	0		The Staff.
Carcassonne, Normal School	29.61	752.2	30.03	762.8	48.2	9	67	W			4		5		NW	0	0	Partly cl'dy	Vateau, Director.
Caen	30.11	764.8	30.19	766.7	45.0	7.2	86	SSE			2		1		NNW	0	0	Clear	Normal School.
Chartres, Normal School	29.61	752.1	30.19	766.8	46.0	7.8		E			2		0			0	0	Clear	Lequin, Director.
Châlons-sur-Marne, N. Sch'l	29.93	760.2	30.26	768.6	39.2	4.0	83	NE			2	2c				0	0	Slightly cl'dy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.77	730.7	30.17	766.4	39.4	4.1	66	NE			1		1			0	0	Clear	Alluard, Director.
Commercy, Normal School	29.35	745.6	30.27	768.8	37.0	2.8	89	WSW			2		2		WSW	0	0	Slightly cl'dy	Dr. Goulet, Director.
Commune de Grénesque*	28.92	734.5	30.06	763.5	53.1	11.7	37	N			1		0			0	0	Clear	[illegible], Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	29.94	760.4	30.15	765.9	47.5	8.6	50	N			4		0			0	0	Clear	Mouillot, Director.
Le Mans, Normal School	29.90	759.4	30.22	767.6	42.1	5.6	97	SE			4		2		SE	0	0	Slightly cl'dy	Poirrier, Director.
Lons-Le-Saulnier, N.School	29.19	741 5	30.18	765.3	40.1	4.5	75	NE			6		0			0	0	Clear	Voudez, Director.
Lorient, Naval Observatory	30.02	762.6	30.13	765.2	46.0	7.8	61	E			4		2		E	0	0	¼ covered	T. Carré, Director.
Mâcon, Normal School	29.44	747.8	30.16	766.0	39.6	4.2	80	NNE			4		0			0	0	Clear	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	29.08	738.5	30.16	766.1	36.7	2.6	86	NW			6		1		SE	0	0	Clear	Normal School.
Nismes, Normal School	29.90	759.5	30.11	764 8	46.8	8.2	75	N			6		2		S	0	0	Slightly cl'dy	Boyer, Director.
Orleans, Normal School	29.82	757.5	30.21	767.4	41.0	5	71	E			2		2		E	0	0	Slightly cl'dy	Bernard, Director.
Paris, Observatory	30.00	761.9	30.24	768 2	41.0	5.0	71	E			1		0			0	0	Hazy	National Observatory.
Privas	29.04	737.6	30.14	765.5	47.3	8.5	68	N			2		1		NW	0	0	Clear	Normal School
Rochefort, Naval Obs'y	30.07	763.6	30.10	764.4	46.4	8.0	75	E			5		1		W	0	0	Clear	Lt. Decante, Director.
Rouen, Normal School	30.17	766.4	30.26	768.6	39.2	4.0	71	WSW			1		0			0	0	Clear	F. Lucard, Director.
Tarbes, Normal School	29.09	738.8	30.16	766.7	50.0	10	74	SW			2		0			0	0	Clear	T. Hugues, Director.
Villefranche	29.42	747.3	30.17	766.2	38.7	3.7	80	NNE			1		2		NW	0	0	Slightly cl'dy	Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.78	756.3	29.80	757.0	78.8	26										0.51	13.		L'Abbé Marchési.
Marseilles, Observatory			30.04	762.9	56.7	13.7	53	W			1		5			0	0	Partly cl'dy	The Staff.
Mont-Louis	24.80	629.9	30.11	764.9	45.7	7.6	38	SW	7.4	3.33			1		NW	0	0		Mr. Falguère.
Nice			29.99	761.7	55.4	13.0	55	Calm			0		0			0	0	Clear	Dr. A. Niepce.
Paris, Montsouris Obs'y	29.95	760.8	30.23	767.8	41.5	5.3	69	SE			2		0			0	0		Marié Davy, Director.
Perpignan			30.06	763.4	52.3	11.3	41	SE	3.7	1.67			2		NW	0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.	21.13	536.7			38.3	0.7		SW			1		2					Clear	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.48	570.9			48.2	9.0		SW			1		3			0	0	Clear	Gen'l de Nansouty.
Saint Maur, (near Paris)	30.07	763.8	30.24	768.0	42.8	6.0	76	E			1	1c		NW	E	0	0	Clear	E. Renou.
Toulouse, Observatory	29.32	744.8	30.05	763.2	45.9	7.7	63	NE			1		1			0	0		The Staff.
Tours	29.97	761.1	30.16	766 1	42.8	6.0	70	E			1		0			0	0	Clear	C. Marquet.
Versailles, (near Paris)			30.24	768.0	43.2	6.2	62	SE			1		0			0.069	0.22	Clear	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.45	773.4	30.48	774.1	40.6	4.8	82	NW	3.1	1.4			10k			0	0	Covered	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published. At Mirecourt and Rochefort the cloud directions are apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Grénesque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer, corrected for instrum'tal error and temperature. Inches.	Barometer, corrected for instrum'tal error and temperature. Millimeters.	Barometer, reduced to sea-level. Inches.	Barometer, reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg																			Prof. Dr. Hoh.
Berlin	30.19	766.8	30.37	771.4	38.8	3.8	83	E			1		7			0	0		Prof. Arndt.
Breslau	29.82	757.4	30.35	771.0	36.3	2.4	82	NE			2		10			0	0		Royal University Obs'y.
Carlsruhe	29.82	757.3	30.26	768.6	40.1	4.5	89	NE			1		10			0.169	4.3		Albert Senz.
Cassel	29.74	755.4	30.35	770.9	38.8	3.8	79	ENE			1		10	NE		0	0		Dr. H. Möhl.
Crefeld	30.13	765.4	30.30	769.5	34.9	1.6	93	NW			1		6			0	0	Foggy	Director Lose.
Emden	30.33	770.3	30.36	771.2	36.5	2.5	93	S			2		0			0	0		Prof. Prestel.
Frankfort on the Main	29.96	761.0	30.34	770.7	41.0	5		NNE			2		10			0	0		Physical Society.
Friedrichshafen	28.77	730.7	30.26	768.7	37.4	3.0	76	ENE			7		10	E		0	0	Föhn	M. Wilhelm.
Hamburg	30.30	769.6	30.37	771.5	31.5	— 0.3	100	SSE			3		10			0.004	0.1	Dense fog	Captain F. Hegemann.
Kiel	30.32	770.0	30.33	770.4	34.0	1.1	93	SW			2		10			0	0		Prof. G. Karsten.
Königsberg, (Prussia)	30.26	768.6	30.34	770.6	38.8	3.8	87	S								0.014	0.35	Cloudy	Prof. E. Luther.
Köslin			30.35	770.8	37.4	3.0		Calm			0		0			0	0		H. Müller.
Leipsic, Observatory	29.98	761.6	30.43	772.8	37.0	2.8	86	NE			1		10			0.012	0.3		Prof. Bruhns.
Memel, Naval School	30.29	769.4	30.34	770.6	37.9	3.3	92	N			1		7ks						Reinbrech von Skalweit.
Neufahrwasser	30.35	770.9	30.37	771.3	37.9	3.3	93	NW			1		10			0.008	0.2		A. Lothes.
Posen	30.14?	765.5?	30.44?	773.2?	38.1	3.4	91	N			6							Covered	Dr. Magener.
Strassburg Obs., (in Alsace	29.70	754.3	30.27	768 8	41.0	5.0	78	NE			3		6	N		0.031	0.81		Dr. Schur.
Stuttgart	29.27	743.4	30.24	768.2	39.2	4.0	87	E			1		10			0	0		Prof. Schoder.
Treves, (Trier)	29.65	753.2	30.18	766.6	39.2	4.0	83	SW			1		10			0	0	Foggy	Prof. Flesch.
Weissenburg, (Bavaria)	28.71	729.2	30.28	769.2	36.9	2.7	94	ENE	1	0.5			10			0.138	3.5	Covered	Dr. Von Bebber.
Wustrow, Naval School	30.39	771.9	30.44	773.2	33.4	0.8	100	SE			2		10			0	0	Foggy	E. F. Schütz.
German Naval Series.																			

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet: Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4. Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines, Königsberg, Posen and Wustrow in cubic zolls. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens

Athens	29.39	746.6	29.79	756.7	52.5	11.4		E			3							Cloudy	Dr. J. F. J. Schmidt.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and wind-force; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.94	760.4	29.99	761.7	61.6	16.1	41	NNE	28.0?	12.5?			0			0	0	Blue sky	
Deesa	29.44	747.8	29.93	760.3	66.8	19.3	26	WSW					0			0	0	Dust-storm	
Bombay	29.92	759.8	29.95	760.8	77.7	25.4	59	NNW	10.0	4.5			0			0	0	Blue sky	
Poona	27.90	708.7	29.91	759.6	78.2	25.7	66	W					5	SW	W	0	0	D. clouds	
Lahore	29.04	737.6	29.82	757.5	54.0	12.2	94	N	6.3	2.8			10			0.49	12.4	Raining	
Belgaum	27.40	670.1	29.95	760.8	75.4	24.1	81	W	4.0	1.8			6	WSW		0.01	0.3	D. clouds	
Bangalore																			
Roorkee	29.07	738.3	30.01	762.2	60.8	16.0	71	NW	5.5	2.5			5			0.18	4.6		
Agra	29.30	744.3	29.89	759.3	61.8	16.6	49	E					10			0	0		
Trichinopoly																			
Nagpur	28.91	734.3	29.97	761.2	73.9	23.3	80	Calm	3.0	1.3			9		NW	0.14	3.6	Gloomy	
Madras																			
Lucknow	29.60	751.8	29.98	761.6	67.4	19.7	72	SE	5.3	2.4			10			0.04	1.0	Overcast	
Allahabad	29.65	753.0	29.96	761.0	72.7	22.6	68	NE	1.4	0.6			2	SW		0	0	D. clouds	
Patna	29.89	759.2	30.08	764.0	69.5	20.8	56	W	1.2	0.5			6	W	W	0	0	D. clouds	
Hazaribagh	28.01	711.3	30.08	764.1	65.3	18.5	77	ESE	4.1	1.8			1			Inap.	Inap.	Drizzling	
Cuttack	29.98	761.4	30.06	763.6	73.0	22.8	60	NNE	0.8	0.4			3			0	0	D. clouds	
Calcutta (Alipore)	30.08	764.0	30.10	764.6	67.8	19.9	74	N	2.0	0.9			8			Inap.	Inap.	Drizzling	
Goalpara	29.68	754.0	30.09	764.3	62.9	17.2	93	NE	2.4	1.1			7	SW		0	0	D. clouds	
Chittagong	30.01	762.1	30.10	764.5	71.8	22.1	85	Calm	1.2	0.5			10			0	0		
Sibsagar	29.79	756.7	30.14	765.6	63.8	17.7	93	ENE	0.9	0.4			5			0	0	D. clouds	
Rangoon																			
Jubbulpore	28.61	726.8	30.02	762.4	68.5	20.3	80	S	4.5	2.0			5	S		0	0	D. clouds	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 1—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	22.09	561.1	30.12	765.0	21.7	— 5.7	61	WSW	.....	.....	1	.....	0	.....	.....	0	0	.....	Ab. Dom. Mongini.
Stelvio	22.07	560.6	30.04	763.0	23.7	— 4.6	.....	NNE	.....	.....	1	.....	0	.....	.....	0.346	8.8	.....	Signora Ernesta Manfredi.
Udine	29.55	750.6	29.97	761.2	49.3	9.6	46	SW	1.3	0.6	.....	.....	1	.....	.....	0	0	.....	Prof. Giovanni Clodig.
Padua	29.88	759.0	29.99	761.8	49.5	9.7	48	NNE	1.8	0.8	.....	.....	1	.....	.....	0	0	.....	Prof. Dott. Lorenzoni.
Vicenza	29.80	756.9	30.00	761.9	50.9	10.5	50	S	3.1	1.4	.....	.....	1	.....	.....	0	0	.....	Conte Alm. Da Schio.
Verona	29.71	754.7	29.94	760.5	51.3	10.7	65	NW	0	0	.....	.....	0	.....	.....	0	0	.....	Dott. B. Bertoncelli.
Bergamo	28.69	728.7	30.04	763.0	48.2	9.0	48	SW	.....	.....	2	.....	0	.....	.....	0	0	.....	Prof. Trionfini Carlo.
Domodossola	29.02	737.2	30.08	764.0	45.5	7.5	60	.....	.....	.....	.....	.....	0	.....	.....	0	0	.....	Prof. Giuseppe Calza.
Milan	29.53	750.1	30.07	763.7	46.4	8.0	.....	NW	.....	.....	2	.....	0	.....	.....	0.075	1.9	.....	Ab. Gio. Capelli.
Pavia	29.70	754.4	30.06	763.4	44.8	7.1	59	SW	.....	.....	2	.....	0	.....	.....	0	0	.....	Prof. Gio. Cantoni.
Moncalieri	29.15	740.4	30.08	764.0	43.5	6.4	69	NNE	0.7	0.3	.....	.....	1	.....	.....	0	0	.....	Prof. P. F. Denza.
Mondovi	28.12	714.3	30.08	764.0	43.2	6.2	27	NW	.....	.....	2	.....	0	.....	.....	0	0	.....	Prof. D. C. Bruno.
Porto Maurizio	29.81	757.1	30.03	762.8	58.3	14.6	12?	NE	.....	.....	4	.....	0	.....	.....	0	0	.....	Prof. L. Vassallo.
Genoa	29.85	758.3	30.03	762.7	54.7	12.6	30	N	6.3	2.8	.....	.....	0	.....	.....	0	0	.....	Prof. G. M. Garibaldi.
Piacenza	29.80	756.8	30.06	763.5	46.4	8.0	51	WNW	7.4	3.3	.....	.....	0	.....	.....	0	0	.....	Dott. G. Manzi.
Parma	29.72	754.8	30.24?	768.1?	49.5	9.7	54	NNW	.....	.....	4	.....	0	.....	.....	0	0	.....	Prof. P. Pigorini.
Florence	29.73	755.2	29.99	761.8	50.9	10.5	52	N	.....	.....	4	.....	9	NE	.....	0.055	1.4	.....	Cav. F. Meucci.
Leghorn	29.88	759.0	29.97	761.2	52.5	11.4	40	NE	13.7	6.1	.....	.....	2	NE	.....	0	0	.....	Prof. P. Monte.
Siena	28.77	730.8	30.00	761.9	45.5	7.5	67	N	4.9	2.2	.....	.....	5	N	.....	0	0	.....	Prof. L. Toscani.
Urbino	28.37	720.6	29.95	760.7	43.5	6.4	80	NNE	.....	.....	6	.....	10	.....	.....	0.610	15.5	.....	Prof. P. Serpieri.
Pesaro	29.89	759.2	29.94	760.5	51.6	10.9	64	NE	78.3	35.0	.....	.....	5	NE	.....	0.063	1.6	.....	Prof. Luigi Guidi.
Ancona	29.82	757.3	29.93	760.1	52.5	11.4	57	NE	.....	.....	8	.....	3	.....	.....	0.185	4.7	.....	Prof. F. DeBosis.
Grosseto	29.80	756.9	29.91	759.8	53.1	11.7	55	NNE	.....	.....	4	.....	2	NW	.....	0.012	0.3	.....	Avv. P. Ponticelli.
Rome	29.56	750.8	29.74	755.3	53.6	12.0	66	N	16.6	8.3	.....	.....	10	.....	.....	0	0	.....	Prof. P. A. Secchi.
Naples, O. U.	29.48	748.7	29.68	753.8	55.4	13.0	53	NE	.....	.....	6	.....	10	NE	.....	0.740	18.8	.....	Prof. L. Palmieri.
Lecce	29.46	748.2	29.71	754.6	55.4	13.0	75	SE	18.6	8.3	.....	.....	10	.....	.....	0.614	15.6	.....	Prof. C. De Giorgi.
Cosenza	28.66	728.0	29.56	750.8	52.0	11.6	73	SW	1.3	0.6	.....	.....	10	.....	.....	1.390	35.3	.....	Prof. F. D. Conti.
Cagliari	.....	.....	.....	.....	57.6	14.2	47	N	.....	.....	4	.....	0	.....	.....	0.047	1.2	.....	Prof. A. Pacinotti.
Riposto, (Sicily)	.....	.....	.....	.....	57.7	14.3	64	SW	.....	.....	2	.....	6	NE	.....	0.039	1.0	.....	Prof. F. Cafiero.
Palermo	29.31	744.4	29.56	750.9	50.2	10.1	95	WNW	19.9	8.9	.....	.....	10	.....	.....	0.252	6.4	.....	Prof. G. Cacciatore.
Caltanissetta	27.64	702.1	29.60	751.9	49.6	9.8	75	WNW	.....	.....	6	.....	10	.....	.....	0.130	3.3	.....	Prof. A. Pagani.
Syracuse	29.41	747.1	29.49	749.0	59.0	15.0	68	NW	.....	.....	4	.....	7	WNW	.....	0	0	.....	Prof. V. Giuliano.
SUB-SERIES.																			
Naples, S. R.	29.13	739.8	29.68	753.9	54.1	12.3	53	NE	8.7	3.9	.....	.....	10	.....	.....	0	0	.....	Prof. F. Brioschi.

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,543.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo 379.6 m., or 1,245.3 ft.; Moadovi, 550 m., or 1,824.2 ft.; Siena, 348.5 m., or 1,143.3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Tokei (Yeddo)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	The Observatory.
Tokei (Yeddo) University	29.94	760.5	30.04	763.0	47	8.3	92	NNW	6	2.7	.....	.....	10m	.....	.....	1.44	36.6	Cloudy	Prof. P. V. Veeder.

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the coöperation of Señor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Aguascalientes	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	I. N. Marin, M. D.
Córdoba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	C. Peña, M. D.
Cuernavaca	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	L. Castillo, A. E.
Guadalajara	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. L. Perez.
Guanajuato	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. V. Fernandez.
Leon	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. M. Leal.
Mexico	23.16	588.2	30.29	769.3	48.2	9.0	79	SE	0.2	0.09	.....	.....	10k	.....	W	0	0	Hazy	Central Observatory. N. N.
Orizaba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	I. Orozco, M. D.
Orizaba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. V. de Leon, M. E.
Pabellon, (Aguascalts)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. B. Gonzalez.
Puebla	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. C. Velazquez.
Toluca	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. F. R. Bayly.
Tlacotalpam	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	G. Barroeta, M. D.
San Luis Potosi	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. J. Rossell.
Vera-Cruz	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. A. Bonilla, M. E.
Zacatecas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	P. Spina. [M. M. D. D.
Puebla, (Catholic Institute)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Tena, F. L. Páramo
Morelia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,290 m., or 7,512.9 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosí, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	30.29	769.4	30.29	769.4	42.4	5.8	.....	SSW	.....	.....	3	.....	.....	.....	.....	0	0	.....	
Groningen	30.24	768.1	30.30	769.5	38.5	3.6	.....	S	.....	.....	2	.....	.....	.....	.....	0	0	.....	
Helder	30.25	768.4	30.25	768.4	42.6	5.9	.....	S	.....	.....	2	.....	.....	.....	.....	0	0	.....	
Hellevoetsluis	.....	.....	30.28	769.2	42.8	6.0	92	SSW	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	
Utrecht	30.26	768.6	30.31	769.8	40.5	4.7	90	SW	.....	.....	1	.....	2	.....	.....	0	0	Light cloudy	H. v d Brink.

NOTE.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	29.93	760.1	29.98	761.5	45.7	7.6	98	S	27.1	12.1			9			0.031	0.8		
Brönö	29.60	751.9	29.64	752.9	44.2	6.8	94	SSW	36	16			10					Raining	
Christiania	29.92	760.0	30.07	763.8	39.0	3.9	97	SSW	0	0			10			0	0		
Tromsö	29.37	745.9	29.41	747.0	38.1	3.4	80	SW	18	8			10			0.138	3.5	Light rain	

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Angra, (Azores)	30.18	766.5	30.37	771.4	58.8	14.9	87	NW	9.4	4.2			5			0.236	6.0		Dr. J. A. Sampaio.
Campo Major	28.90	734.1	29.93	760.3	58.1	14.5	82	ESE	4.9	2.2			7	S		0.602	15.3		Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.15	765.9	30.23	767.7	68.0	20.0	56	SW	4.3	1.9			9			0	0		Capt. D. A. de Cunha.
Lisbon, Observatory	29.53	750.1	29.89	759.3	54.3	12.4	95	E	2.5	1.1			10			0.583	14.8		The Staff.
Ponta Delgada, (Azores)	30.29	769.4	30.36	771.2	62.6	17.0	88	NW	3.1	1.4			3			0.012	0.3	Light rain	

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

Naval Series. Vessels.	Sea or swell. Height scale 0–9	Sea or swell. Direction from—		
S. S. Bartholomew Dias				R. A. T. Pinha, Com'd't.
S. S. India				A. D. Pedroso, Com'd't.
S. S. Mindello				J. F. R. R. Bastos, Com'd't.
S. S. Sado				A. N. P. Sampaio, Com'd't.
S. S. Tejo				F. J. Ferreira, dos Amas, Comd't

NOTE.—The originals, except for S. S. Tejo, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the cooperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Warsaw	29.88	758.9	30.33	770.3	31.8	— 0.1	92	ENE	2	1			10n					Light snow	Astronomical Obs.
Wilna	29.91	759.6	30.35	771.0	28.8	— 1.8	78	NW	2	1			10					Heavy clouds	Astronomical Obs.
Dorpat	30.10	764.5	30.36	771.1	28.4	— 2.0	92	S	4	2			10n						Prof. Dr. Weihrauch
St. Petersburg	30.08	764.1	30.10	764.5	25.7	— 3.5	96	SSW	7	3			10n						Central Physical Obs.
Kuopio	29.76	756.0	30.10	764.6	34.2	1.2	92	SW	13	6			10						Ch. Forsten.
Kieff	29.47	748.5	30.15	765.7	26.4	— 3.1	98	N	9	4			10n						Physical Cabinet.
Nikolaiev	29.91	759.7	29.98	761.5	34.0	1.1	87	NE	22	10			10n						Kurdakof.
Kertch	29.75	755.7	29.77	756.2	42.4	5.8	90	ENE	7	3			10						Lagorio.
Moscow	29.91	759.7	30.52	775.1	16.9	— 8.4	94	S	9	4			4ks						Meteorological Obs.
Lugan	29.85	758.3	30.07	763.7	34.0	1.1	72	E	34	15			10						Meteorological Obs.
Archangel	30.05	764.1	30.10	764.6	22.6	— 5.2	96	SSW	18	8			10						Ogorodnikof.
Tiflis	28.63	727.1	30.09	764.3	40.3	4.6	68	Calm	0	0			7ks						Physical Observatory.
Astrakhan	30.28	769.0	30.19	766.9	29.1	— 1.6	88	E	20	9			9k						Sebastianof.
Kasan	30.22	767.5	30.51	774.9	18.7	— 7.4	92	Calm	0	0			4						Physical Cabinet.
Orenburg																			Tschernischei.
Ekaterinburg	29.40	746.7	30.41	772.4	22.8	— 5.1	96	W	2	1			10						Meteorological Obs.
Nukuss	30.16	766.0	30.41	772.3	27.9	— 2.3	59	NNE	4	2			0						
Kasaly																			Bobrof.
Tashkend	28.81	731.7	30.64	778.2	30.4	— 0.9	94	Calm	0	0			0						Michelson.
Barnaul	29.45	747.9	30.01	762.3	12.2	—11.0	69	SW	0	0			10						Meteorological Obs.
Yeniseisk	29.27	743.5	29.63	752.5	— 3.1	—19.5	79	NW	16	7			0			Blank	Blank		Marks.
Irkutsk																			Usolzef.
Oorga																			Mossin.
Krotkowo*	30.01	762.3	30.52	775.1	23.0	— 5.0	69	S	2	1			1s						Cand. Fatjanow.
Peking, (China)	30.36	771.7	30.52	775.3	25.2	— 3.8	44	NNE	13	6			0						Physical Observatory
Nertchinsk																			Meteorological Obs.
Vladivostock	30.14	765.5	30.18	766.5	19.5	— 6.8	73	NW	11	5			0						
Nikolaievsk, on the Amoor					—17.9	—27.7		Calm	0	0			0						

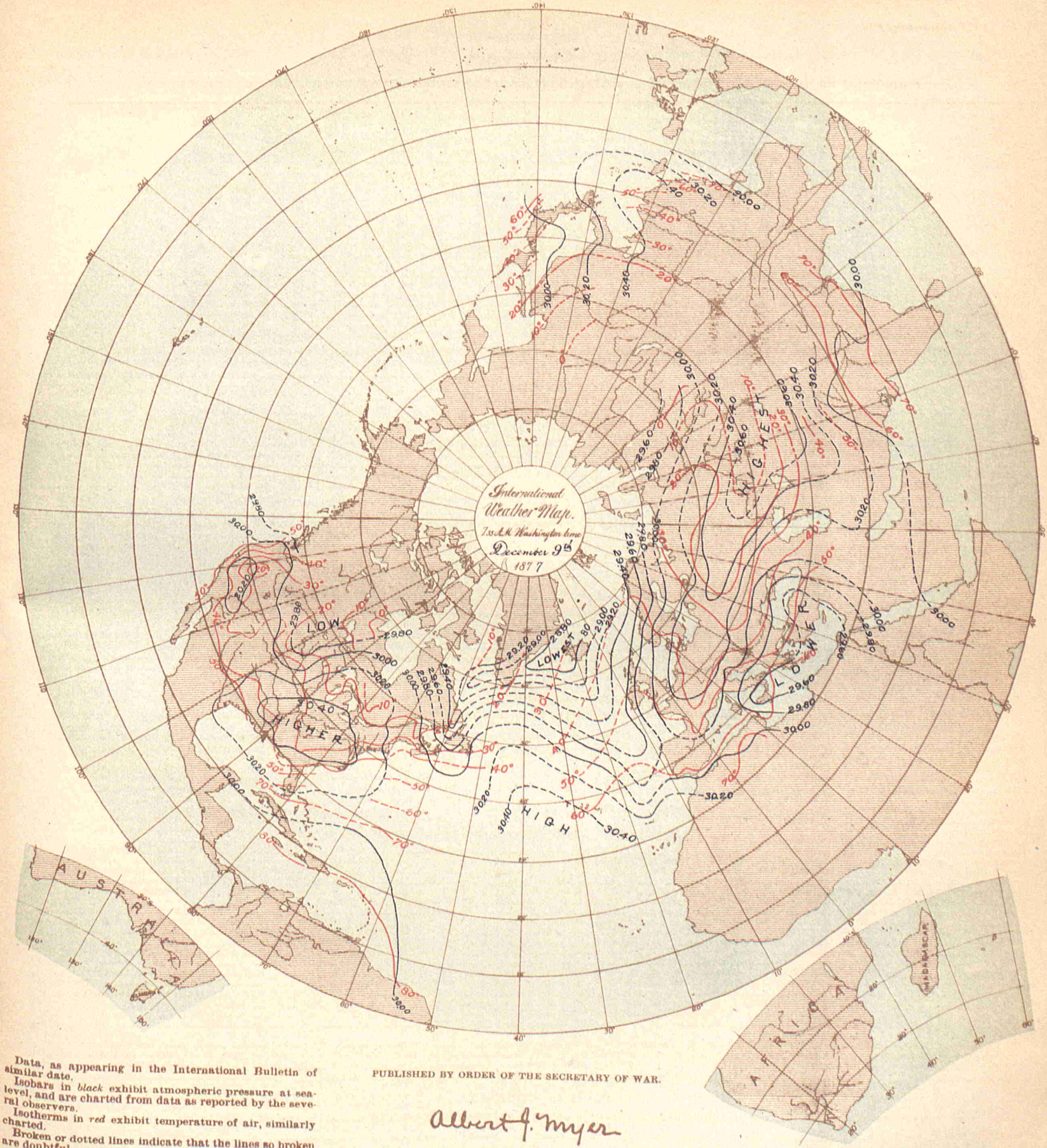
NOTE.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall; for Krotkowo, the barometer reduced to freezing but not to sea-level. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft. * N. 53° 47′, E. 48° 34′.

SPANISH SERIES.

Furnished by the cooperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Barcelona, Met. Obs'y																			Antonio Rave, Director.
Bilbao, Met. Obs'y																			Prof. Manuel de Naveran
Burgos, Met. Obs'y																			Domingo Martin y Perez.
Madrid, Royal Observatory	27.73	704.4	29.99	761.8	50.0	10.0	81	E	3.0	1.33		0	10			0	0	Covered	The Staff.
Murcia, Met. Obs'y																			Olayo Diaz, Director.
Santiago, Met. Obs'y																			R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	30.06	763.6	30.13	765.2	73.1	22.8	76	NNE	15.2	6.8			10n		NNE	0.020	0.5	Cloudy	Benito Vines, S. J.
San Fernando, Naval Obs'y	29.89	759.2	29.99	761.7	63.3	17.4	80	SSW	14.8	6.6		0	10		SW	0.443	11.3		Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, I.W.			29.85	758.2	77.7	25.4	90	SE	1.1	0.50		4cs	3k	SE	SE	0.108	2.75	D. clouds	Leonardo de Tejeda, Chief of Engineers.

NOTE.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

SWEDISH SERIES.

Furnished by the cöoperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.79	756.6	29.83	757.6	36.0	2.2	.....	S	.....	.....	6	.....	10	.....	.....	0.118	3.0	.....	
Umea	29.87	758.6	29.92	759.9	33.4	0.8	89	SW	.....	.....	2	.....	9	.....	.....	0.126	3.2	.....	
Hernosand	29.91	759.8	29.97	761.1	34.7	1.5	83	S	.....	.....	4	.....	7	.....	.....	0	0	.....	
Stockholm	29.99	761.8	30.17	766.3	37.0	2.8	82	WSW	.....	.....	2	.....	5	.....	.....	0	0	.....	
Wisby	30.20	767.1	30.26	768.6	38.1	3.4	83	W	.....	.....	6	.....	5	.....	.....	0	0	.....	
Sub-Series.																			
Upsala	30.06	763.5	30.13	765.4	36.9	2.7	93	SSW	12.1	5.4	.....	.....	8	.....	WSW	0.003	0.12	.....	Dr. Hildebrandsson.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.68	728.5	30.15	765.9	39.0	3.9	68	NNE	.....	.....	4	.....	8	.....	.....	0	0	Covered	The Observatory.
Zurich	28.53	724.7	30.23	767.9	36.3	2.4	88	SE	.....	.....	1	.....	10	.....	.....	0	0	Covered	The Observatory.

Note.—For Geneva the corresponding departures from the normal values are: Barometer, +1.3 mm; Thermometer, +0.7 cent.; Relative Humidity, —11 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	29.77	756.1	45.3	7.4	93	NNW	27	12.0	.....	.....	10	.....	NNW	0.165	4.2	.....	The Observatory.
Fao, (Persian Gulf)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salonica	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	B. Stefanidès.
Valona	.....	.....	29.64	752.8	60.3	15.7	.....	W	.....	.....	1	.....	10	.....	.....	0	0	Covered.....	A. Bertrand.
Varna	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Imperial Observatory.
Sub-Series.																			
Beirut,(Syria,) Lee Obs'y	29.53	750.0	29.65	753.1	59.0	15.0	84	S	.....	.....	5	.....	10n	.....	S	0.25	6.3	Overcast	Prof. C. V. A. Van Dyck.

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second); the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Hon. J. Ferguson.
Brockville, Ontario	29.99	761.7	30.32	770.1	15	— 9.4	.....	Calm	0	0	.....	0	2s	.....	N	0	0	Fair.....	W. R. Bigg.
*Chatham, N. B	29.91	759.7	29.97	761.2	24	— 4.4	97	Calm	0	0	.....	.....	10s	.....	SW	0.01	0.3	Cloudy.....	G. A. Blair.
Charlottetown, P. E. Island.	29.95	760.7	29.99	761.7	27	— 2.8	94	W	4	1.8	.....	0	5ks	.....	Calm	0.100	2.54	Fair	H. J. Cundall, C. E.
Cornwall, Ontario	30.04	763.0	30.25	768.3	14.0	—10.0	94	NW	.....	.....	2	.....	7s	.....	.....	0.030	0.76	Cloudy.....	James Smith, M. A.
Dalhousie, N. B	29.84	757.9	.....	.....	.....	.....	.....	W	.....	.....	1	.....	.....	.....	.....	0.03	0.8	Gloomy.....	H. A. Johnson.
Esquimault, B. C	29.78	756.4	29.82	757.4	44.8	7.1	96	N	.....	.....	.....	.....	10	.....	.....	0.80	20.3	Cloudy.....	W. H. Revis.
*Father Point, Quebec	30.04	763.0	30.06	763.5	21	— 6.1	86	N	10	4.5	.....	.....	10n	.....	NW	0.03	0.8	Threatening	J. McWilliams.
Fredericton, N. B	29.99	761.7	30.06	763.5	17.9	— 7.8	100	Calm	0	0	.....	.....	10s	.....	.....	0.010	0.25	Cloudy.....	Prof. Harrison.
*Fort Garry, Manitoba	28.85	732.8	29.73	755.1	14	—10.0	91	S	11	4.9	.....	.....	10n	.....	S	0	0	Threatening	James Stewart.
Goderich, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	H. J. Strang, M. A.
Granton, Ontario	29.19	741.4	30.37	771.4	25.3	— 3.7	88	W	.....	.....	1	.....	10n	.....	.....	0	0	Cloudy.....	James Grant.
*Halifax, N. S	29.86	758.4	30.00	762 0	24	— 4.4	76	Calm	0	0	.....	0	0	.....	.....	0.131	3.33	Clear.	F. Allison, M. A.
Hamilton, Ontario	29.95	760 7	30.35	770.9	27.5	— 2.5	82	SW	.....	.....	1	8cs	.....	.....	.....	0	0	.....	Geo. Dickson, M. A
Heart's Content, N. F	30.06	763.5	30.08	764.0	30	— 1.1	100	S	.....	.....	1	.....	10	.....	.....	0	0	Overcast.....	E. Weedon.
*Kingston, Ontario	29.98	761.5	30.34	770.6	17	— 8.3	88	NW	1	0.4	.....	0	0	.....	.....	0	0	Clear.....	S. Woods, M. A.
Little Glace Bay, N. S	29.89	759.2	29.93	760.2	.....	.....	.....	W	6	2.7	.....	7k	.....	W	.....	0.17	4.3	Fair...	C. H. Rigby.
*Montreal, Quebec	29.96	761.0	30.17	766.3	21	— 6.1	75	NW	20	8.9	.....	5k	5s	NW	.....	0.02	0.5	Cloudy.....	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.60	751.8	30.38	771.6	8	—16.1	82	E	4	1.8	.....	0	0	.....	.....	0	0	Clear.	Rev. R. Mosley.
Peterboro, Ontario	29.54	750.3	30.36	771.1	15.6	— 9.1	65	NW	.....	.....	1	.....	10n	.....	.....	0	0	Clear?.....	J. F. Jeffers, B. A.
Port Dover, Ontario	29.64	752.8	30.37	771.4	27	— 2.8	76	W	11	4.9	.....	10k	0	NW	.....	Inap.	Inap.	Cloudy..... ...	H. Morgan.
Port Hastings, N. S	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Peter Grant.
Port Stanley, Ontario	29.70	754.4	30.40	772.1	26	— 3.3	74	W	12	5.4	.....	.....	10n	.....	W	0.04	1.0	Cloudy.....	M. Payne.
*Quebec, Quebec...	29.72	754.9	30.06	763.5	24	— 4.4	86	W	4	1.8	.....	.....	10n	.....	.....	0.21	5.3	Cloudy.....	Capt. Ashe, R. N
*Rockliffe, Ontario	29.84	757.9	30.35	770.9	11	—11.7	96	W	6	2.7	.....	.....	8s	.....	W	Inap.	Inap.	Fair.....	W. H. McIntyre.
St. John, N. B	29.87	758.7	30.04	763.0	23	— 5.0	86	Calm	0	0	.....	7k	0	.....	.....	0	0	Fair	G. Murdock, C. E.
*Saugeen, Ontario	29.58	751.3	30.33	770.4	21	— 6.1	89	Calm	0	0	.....	.....	10s	.....	.....	0.40	10.2	Light snow.	K. Stewart.
Stayner, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. J. Cole.
Stratford, Ontario	29.03	737 3	30.40	772.1	24.2	— 4.3	87	W	5.0	2.2	.....	.....	10s	.....	.....	0.20	5.1	Cloudy.....	C. J. MacGregor, M. A.
*Sydney, C. B	29.93	760.2	29.96	761.0	29	— 1.7	93	SW	3	1.3	.....	0	0	.....	.....	0.15	3.8	Clear.....	T. C. Hill.
*Toronto, Ontario	29.96	761.0	30.37	771.4	25	— 3.9	91	NW	3	1.3	.....	5cs	5ks	W	W	0	0	Cloudy.....	Magnetic Observatory.
Windsor, N. S	29.92	760.0	30.02	762.5	20.1	— 6.6	100	W	0	0	.....	0	0	.....	.....	0	0	Clear.....	Prof. John E. Oram.
Woodstock, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Montgomery.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	30.0	— 1.1	.....	SE	.....	.....	.....	Fog	Fog	.....	.....	0.01	0.3	Snowing	John Delany

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

By authority of the **SECRETARY OF WAR.** UNITED STATES SERIES.

Furnished by the cooperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.98	761.5	30.22	767.6	28	— 2.2	77	W	20	8.9	.....	0	1s	.....	Calm	0	0	Clear	
Alpena, Michigan	29.64	752.8	30.34	770.6	23	— 5.0	86	SW	3	1.3	.....	.....	10s	.....	Calm	0	0	Cloudy	
Atlantic City, New Jersey	30.30	769 6	30.32	770.1	28	— 2.2	100	NW	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Augusta, Georgia	30.23	767.8	30.42	772.7	32	0.0	79	NW	5	2.2	.....	0	Haze	.....	Calm	0	0	Clear	
Baltimore, Maryland	30.33	770.4	30.38	771.6	32	0.0	60	NW	7	3.1	.....	0	Sm'e	.....	Calm	0	0	Clear	
Barnegat, New Jersey	30.28	769.1	30.30	769.6	30	— 1.1	78	NW	15	6.7	.....	0	0	.....	.....	0	0	Clear	
Bismarck, Dakota	27.95	709.9	29.71	754.6	16	— 8.9	83	E	3	1.3	.....	0	5s	.....	Calm	0	0	Fair	
Boise City, Idaho	27.28	692.9	30.04	763.0	26	— 3.3	81	N	4	1.8	.....	0	5s	.....	Calm	0	0	Fair	
Boston, Massachusetts	29.99	761.7	30.15	765 8	30.5	— 0.8	63	W	8	3.6	.....	1cs	Haze	W	.....	0	0	Clear	
Brackettville, Texas	29.03	737.3	30.08	764.0	54	12 2	73	E	12	5.4	.....	.....	10s	.....	E	0	0	Cloudy	
Breckenridge, Minnesota	28.82	732.0	29.88	758.9	15	— 9.4	91	S	17	7.6	.....	0	1s	.....	Calm	0	0	Clear	
Brownsville, Texas	30.17	766.3	30.24	768.1	57	13.9	93	E	4	1.8	.....	.....	10s	.....	Calm	0	0	Cloudy	
Buffalo, New York	29.59	751.6	30.34	770.6	27	— 2.8	77	NW	6	2.7	.....	.....	10s	.....	W	0.02	0.5	Cloudy	
Burkes, Arizona	.....	.....	.....	.....	39	3.9	64	NE	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Burlington, Vermont	29.92	760.0	30.20	767.1	25	— 3.8	73	W	10	4.5	.....	.....	10s	.....	W	0.01	0.3	Cloudy	
Cairo, Illinois	30.07	763.8	30.50	774.7	32	0.0	69	NE	3	1.3	.....	2cs	0	Calm	.....	0	0	Fair	
Camp Grant, Arizona	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Camp Verde, Arizona	26.89	683.0	30.38	771.6	32	0.0	79	NW	.....	.....	.....	0	0	.....	.....	0.28	7.1	Clear	
Campo, California	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Cape Hatteras, N. Carolina	30.32	770.1	30.33	770.4	42	5.6	65	N	24	10.7	.....	2k	0	N	.....	0	0	Fair	
Cape Henry, Virginia	30.34	770.6	30.37	771.4	38	3.3	54	N	28	12.5	.....	0	5s	.....	NW	0	0	Fair	
Cape Lookout, N. Carolina	30.31	769.9	30.32	770.1	39	3.9	72	N	16	7.2	.....	0	0	.....	.....	0	0	Clear	
Cape May, New Jersey	30.30	769.6	30.34	770.6	35	1.7	70	NW	28	12.5	.....	0	0	.....	.....	0	0	Clear	
Charleston, South Carolina	30.30	769.6	30.37	771.4	43	6.1	43	N	13	5.8	.....	0	0	.....	.....	0	0	Clear	
Cheyenne, Wyoming	24.05	610.9	29.99	761.7	39	3.9	19	NW	20	8.9	.....	0	5s	.....	NW	0	0	Fair	
*Chicago, Illinois	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Inap.	Inap.	Cloudy	
Cincinnati, Ohio	29.76	755.9	30.46	773.7	27	— 2.8	76	N	1	0.4	.....	10cs	Fog	Calm	Calm	0	0	Cloudy	
Cleveland, Ohio	29.68	753.9	30.46	773.7	30	— 1.1	78	W	10	4.5	.....	.....	10s	.....	Calm	0.04	1.0	Cloudy	
Concho, Texas	28.31	719.1	30.00	763.5	40	4.4	80	NE	2	0.9	.....	8cs	0	NE	.....	0	0	Cloudy	
Corsicana, Texas	29.86	758.4	30.35	770.9	40	4.4	82	Calm	0	0	.....	.....	10s	.....	Calm	0	0	Cloudy	
Davenport, Iowa	29.67	753.6	30.36	771.1	25	— 3.9	75	SE	6	2.7	.....	0	1s	.....	Calm	0	0	Clear	
Denison, Texas	29.54	750.3	30.39	771.9	39	3.9	64	SE	5	2.2	.....	2c	8s	Calm	Calm	0	0	Cloudy	
Denver, Colorado	24.86	631.4	30.08	764.0	32	0.0	79	S	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Detroit, Michigan	29.70	754.4	30.41	772.4	27	— 2.8	77	W	3	1.3	.....	.....	10s	.....	Calm	Inap.	Inap.	Cloudy	
Dodge City, Kansas	27.48	698.0	29.86	758.4	32	0.0	79	S	4	1.8	.....	Haze	8s	Calm	Calm	0	0	Cloudy	
Dubuque, Iowa	29.55	750.6	30.31	769.9	23	— 5.0	73	S	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Duluth, Minnesota	29.40	746.7	30.14	765.5	17	— 8.3	83	Calm	0	0	.....	0	5s	.....	Calm	0.01	0.3	Fair	
Eagle Pass, Texas	29.41	747.0	30.16	766.1	53	11.7	61	SE	9	4.0	.....	.....	10s	.....	SE	0	0	Cloudy	
Eastport, Maine	29.95	760.7	30.02	762.5	31	— 0.6	84	Calm	0	0	.....	5ck	8s	W	SW	0.10	2.5	Cloudy	
Erie, Pennsylvania	29.61	752.1	30.37	771.4	30	— 1.1	78	NW	13	5.8	.....	.....	10s	.....	.....	0.50	12.7	Cloudy	
Escanaba, Michigan	29.61	752.1	30.31	769.9	19	— 7.2	69	W	5	2.2	.....	5cs	0	W	.....	Inap.	Inap.	Fair	
Florence, Arizona	28.43	722.1	30.03	762.7	45	7.2	60	E	.....	.....	.....	0	0	.....	.....	Inap.	Inap.	Clear	
Fort Bayard, New Mexico	24.06	611.1	30.06	763.5	29	— 1.7	78	Calm	0	0	.....	2ck	8s	NE	NE	0.44	11.2	Cloudy	
Fort Craig, New Mexico	25.64	651.2	.....	.....	35	1.7	90	NW	2	0.9	.....	.....	10s	.....	Calm	0.22	5.6	Cloudy	
Fort Gibson, Indian Ter	29.77	756.1	30.34	770.6	36	2.2	62	SE	3	1.3	.....	8c	0	Calm	.....	0	0	Fair	
Fort Griffin Texas	29.02	737.1	30.37	771.4	34	1.1	79	Calm	0	0	.....	.....	10s	.....	Calm	0	0	Cloudy	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	29.07	738.4	30.24	768.1	35	1.7	80	SE	1	0.4	.....	10cs	0	Calm	.....	0	0	Cloudy	
Galveston, Texas	30.30	769.6	30.35	770.9	49	9.4	85	NE	6	2.7	.....	5cs	0	W	.....	0	0	Fair	
Grand Haven, Michigan	29.70	754.4	30.38	771.6	33	0.6	79	W	6	2.7	.....	.....	10s	.....	Calm	0.60	15.2	Cloudy	
Indianapolis, Indiana	29.63	752.6	30.48	774.2	24	— 4.4	74	Calm	0	0	.....	2cs	0	Calm	.....	0	0	Clear	
Indianola, Texas	30.30	769.6	30.32	770.1	51	10.6	79	E	19	8.5	.....	.....	10s	.....	Calm	0	0	Cloudy	
Jacksboro, Texas	29.16	740.7	30.35	770.9	40	4.4	65	S	1	0.4	.....	4cs	0	Calm	.....	0	0	Fair	
Jacksonville, Florida	29.30	744.2	30.33	770.4	40	4.4	56	N	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Keokuk, Iowa	29.67	753.6	30.33	770.4	27	— 2.8	77	S	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Key West, Florida	30.13	765.3	30.17	766.3	64.0	17.8	89	N	16	7.2	.....	1k	Fog	NE	Calm	0.05	1.3	Clear	
Kittyhawk, North Carolina	30.34	770.6	30.37	771.4	40	4.4	64	N	34	15.2	.....	2k	0	N	.....	0	0	Fair	
Knoxville, Tennessee	29.42	747.3	30.51	774.9	28	— 2.2	67	Calm	0	0	.....	0	Sm'e	.....	.....	0	0	Smoky	
La Crosse, Wisconsin	29.43	747.5	30.32	767.6	24	— 4.4	74	S	5	2.2	.....	0	0	.....	.....	0.02	0.5	Clear	
La Mesilla, New Mexico	26.17	664.7	30.32	770.1	37	2.8	85	NE	1	0.4	.....	.....	10n	.....	Calm	0.27	6.9	Light rain	
Laredo, Texas	.....	.....	.....	.....	58	14.4	81	E	3	1.3	.....	10k	0	Calm	.....	0	0	Cloudy	
Leavenworth, Kansas	29.29	744.0	30.17	766.3	34	1.1	79	S	7	3.1	.....	2c	0	Calm	.....	0	0	Fair	
Los Angeles, California	29.73	755.1	30.08	764.0	47	8.3	41	N	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Louisville, Kentucky	29.87	758.7	30.47	773.9	29	— 1.7	88	Calm	0	0	.....	0	Fog	.....	Calm	0	0	Clear	
Lynchburg, Virginia	29.71	754.6	30.44	773.2	34	1.1	43	W	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Maricopa Wells, Arizona	.....	.....	.....	.....	32	0.0	40	N	.....	.....	.....	0	0	.....	.....	0.06	1.5	Clear	
Marquette, Michigan	29.48	748.8	30.24	768.1	22	— 5.6	72	SW	8	3.6	.....	.....	10s	.....	Calm	0.05	1.3	Cloudy	
Mason, Texas	28.62	726.9	30.44	773.2	45	7.2	61	Calm	0	0	.....	.....	10s	.....	.....	0	0	Cloudy	
Memphis, Tennessee	30.12	765.0	30.46	773.7	32	0.0	61	NE	2	0.9	.....	5c	Fog	SW	Calm	0	0	Fair	
Milwaukee, Wisconsin	29.66	753.4	30.42	772.7	18	— 7.8	69	SW	4	1.8	.....	5ck	2s	SW	.....	0	0	Fair	
Mobile, Alabama	30.37	771.4	30.41	772.4	38	3.3	71	N	4	1.8	.....	10c	0	NW	.....	0	0	Cloudy	
Montgomery, Alabama	30.20	767.1	30.46	773.7	35	1.7	70	Calm	0	0	.....	5c	Sm'e	W	Calm	0	0	Fair	
Morgantown, West Virginia	29.35	745.5	30.48	774.2	29	— 1.7	67	Calm	0	0	.....	0	10s	.....	W	0	0	Cloudy	
Mt. Washington, N. H.	23.50	596.9	29.86	758.4	7	—13.9	100	NW	36	16.1	.....	.....	10n	.....	NW	0.36	9.1	Heavy snow	
Nashville, Tennessee	29.92	760.0	30.50	774.7	25	— 3.9	75	Calm	0	0	.....	2cs	0	Calm	.....	0	0	Clear	
New Haven, Connecticut	30.12	765.0	30.24	768.1	32	0.0	79	W	6	2.7	.....	0	0	.....	.....	0	0	Clear	
New London, Connecticut	30.15	765.8	30.20	767.1	31	— 0.6	69	W	6	2.7	.....	0	0	.....	.....	0	0	Clear	
New Orleans, Louisiana	30.31	769.9	30.37	771.4	44	6.7	60	N	6	2.7	.....	8ck	0	Calm	.....	0	0	Fair	
Newport, Rhode Island	30.13	765.3	30.18	766.6	34	1.1	70	W	12	5.4	.....	0	0	.....	.....	0	0	Clear	
New York, New York	30.10	764.5	30.29	769.4	31	— 0.6	60	NW	15	6.7	.....	0	Sm'e	.....	.....	0	0	Clear	
Norfolk, Virginia	30.34	770.6	30.41	772.4	34	1.1	61	N	12	5.4	.....	0.	Haze	.....	Calm	0	0	Clear	
North Platte, Nebraska	27.04	686.8	29.77	756.1	18	— 7.8	70	W	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Olympia, Washington Ter.	29.84	757.9	29.88	758.9	45	7.2	100	S	2	0.9	.....	.....	10n	.....	Calm	1.80	45.7	Heavy rain	
Omaha, Nebraska	28.87	733.3	29.98	761.5	35	1.7	70	S	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Oswego, New York	29.98	761.5	30.32	770.1	27	— 2.8	72	NW	12	5.4	.....	0	0	.....	.....	0.50	12.7	Clear	
Pembina, Dakota	28.89	733.8	29.76	755.9	17	— 8.3	84	S	16	7.2	.....	.....	10ks	.....	S	0	0	Cloudy	
Philadelphia, Pennsylvania	30.29	769.4	30.34	770.6	32	0.0	89	NW	12	5.4	.....	0	Haze	.....	Calm	0	0	Clear	
Phœnix, Arizona	.....	.....	.....	.....	35	1.7	90	Calm	.....	.....	.....	0	0	.....	.....	0.05	1.3	Clear	
Pike's Peak, Colorado	17.82	452.2	30.03	762.7	14	—10.0	11	NW	20	8.9	.....	2cs	0	Calm	.....	0	0	Fair	
Pioche, Nevada	24.18	614.2	29.95	760.7	34	1.1	25	NW	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Pittsburg, Pennsylvania	29.55	750.6	30.42	772.7	25	— 3.9	87	W	3	1.3	.....	5k	2s	W	W	0	0	Cloudy	
Port Huron, Michigan	29.67	753.6	30.38	771.6	24	— 4.4	74	W	3	1.3	.....	.....	10ks	.....	Calm	0.08	2.0	Cloudy	
Portland, Maine	30.02	762.5	30.08	764.0	33	0.6	70	W	3	1.3	.....	1k	Fog	Calm	.....	0	0	Clear	
Portland, Oregon	29.93	760.2	30.02	762.5	46	7.8	100	N	1	0.4	.....	.....	10n	.....	Calm	0.88	22.4	Light rain	
Prescott, Arizona	24.88	631.9	30.24	768.1	25	— 3.9	82	E	.....	.....	.....	0	0	.....	.....	0.24	6.1	Clear	
Punta Rassa, Florida	30.23	767.8	30.25	768.3	57	13.9	69	N	16	7.2	.....	2k	0	NW	.....	0	0	Clear	
Red Bluff, California	29.82	757.4	30.19	766.8	39	3.9	82	N	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Rochester, New York	29.68	753.9	30.33	770.4	29	— 1.7	78	NW	8	3.6	.....	.....	10s	.....	NW	0.02	0.5	Cloudy	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Roseburg, Oregon	29.44	747.8	30.01	762.2	51	10.6	90	SW	8	3.6	.....	.....	10s	.....	Calm	0.09	2.3	Cloudy	
Sacramento, California	30.12	765.0	30.21	767.3	37	2.8	80	E	4	1.8	.....	0	0	.....	.....	0	0	Clear	
St. Louis, Missouri	29.83	757.7	30.44	773.2	30	— 1.1	67	S	9	4.0	.....	0	0	.....	.....	0	0	Clear	
St. Marks, Florida	30.36	771.1	30.38	771.6	31	— 0.6	95	N	2	0.9	.....	0	0	.....	.....	0	0	Clear	
St. Paul, Minnesota	29.17	740.9	30.05	763.3	22	— 5.6	72	SE	6	2.7	.....	.....	10s	.....	.....	0	0	Cloudy	
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salt Lake City, Utah	25.85	656.6	30.18	766.6	23	— 5.0	73	E	4	1.8	.....	0	0	.....	.....	0	0	Clear	
San Antonio, Texas	29.60	751.8	30.21	767.3	46	7.8	77	N	3	1.3	.....	10ck	0	W	.....	0	0	Cloudy	
San Diego, California	30.04	763.0	30.11	764.8	49	9.4	71	NE	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Sandusky, Ohio	29.73	755.1	30.46	773.7	28	— 2.2	88	SW	8	3.6	.....	0	4s	.....	Calm	0	0	Fair	
Sandy Hook, New Jersey	30.26	768.6	30.29	769.4	34	1.1	69	NW	21	9.4	.....	0	0	.....	.....	0	0	Clear	
San Francisco, California	30.11	764.8	30.18	766.6	49	9.4	93	N	5	2.2	.....	0	Fog	.....	Calm	0	0	Foggy	
Santa Fé, New Mexico	23.34	592.8	29.88	758.9	29.5	—1.4	62	NE	14	6.3	.....	0	5s	.....	Calm	0	0	Fair	
Savannah, Georgia	30.26	768.6	30.36	771.1	38	3.3	71	N	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Shreveport, Louisiana	30.22	767.6	30.46	773.7	56	2.2	80	Calm	0	0	.....	5c	0	Calm	.....	0	0	Fair	
Smithville, North Carolina	30.35	770.9	30.39	771.9	38	3.3	54	N	13	5.8	.....	0	0	.....	.....	0	0	Clear	
Springfield, Massachusetts	30.03	762.7	30.16	766.1	33	0.6	50	NW	2	0.9	.....	2k	0	SW	.....	0	0	Fair	
Stockton, Texas	27.11	688.6	30.11	764.8	37	2.8	100	W	2	0.9	.....	.....	10m	.....	Calm	0.05	1.3	Light rain	
Thatcher's Island, Mass	30.08	764.0	30.13	765.3	32	0.0	79	NW	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Toledo, Ohio	29.71	754.6	30.44	773.2	29	—1.7	89	W	4	1.8	.....	0	2s	.....	Calm	Inap.	Inap.	Fair	
Tucson, Arizona	27.63	701.8	30.18	766.6	37	2.8	70	Calm	.....	.....	.....	0	0	.....	.....	0.97	24.6	Clear	
Tybee Island, Georgia	30.32	770.1	30.35	770.9	43	6.1	67	NE	18	8.0	.....	0	0	.....	.....	0	0	Clear	
Umatilla, Oregon	29.72	754.9	.....	.....	34	1.1	90	NW	4	1.8	.....	.....	10s	.....	Calm	0.07	1.8	Cloudy	
Vicksburg, Mississippi	30.10	766.8	30.47	773.9	40	4.4	48	SE	1	0.4	.....	5c	0	SE	.....	0	0	Fair	
Virginia City, Montana	24.24	615.7	29.72	754.9	29	— 1.7	68	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Visalia, California	29.86	758.4	30.25	768.3	35	1.7	90	Calm	0	0	.....	0	0	.....	.....	0	6	Clear	
Washington, D. C.	30.29	769.4	30.42	772.7	30	— 1.1	68	NW	4	1.8	.....	0	Sm'e	.....	.....	0	0	Clear	
Wickenburg, Arizona	.....	.....	.....	.....	31	— 0.6	69	NW	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Wilmington, N. Carolina	30.30	769.6	30.38	771.6	36	2.2	46	N	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Winnemucca, Nevada	25.79	655.0	30.15	765.8	17	— 8.3	67	NE	7	3.1	.....	0	0	.....	.....	0	0	Clear	
Wood's Holl, Mass	30.13	765.3	30.19	766.8	35	1.7	70	NW	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Yankton, Dakota	28.63	727.2	29.99	761.7	20	— 6.7	77	SW	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Yuma, Arizona	29.90	761 0	30.13	765.3	48	8.9	53	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
SUB-SERIES.																			
York Factory, B. A.	29.67	753.6	29.73	755.1	— 3.0	—19.4	83	S	8	3.6	.....	0	0	.....	.....	Inap.	Inap.	Clear	J. Fortescue, W. Wood.
Havana, Cuba, W. I.	30.05	763.3	30.07	763.8	73	22.8	76	N	2.4	1.1	.....	4k	4m;ks	NE	.....	Blank	Blank	Cloudy	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.10	764.5	30.11	764.8	79	26.1	86	Calm	0	0	.....	8c	8n	E	E	0	0	.....	James Gall.
Navassa, W. I.	29.85	758.2	29.93	760.2	79	26.1	.....	NE	3	1.3	.....	.....	.....	.....	.....	0	0	Fair	F. M. Everett.
St. Thomas, W. I.	.....	.....	.....	.....	82	27.8	87	ESE	3	1.3	.....	2c	8ks	E	.....	0.4	10.	.....	G. O. Gellich.
Paramaribo, D. Guiana, S. A.	.....	.....	29.94	760.5	78	25.6	86	E	.....	.....	2	6k	5s	E	.....	0.505	12.83	½ cloudy	C. J. Hering.
Batavia, Dutch Guiana, S. A	30.01	762.2	30.02	762.4	82.8	28.2	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.856	21.75	Rainy	Dr. H. Groot.
Medellin, Colombia, S. A.	25.20	640.1	.....	.....	66.8	19.3	82	Calm	.....	.....	0	.....	9s;ks	.....	.....	0.02	0.5	Cloudy	Thomas Herran.
Honolulu, Oahu, H. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Daniel Smith.
Makawao, Maui, H. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo; for Batavia, the barometer reduced to freezing but not to sea-level. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,893 (?) ft., or 1,473.2 (?) m., Camp Verde 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.6 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fe, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m. Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.67 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

* Observation not simultaneous.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
NavyYard Mare Island, Cal.	30.14	765.5	45	7.2	42	5.6	91	ESE	3	1.3	.....	.....	0	.....	.....	0	0	.....	.....	Clear.....	
Navy Yard, Pensacola, Fla.	30.42	772.7	.....	.....	44	6.7	68	NE	5	2.2	.....	.....	10	.....	W	0	0	.....	.....	D. clouds.....	
NavyYard, Portsmouth, N.H	30.12	765.0	54	12.2	29	— 1.7	78	W	1	0.4	.....	.....	.....	.....	.....	0	0	.....	.....	Clear.....	
Naval Hospital, Yokohama, Japan.....	30.02	762 5	56	13.3	48	8.9	96	Calm	.....	.....	0	.....	10s	.....	NE	0.20	5.1	.....	.....	Overcast.....	
Adams. S. 45° 36′, W. 76° 50′.....	29.89	759.2	49	9.4	48	8.9	100	Var.	.....	.....	1	.....	10	.....	W	Light	Light	Long	SW	Raining.....	
Alert, Yokohama, Japan.....	30.08	764.0	.....	.....	54	12.2	87	N	.....	.....	1	.....	10	.....	N	.....	.....	Smooth	.....	D. clouds.....	
Alliance, Chanak Kalessi, Turkey.	29.93	760.2	63	17.2	56	13.3	87	NE	.....	.....	2–4	.....	10	.....	NE	.....	.....	.....	.....	Squally.....	
Ashuelot. Shanghai, China.....	30.48	774.2	53	11.7	43	6.1	92	NNW	.....	.....	1	.....	9	.....	Calm	.....	.....	.....	.....	D. clouds.....	
Canonicus, New Orleans, La.....	30.32	770.1	39	3.9	44	6.7	68	ENE	.....	.....	1	.....	7	.....	.....	.....	.....	.....	.....	Cloudy.....	
Colorado, New York, N. Y.....	30.26	768.6	33	0.6	33	0.6	51	WNW	15	6.7	.....	.....	3	.....	NW	0	0	.....	.....	Light fog.....	
Despatch, Constantinople, Turkey.	29.90	759.4	81	27.2	47	8.3	92	N	.....	.....	4–6	.....	10	.....	N	.....	.....	.....	.....	Rainy.....	
Essex, Congo River, Lower Guinea....	29.83	757.7	83	28.3	86	30.0	92	WSW	.....	.....	3	.....	3	.....	.....	.....	.....	Smooth	.....	D. clouds.....	
Franklin, Norfolk, Va.....	30.46	773.7	39	3.9	40	4.4	82	N	12	5.4	.....	.....	8†	.....	N	0	0	.....	.....	D. clouds.....	
Guard, Lisbon, Portugal.....	29.85	758.2	67	19.4	59	15.0	88	Calm	.....	.....	0	.....	10	.....	S&E	.....	.....	.....	.....	Raining.....	
Lackawana, Mare Island, Cal....	30.18	766.6	.....	.....	47	8.3	92	Calm	.....	.....	0	.....	9	.....	.....	.....	.....	.....	.....	Blue sky.....	
Marion, Off Villefranche, France.	30.01	762.2	59	15.0	58	14.4	94	NNW	.....	.....	2	.....	1	.....	Calm	0	0	Smooth	.....	D. clouds.....	
Michigan, Erie, Pa.....	29.85	758.2	65	18.3	31	— 0.6	58	NW	.....	.....	2	.....	10	.....	W	.....	.....	.....	.....	Cloudy.....	
Monocacy, Shanghai, China	30.30	769.6	60	15.6	43	6.1	83	W	.....	.....	1	.....	8	.....	N	Blank	Blank	.....	.....	D. clouds.....	
Monongahela, N. 19° 40′, E. 39° 05′.	30.06	763.5	75	23.9	76	24.4	82	NNE	.....	.....	5–6	.....	kn	.....	.....	Moderate.	Moderate.	Moderate	S&E	Raining	
New Hampshire, Port Royal, S.C.....	30.44	773.2	.....	.....	46	7.8	54	NE	13	5.8	.....	.....	.....	.....	W	0	0	.....	.....	D. clouds.....	
Omaha, S. 19° 55′, W. 73° 49′.....	30.09	764.3	70	21.1	69	20.6	70	SE	2	0.9	.....	.....	10	.....	SE	0	0	Long	S	Cloudy.....	
Onward, Callao, Peru.....	30.00†	762.0†	73	22.8	70	21.1	99	SSE	.....	.....	2	.....	1	.....	.....	.....	.....	Long	W	D. clouds.....	
Ossipee, Norfolk, Va.....	30.42	772.7	64	17.8	38	3.3	63	N	.....	.....	3	.....	1	.....	N	.....	.....	.....	.....	D. clouds. ...	
Palos, Shanghai, China.....	30.46	773.7	52	11.1	43	6.1	67	NW	.....	.....	2	.....	8	.....	.....	.....	.....	.....	.....	Cloudy.....	
Plymouth. St. Thomas, W. I.....	30.01	762.2	83	28.3	81	27.2	96	E	.....	.....	1–2	.....	2	.....	E	.....	.....	Smooth	.....	Pleasant.....	
Powhatan, Norfolk, Va.....	.....	.....	.....	.....	36	2.2	??	NNW	14.4	6.4	.....	.....	.....	.....	.....	0	0	.....	.....	Clear	
Ranger, Shanghai, China.....	30.55	776.0	.....	.....	49	9.4	78	N	.....	.....	1	.....	10	.....	Calm	.....	.....	.....	.....	Cloudy.....	
Rio Bravo, Brownsville, Texas.....	30.13	765.3	.....	.....	57	13.9	87	ENE	.....	.....	1	.....	10	.....	NW	.....	.....	.....	.....	Misty.	
Santee, Annapolis, Md	30.43	772.9	59	15.0	32	0.0	79	NW	.....	.....	3	.....	1	.....	.....	0	0	.....	.....	Clear.....	
Saratoga, Norfolk, Va.....	.....	.....	.....	.....	35	1.7	90	Calm	.....	.....	0	.....	.....	.....	.....	0	0	.....	.....	Clear.....	
St. Louis, League Island, Pa	30.15	765.8	30	—1.1	30	— 1.1	78	WNW	5	2.2	.....	.....	1	.....	WNW	0	0	.....	.....	Clear.....	
Swatara, Norfolk, Va.....	30.45	773.4	.....	.....	41	5.0	49	NNW	.....	.....	3	.....	0	.....	.....	.....	.....	.....	.....	Blue sky.....	
Tennessee, N. 33° 53,′ E. 132° 36′.....	30.09	764.3	64	17 8	54	12.2	49	W	24	10.7	.....	.....	7	.....	Calm	0	0	Smooth	.....	Hazy.....	
Trenton, Villefranche, France.....	30.09	764.3	.....	.....	60	15 6	44	SSW	3	1.3	.....	.....	0	.....	.....	0	0	.....	.....	Blue sky.....	
Vandalia, Villefranche, France.....	29.96†	761.0†	64	17,8	60	15.6	44	SSW	.....	.....	1	.....	0	.....	.....	.....	.....	.....	.....	Blue sky.....	
Wabash, Boston, Mass.....	30.16	766.1	46	7,8	30	— 1.1	.....	NW	6	2.7	.....	.....	0	.....	.....	0	0	.....	.....	Blue sky.....	
Wyoming, Washington, D. C.....	30.56†	776.2†	44	6,7	32	0,0	.....	WNW	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	D. clouds.....	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. The position given for the Plymouth is that at noon, local time, instead of that at 7:35 a. m., Washington time.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Character.	Direction from—		
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama, N. 36° 07′ 30″, W. 122° 11′ 10″			30.03	762.7	59	15.0	100	NW			2		2		Calm	Light	NW	D. clouds	Capt. Howard.
S. S. City of Peking, N. 34° 06′, W. 142° 59′			30.01*	762.2*	57	13.9	100	W			5		9		W	Moderate.	wsw	Drizzling	Lt. Z. L. Tanner, U.S.N.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio, Hong-Kong, China			30.16	766.1	72	22.2		ENE			6		2		E			D. clouds	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

NOTE.—The originals give the wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. *Aneroid.

WHITE STAR LINE MARINE SERIES.																			
Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.																			
S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.																			
S. S. Belgic																			Capt. John Metcalf.
S. S. Gaelic, N. 33° 40′, E. 141° 00′			29.92*	760.0*	70	21.1	??	W			6		n;s		W	Rough	W	Raining	Capt. W. H. Kidley
S. S. Oceanic																			Capt. H. Parsell.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. *Aneriod.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.																			
Furnished by the coöperation of A. Schumacher & Co., Agents.																			
S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig																			Capt. K. Undütsch.
S. S. Nürnberg, N. 27° 16′, W. 64° 58′			30.04	763.0	73.0	22.8	90	ESE			3		n		SE	Smooth		Raining	Capt. A. Jaeger.
S. S. Ohio, N. 48° 18′, W. 26° 8′			29.88	758.9	45.0	7.2	88	NW			6		ks		NW	High	SW	Raining	Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, nor distinguish between upper and lower clouds.

UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Lo'wr	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second	0—10.	0—10.	0—10.	From—	From—	Character.	Direction From—		
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, N. 42° 13′, W. 63° 16′			30.09	764.3	43	6.1	100	W			4		8		W	Light	wsw	Dull	Captain Sargent.
S. S. Ohio, Bombay Hook, Del			30.39	771.9	34	1.1	90	NW			3		0					Clear	Captain Morrison.
S. S. Pennsylvania, Liverpool			30.06†	763.5†	49	9.4	100	S			4		10		SW			Rainy	Captain Harris.

Note.—The originals give the barometer as read off; wind-force by the scale 0 to 12. † Corrected for temperature and elevation, instrumental error not known.

RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

S. S. Nederland																			Capt. Randle.
S. S. Switzerland, N. 39° 41′, W. 71° 29′			30.12*	765.0*				NW	15	6.7		6		N	Smooth		D. clouds		Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

*Aneroid: regulated to standard at Antwerp.

ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

S. S. Hibernian																			
S. S. Scandinavian, N. 45° 32′, W. 58° 13′			29.93	760.2	35	1.7		SSE			5		10		SSE	Mod'ate	SSE	Snowing	Capt. W. Richardson.

Note.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller. Kennebunk, Maine			30.06	763.5	29	—1.7	83	Calm	0	0			0					Clear	Capt. James Jorgensen.

Note.—The originals for the schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4.

Collated at the Office of the Chief Signal Officer of the Army, Washington, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^{d}.) Chief Signal Officer. U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON DECEMBER 10, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:58 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours	.....	.....	29.90	759.4	60.1	15.6	85	S	.....	.....	2	.....	8	.....	.....	0.248	6.3	Very cloudy	Michel.
Algiers	.....	.....	29.89	759.3	67.3	19.6	61	SSW	.....	.....	1	.....	5	.....	.....	0.087	2.2	Cloudy	Peter.
La Calle	.....	.....	29.95	760.8	60.8	16.0	62	ENE	.....	.....	3	.....	4	.....	.....	0	0	Cloudy	Fleury.
Tunis	.....	.....	29.93	760.2	57.2	14.0	78	W	.....	.....	2	.....	7	.....	.....	0	0	Very cloudy	Jacques.
Sfax	.....	.....	30.05	763.2	59.0	15.0	.....	SW	.....	.....	2	.....	7	.....	.....	0	0	Very cloudy	Husson.
Saida	.....	.....	29.95	760.7	56.5	13.6	47	SW	.....	.....	3	.....	7	.....	.....	0.071	1.8	Very cloudy	Millot.
Tebessa	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Bassières.
Geriville	.....	.....	30.04	763.1	52.5	11.4	93	WNW	.....	.....	2	.....	5	.....	.....	0	0	Cloudy	Lemaillot.
Laghouat	.....	.....	30.01	762.2	59.9	15.5	53	N	.....	.....	2	.....	2	.....	.....	0	0	Fair	Guyot.
Biskra	.....	.....	29.99	761.7	63.3	17.4	34	S	.....	.....	2	.....	7	.....	.....	0	0	Very cloudy	Kuntz.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m.; or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

Agram	29.53	750.0	30.10	764.6	35.2	1.8	78	NE	.....	.....	2	.....	10	.....	.....	0	0	.....	Prof. Ivan Stožir
Cracow, I. R. Observatory	29.45	748.0	30.26	768.7	27.7	— 2.4	75	NNE	.....	.....	3	.....	10	.....	.....	0	0	.....	Dr. Wierzbiski.
Eperies	29.22	742.2	30.15	765.9	28.8	— 1.8	80	N	.....	.....	4	.....	10k	.....	.....	0	0	.....	Julius Mikolik.
Gratz	28.84	732.4	30.14	765.5	33.1	0.6	86	SSW	.....	.....	2	.....	10	.....	.....	0	0	.....	Andreas Rospini.
Hermannstadt	28.55	725.1	30.03	762.8	34.5	1.4	74	SE	.....	.....	1	.....	5	.....	.....	0	0	.....	Prof. Reissenberger.
Kremsmünster	28.68	728.5	30.10	764.4	30.2	— 1.0	80	E	.....	.....	5	.....	10	.....	.....	0	0	.....	Prof. C. Wagner.
Lemberg	29.17	740.8	30.22	767.0	24.1	— 4.4	95	NE	.....	.....	1	.....	10	.....	.....	0	0	.....	Dr. T. Stanecki.
Pola	29.83	757.7	29.95	760.6	44.6	7.0	62	ENE	.....	.....	4	.....	3cs	.....	.....	0	0	.....	I.R.HydrographicOffice
Szathmar	29.61	752.2	30.10	764.6	34.8	1.3	91	S	.....	.....	2	.....	2	.....	.....	0	0	.....	Johann Tamas, S. J.
Szegedin	29.76	756.0	30.06	763.4	34.9	1.6	84	N	.....	.....	1	.....	6	.....	.....	0	0	.....	Karl Stancel.
Trieste	29.91	759.6	30.01	762.2	41.7	5.4	50	ENE	.....	.....	3	.....	2	.....	.....	0	0	.....	P. Busin.
Vienna	29.41	746.9	30.13	765.4	33.3	0.7	96	N	.....	.....	1	.....	9	.....	.....	0	0	.....	I. R. Central Met. Obs'ty
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
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.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

Arlon	28.48	723.3	30.04	762.9	35.2	1.8	67	E	.....	.....	2	.....	1	.....	.....	0	0	.....	Prof. M. Passau.
Brussels	29.79	756.7	30.00	762.0	36.3	2.4	89	WNW	.....	.....	3	.....	0	.....	.....	0	0	.....	Royal Observatory.
Furnes	29.96	761.0	29.98	761.6	37.6	3.1	87	ESE	.....	.....	2	.....	2	.....	.....	.....	.....	Raining	M. E. de Cae.
Maeseyck	29.91	759.7	30.04	763.0	38.5	3.6	74	ESE	.....	.....	4	.....	0	.....	.....	0	0	.....	M. Pierrot.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	29.76	755.9	29.86	758.4	45.0	7.2	.....	S	12	5.4	.....	.....	9	.....	.....	0.150	3.81	Overcast.....	W. Boswell.
Ardrossan	29.78	756.4	29.79	756.7	47	8.3	.....	S	.....	.....	4	.....	9	.....	.....	.....	.....	Raining.....	William McNeil.
Armagh, Observatory	.....	.....	29.80	756.9	45.9	7.7	.....	SSW	2	0.9	.....	.....	10	.....	.....	.....	.....	Raining.....	S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)	.....	.....	29.89	759.2	41.6	5.3	.....	SE	17	7.6	.....	.....	10	.....	.....	.....	.....	Overcast.....	John Hartnup.
Birr Castle, (Parsonstown)	.....	.....	29.83	757.7	46.0	7.8	.....	Calm	.....	.....	0	.....	10	.....	.....	.....	.....	Overcast.....	J. Dreyer.
Bradford, Yorkshire	29.48	748.8	29.87	758.7	41.7	5.4	.....	S	.....	.....	0	.....	10	.....	.....	0	0	Overcast.....	J. McLandsborough.
Bridgetown, (Barbados)	29.93	760.2	29.96	761.0	80.0	26.7	.....	NE	.....	.....	1	.....	2	.....	.....	.....	.....	D. clouds.....	Pvt. G. W. Roberts, A.
Cambridge, Observatory	.....	.....	29.98	761.5	37.5	3.1	.....	E	.....	.....	1	.....	10	.....	.....	.....	.....	Overcast	H. Todd. [H. C.
Cardington	.....	.....	29.99	761.7	39.0	3.9	.....	S	.....	.....	1	.....	8	.....	.....	.....	.....	Overcast.....	John McLaren.
Chatham, School M. E	29.72	754.9	29.85	758.2	39.2	4.0	.....	E	.....	.....	1	.....	10	.....	.....	.....	.....	Overcast.....	Lt. W. G. Morris, R. E.
Dartmoor	28.41	721.6	29.90	759.4	42.2	5.7	.....	E	.....	.....	3	.....	4	.....	.....	.....	.....	Fine.....	Alexander Watt.
Davos Platz (Switzerland)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Francis Redford, M. A.
Donaghadee	29.77	756.1	29.80	756.9	47	8.3	.....	SSW	.....	.....	6	.....	10	.....	.....	.....	.....	Raining.....	J. Muc Gowan.
Dover	29.94	760.5	29.96	761.0	41	5.0	.....	E	.....	.....	3	.....	5	.....	.....	.....	.....	¾ clouded...	J. Costello.
Eccles, (near Manchester)	.....	.....	29.95	760.7	41.9	5.5	.....	SE	1.6	0.7	.....	.....	10	.....	.....	.....	.....	Overcast.....	Thomas Mackereth.
Falmouth, Observatory	29.65	753.1	29.88	758.9	48.2	9.0	.....	SE	.....	.....	2	.....	9	.....	.....	.....	.....	Overcast.....	The Staff.
Fort Napier, (Natal)	27.61	701.3	29.83	757.7	70.7	21.5	.....	SE	.....	.....	1	.....	10	.....	.....	.....	.....	Overcast	Pvt. G. Salmon, A. H. C.
Free Town, (Sierra Leone)	.....	.....	29.87	758.7	87	30.6	.....	W	.....	.....	2	.....	3	.....	.....	.....	.....	D. clouds.....	
Galway, Queen's College	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	29.77	756.1	29.82	757.4	60.0	15.6	.....	W	.....	.....	3	.....	2	.....	.....	.....	.....	D. clouds.....	Corpl. C. Aitken, A. H. C.
Glasgow, Observatory	29.62	752.3	29.82	757.4	45.1	7.2	.....	SSE	.....	.....	3	.....	10	.....	.....	.....	.....	Raining.....	D. G. Maclean.
Great Yarmouth	30.01	762.2	30.02	762.5	41	5.0	.....	SE	.....	.....	4	.....	6	.....	.....	.....	.....	D. clouds.. ..	G. T. Watson.
Greenwich, Royal Obs'y	29.79	756.7	29.97	761.2	38.6	3.7	.....	E	.....	.....	1	.....	10	.....	.....	.....	.....	Overcast.....	The Staff, for G. B. Airy.
Guernsey	29.65	753.1	29.84	757.9	42.5	5.8	.....	ESE	.....	.....	2	.....	0	.....	.....	.....	.....	Blue sky.....	Dr. S. E. Hoskins, F.R.S.
Helston	.....	.....	29.87	758.7	50	10.0	.....	E	.....	.....	1	.....	3	.....	.....	0	0	D. clouds.....	M. P. Moyle.
Holyhead	29.81	757.2	29.87	758.7	46	7.8	.....	SSW	.....	.....	3	.....	10	.....	.....	.....	.....	Misty.....	John Tilston.
Jersey	29.61	752.1	29.91	759.7	41.9	5.5	.....	E	.....	.....	3	.....	0	.....	.....	.....	.....	Blue sky.....	J. Fisher.
Kew, Observatory	.....	.....	29.97	761.2	39.5	4.2	.....	SE	7	3.1	.....	.....	10	.....	.....	.....	.....	Hazy.....	The Staff.
Kingstown	29.79	756.7	29.82	757.4	48	8.9	.....	SSE	.....	.....	3	.....	10	.....	.....	.....	.....	Raining.....	George Mitchell.
Leicester, Museum	.....	.....	29.98	761.5	40.5	4.7	.....	S	.....	.....	2	.....	10	.....	.....	.....	.....	Overcast.....	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.88	758.9	29.95	760.7	62.2	16.8	.....	NW	.....	.....	6	.....	6	.....	.....	.....	.....	D. clouds.....	Sgt. Fred. Travis, A. H.
Nairn	29.66	753.4	29.75	755.6	45	7.2	.....	Calm	.....	.....	0	.....	10	.....	.....	.....	.....	Overcast.....	W. D. Penny. [C.
Nassau, (Bahamas)	.....	.....	30.22	767.6	70.8	21.6	.....	NE	.....	.....	7	.....	8	.....	.....	.....	.....	D. clouds.....	C. S. Duncombe.
Nottingham, Observatory	29.80	756.9	30.00	762.0	42.2	5.7	.....	SE	.....	.....	2	.....	10k;d	.....	ESE	0	0	Overcast.....	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.42	747.3	29.95	760.7	38.7	3.7	.....	SE	.....	.....	2	.....	9	.....	.....	.....	.....	D. clouds	Rev. Stephen Whitty
Oxford, Radcliffe Obs'y	.....	.....	29.95	760.7	41	5.0	.....	E	.....	.....	1	.....	10	.....	.....	.....	.....	Gloomy.....	Mr. Lucas.
Plymouth	29.80	756.9	29.88	758.9	48.0	8.9	.....	ESE	.....	.....	2	.....	2	.....	.....	.....	.....	D. clouds.. ..	John Merrifield.
Roche's Point	29.79	756.7	29.84	757.9	48	8.9	.....	NW	.....	.....	4	.....	8	.....	.....	.....	.....	Dull	W. Kennedy.
Saint Ann's Head	29.71	754.6	29.87	758.7	48	8.9	.....	SE	.....	.....	4	.....	10	.....	.....	.....	.....	Raining.....	John C. Walker.
Sandwick Manse, (Orkneys.)	.....	.....	29.80	756.9	43.3	6.3	.....	NE	8	3.6	.....	.....	10	.....	.....	.....	.....	Misty.....	Rev. C. Clouston, LL. D
Scutari, Cemetery, (Turkey)	.....	.....	29.85	758.2	44.6	7.0	.....	N	.....	.....	2	.....	10	.....	.....	.....	.....	Raining.....	Sergt. W. H. Lyne.
Sheffield	29.68	753.9	30.00	762.0	40.1	4.5	.....	S	.....	.....	2	.....	7	.....	.....	0.02	0.5	Overcast.. ..	W. F. Cooper.
Silloth Rectory	29.84	757.9	29.87	758.7	44.3	6.8	91	Calm	.....	.....	0	.....	10	.....	.....	0.300	7.62	Overcast.....	Rev. F. Redford, M. A.
Stonyhurst, Observatory	.....	.....	.....	.....	42.0	5.6	.....	SE	.....	.....	1	.....	10	.....	.....	.....	.....	Overcast.....	Rev. S. J. Perry.
Stornoway, Lews C. (Hebr.)	.....	.....	29.74	755.4	41	5.0	.....	NNW	.....	.....	1	.....	10	.....	.....	.....	.....	Overcast.....	John Smith.
Stratfield Turgiss	29.75	755.6	29.97	761.2	39.1	3.9	.....	Calm	.....	.....	0	.....	10	.....	.....	.....	.....	Overcast.....	Rev. C. H. Griffith, F.M.S
Thurso	.....	.....	29.77	756.1	44	6.7	.....	NW	.....	.....	1	.....	9	.....	.....	.....	.....	Gloomy.....	John Trotter.
Truro, Royal Institution	.....	.....	29.87	758.7	50	10.0	.....	SE	.....	.....	2	.....	8	.....	.....	.....	.....	Gloomy.....	W. Newcombe.
Valencia, Observatory	.....	.....	29.71	754.6	45.9	7.7	.....	NW	29	13.0	.....	.....	6	.....	.....	.....	.....	D. clouds.....	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Henry Mercer.
Cape Good Hope, Obs'y	30.11	764.8	30.15	765.8	71.6	22.0	56	W	14	6.3	.....	6	9	.....	.....	.....	.....	.....	The Staff, for E. J. Stone.
Hobart Town, (Tasmania)	.....	.....	30.14	765.5	58.0	14.4	82	NW	.....	.....	3	.....	3k	.....	.....	0	0	.....	Francis Abbott, F.R.A.S.
Leith, Restalrig Park	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Andrew Gibb.
Mauritius, Observatory	29.90	759.4	30.08	764.1	80.8	27.1	65	E	15.0	6.7	.....	4	3	W	E	0	0	Squally.....	C. Meldrum.
Melbourne, Observatory	30.22	767.6	30.31	769.9	63.0	11.7	75	SSE	6	2.7	.....	.....	0	.....	.....	0	0	Very fine.....	R. L. J. Ellery.
Monach L't-house, (Hebrides)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Youngclause.
North Unst, (Shetland Is.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Robert Burnet.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m.

Marine Series. Vessels.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea or swell. Height scale 0—9	Sea or swell. Direction from—	Weather.	Observer.
S. S. Algeria, N. 42° 45', W. 57° 25'	30.13	765.3	41	5.0	.....	NW	.....	.....	1	.....	9	.....	.....	5*	W	Showery.....	Capt. W. Watson.
S. S. Batavia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. J. E. Mouland.
Ship Camperdown	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. A. T. Miller.
Brig Catherine	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. Adam Smith.
Barque Celeste	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. D. F. McKechnie
S. S. Hibernia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. W. R. Cato
Barque Maroon	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. A. T. Brown.
Ship Mikado	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. C. C. Prehn.
S. S. Seine	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. H. Manning.
Barque Sorata	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. Jas. J. Price.
Schooner Traveller	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. Alex Simpson
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. *Feet

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	BAROMETER. Corrected for instrumental error and temperature. Inches.	BAROMETER. Corrected for instrumental error and temperature. Millimeters.	BAROMETER. Reduced to sea-level. Inches.	BAROMETER. Reduced to sea-level. Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Upper. From—	CLOUDS. Direction. Lower. From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	WEATHER.	OBSERVER.
San José	26.19	665.2	.....	.....	68.9	20.5	89	SE	.....	.....	3	2ck	6ks;njd	.....	NE	Blank	Blank	.....	Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	30.27	768.8	30.32	770.0	38.3	3.5	78	SSE	.....	.....	2	.....	10	.....	.....	.....	.....	.....	
Farõe	30.20	767.1	30.22	767.6	33.3	0.7	92	SSE	.....	.....	6	.....	10	.....	.....	.....	.....	.....	
Godthaab, (Greenland)	29.48	748.8	29.52	749.9	12.2	—11.0	82	Calm	.....	.....	0	.....	10	.....	.....	.....	.....	.....	
Stykkisholm, (Iceland)	29.04	737.7	29.09	738.8	31.8	— 0.1	92	SW	.....	.....	8	.....	8	.....	.....	.....	.....	.....	
Thorshavn, (Farõe)	29.67	753.5	29.70	754.4	41.0	5.0	88	SW	.....	.....	3	.....	3	.....	.....	.....	.....	.....	Snowing
Vestervig	30.07	763.6	30.23	767.9	34.2	1.2	92	S	.....	.....	4	.....	10	.....	.....	.....	.....	.....	Raining, Foggy

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

Alençon, Normal School	29.34	745.2	29.89	759.2	46.4	8	76	NW	.....	.....	1	.....	5	.....	NW	0	0	Cloudy	Collignon, Director.
Amiens, Normal School	29.76	755.9	29.88	758.9	40.3	4.6	90	E	.....	.....	2	.....	0	.....	.....	0	0	Clear	Bonvarne, Director.
Avignon, Normal School	29.80	757.0	29.88	759.0	43.2	6.2	67	N	.....	.....	1	.....	8	.....	S	Inap.	Inap.	Light rain	Mr. Giraud, Director.
Bar-sur-Seine	29.31	744.5	29.89	759.3	41.4	5.2	71	S	.....	.....	2	.....	0	.....	.....	0	0	Clear	C. Saillard.
Beaumette Obs'y (Angers)	29.67	753.5	29.84	757.8	33.8	1.0	88	E	3.6	1.6	.....	.....	.....	.....	E	0	0	.....	Albert Oheux.
Beauvais	29.64	752.8	29.93	760.2	37.6	3.1	81	ESE	.....	.....	1	.....	0	.....	.....	0	0	Clear	Normal School.
Besançon	29.02	737.1	29.95	760.6	39.9	4.4	80	E	.....	.....	2	.....	0	.....	.....	0	0	Clear	Normal School.
Bourg-en-Bresse	29.08	738.6	29.98	761.6	32.2	0.1	97	N	.....	.....	4	2c	.....	SE	.....	0	0	Slightly cl'dy	Normal School.
Bourges, Normal School	29.30	744.2	29.87	758.6	39.2	4	83	ESE	.....	.....	4	.....	1	.....	ESE	0	0	Clear	A. Wagner, Director.
Brest, Naval Observatory	29.58	751.2	29.80	756.8	41.2	5.1	80	SE	.....	.....	1	.....	9	.....	Calm	0	0	.....	The Staff.
Carcassonne, Normal School	29.37	745.9	29.79	756.6	46.8	8.2	94	E	.....	.....	4	.....	5	.....	N	0	0	Cloudy	Vateau, Director.
Caen	29.85	758.3	29.93	760.2	39.9	4.4	87	N	.....	.....	2	.....	2	.....	SSE	0	0	Slightly cl'dy	Normal School.
Chartres, Normal School	29.24	742.6	29.82	757.3	43.9	6.6	.....	E	.....	.....	2	.....	1	.....	E	0	0	.....	Lequin, Director.
Châlons-sur-Marne, N. Sch'l	29.61	752.2	29.93	760.3	39.9	4.4	80	SE	.....	.....	3	.....	0	.....	.....	0	0	Clear	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.39	721.2	29.70	756.7	35.6	2.0	67	SE	.....	.....	1	.....	1	.....	.....	0	0	Clear	Alluard, Director.
Commercy, Normal School	29.09	738.8	30.00	762.1	36.5	2.5	79	E	.....	.....	6	.....	2	.....	E	0	0	Clear	Goulet, Director.
Commune de Gréasque*	28.76	730.4	29.90	759.4	51.3	10.7	44	NE	.....	.....	2	.....	2	.....	NE	0	0	¾ covered	M. Kina.
Grenoble	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Normal School.
La Roche-sur-Yon, N. School	29.59	751.6	29.82	757.3	39.2	4.0	76	E	.....	.....	1	.....	0	.....	.....	0	0	Clear	Mouillot, Director.
Le Mans, Normal School	29.52	749.8	29.84	757.8	36.5	2.5	86	E	.....	.....	2	.....	2	.....	E	0	0	Slightly cl'dy	Poirrier, Director.
Lons-Le-Saulnier, N. School	28.99	736.3	29.93	760.1	34.2	1.2	78	NW	.....	.....	2	.....	0	.....	.....	0	0	Clear	Voudez, Director.
Lorient, Naval Observatory	29.75	755.6	29.85	758.1	39.9	4.4	62	N	.....	.....	3	.....	2	.....	N	0	0	¾ covered	T. Carré, Director.
Mâcon, Normal School	29.20	741.7	29.57†	751.0†	30.7	— 0.7	.....	NNE	.....	.....	2	.....	0	.....	.....	0	0	Clear	M. Marchal, Director.
Metz	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. A. Schuster, Dir.
Mirecourt	28.84	732.4	29.92	759.9	36.0	2.2	82	NW	.....	.....	2	.....	1	.....	SE	0	0	Clear	Normal School.
Nismes, Normal School	29.66	753.4	29.87	758.7	47.1	8.4	83	E	.....	.....	2	.....	10	.....	S	0	0	Covered	Boyer, Director.
Orleans, Normal School	29.51	749.6	29.90	759.4	38.5	3.6	76	NE	.....	.....	2	.....	0	.....	.....	0	0	Clear	Bernard, Director.
Paris, Observatory	29.64	752.9	29.89	759.1	39.6	4.2	73	E	.....	.....	1	1c	.....	.....	.....	0	0	Clear	National Observatory.
Privas	28.80	731.4	29.86	758.5	52.7	11.5	67	S	.....	.....	2	.....	10	.....	S	0	0	Covered	Normal School
Rochefort, Naval Obs'y	29.75	755.6	29.78	756.4	39.6	4.2	80	E	.....	.....	3	.....	10	.....	W	0	0	Covered	Lt. Decante, Director.
Rouen, Normal School	29.81	757.1	29.89	759.3	41.4	5.2	68	NE	.....	.....	2	.....	0	.....	.....	0	0	Clear	F. Lucard, Director.
Tarbes, Normal School	28.76	730.6	29.87	758.6	46.4	8	86	W	.....	.....	2	.....	0	.....	.....	0	0	Clear	T. Hugues, Director.
Villefranche	29.17	740.9	29.91	759.7	36.1	2.3	91	SE	.....	.....	2	.....	10	.....	Calm	0	0	Covered	Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.82	757.3	29.84	758.0	78.8	26	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0	.....	L'Abbé Marchési.
Marseilles, Observatory	.....	.....	29.87	758.8	56.7	13.7	63	SE	.....	.....	2	.....	4	.....	.....	0	0	.....	The Staff.
Mont-Louis	24.59	624.5	29.90	759 5	39.0	3.9	66	E	7.4	3.33	.....	.....	8	.....	WSW	0	0	.....	Mr. Falguère.
Nice	.....	.....	29.90	759.4	54.1	12.3	49	E	.....	.....	4	.....	5	.....	.....	0	0	Cloudy	Dr. A. Niepce.
Paris, Montsouris Obs'y	29.60	751.7	29.87	758.7	41.5	5.3	68	E	.....	.....	2	.....	0	.....	.....	0	0	.....	Marié Davy, Director.
Perpignan	.....	.....	29.77	756.2	47.7	8.7	82	NE	5.6	2.50	.....	.....	10	.....	S	0	0	.....	Dr. Fines.
Pic du Midi, (Summit,) H. P.	20.87	530.1	.....	.....	28.8	— 1.8	.....	S	.....	.....	1	.....	9	.....	.....	.....	.....	.....	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.22	564.3	.....	.....	36.9	2.7	.....	S	.....	.....	1	.....	9	.....	.....	.....	.....	Fair	Gen'l de Nansouty.
Saint Maur, (near Paris)	29.72	754.8	29.88	759.0	41.9	5.5	66	E	.....	.....	2	1c	.....	NE	.....	0	0	Fair	E. Renou.
Toulouse, Observatory	29.07	738.3	29.78	756 5	49.8	9.9	81	SSE	.....	.....	3	.....	8	.....	.....	0	0	Clear	The Staff.
Tours	29.63	752.6	29.83	757.6	33.1	0.6	88	E	.....	.....	1	.....	10	.....	E	0.055	1.40	.....	C. Marquet.
Versailles, (near Paris)	.....	.....	29.87	758.7	40.6	4.8	69	SE	.....	.....	2	.....	0	.....	.....	0	0	.....	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.37	771.4	30.39	772 0	42.8	6.0	85	NE	2.2	1.0	.....	.....	7k	.....	.....	0.006	0.15	Clear	Marc Dechevrens, S. J.
	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0	Cloudy	

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published. At Mirecourt and Rochefort the cloud directions are apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône. †Probably 29.88 inches, and 759.0 mm.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instru-m'tal error and temperature. Inches.	Barometer. Corrected for instru-m'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg																			Prof. Dr. Hoh.
Berlin	30.07	763.8	30.25	768.3	37.8	3.2	75	E			1		10			0	0		Prof. Arndt.
Breslau	29.72	754.9	30.26	768.5	32.5	0.3	71	ESE			2		10			0	0		Royal University Obs'y.
Carlsruhe	29.59	751.5	30.03	762.7	38.5	3.6	66	NE			1		10			0	0		Albert Senz.
Cassel	29.58	751.3	30.19	766.8	35.1	1.7	73	E			2		8	E		0	0		Dr. H. Möhl.
Crefeld	29.90	759.5	30.07	763.9	39.9	4.4	66	SE			3		0			0	0		Director Lose.
Emden	30.21	767.4	30.25	768.3	33.3	0.7	95	ESE			2		5			0	0		Prof. Prestel.
Frankfort on the Main	29.75	755.7	30.13	765.4	37.0	2.8		E			2		8			0	0		Physical Society.
Friedrichshafen	28.54	724.8	30.03	762.7	34.5	1.4	78	ESE			1		10	E		0	0	Föhn	M. Wilhelm.
Hamburg	30.18	766.6	30.26	768.5	35.2	1.8	90	SE			3		10ks			0.012	0.3	Light fog	Captain F. Hegemann.
Kiel	30.24	768.2	30.26	768.6	36.0	2.2	82	ESE			1		10			0.006	0.16		Prof. G. Karsten.
Königsberg, (Prussia)	30.30	769.6	30.38	771.6	29.3	— 1.5	84	NE								0	0	Cloudy	Prof. E. Luther.
Köslin			30.31	769.9	37.0	2.8		Calm			0		4			0	0		H. Müller.
Leipsic, Observatory	29.81	757.2	30.25	768.4	34.7	1.5	80	E			3		10			0	0		Prof. Bruhns.
Memel, Naval School	30.35	771.0	30.40	772.2	33.4	0.8	83	SE			1		10ks						Reinbrech von Skalweit.
Neufahrwasser	30.35	770.9	30.37	771.3	35.1	1.7	80	SE			1		10			0.031	0.8		A. Lothes.
Posen	30.38?	771.6?	30.68?	779.3?	32.9	0.5	71	N			3-4					0.028*	0.70*	Covered	Dr. Magener.
Strassburg Obs., (in Alsace	29.47	748.5	30.04	763.0	37.8	3.2	65	E			2		9	E		0	0		Dr. Schur.
Stuttgart	29.05	737.8	30.02	762.6	36.1	2.3	65	E			1		10			0	0		Prof. Schoder.
Treves, (Trier)	29.41	746.9	29.93	760.1	38.8	3.8	63	E			2		3			0	0		Prof. Flesch.
Weissenburg, (Bavaria)	28.51	724.1	30.08	764.1	33.6	0.9	78	ENE	7	3			10		E	0	0	Covered	Dr. Von Bebber.
Wustrow, Naval School	30.35	770.9	30.38	771.6	39.6	4.2	81	SE			2		10			0	0	Foggy	E. F. Schütz.
German Naval Series.																			

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet: Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4. Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines, Königsberg, Posen and Wustrow in cubic zolls. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time. *Precipitation in 48 hours.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.41	747.0	29.81	757.2	52.2	11.2		NE			2							⅛ Clear	Dr. J. F. J. Schmidt.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and wind-force; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	30.02	762.4	30.07	763.8	63.7	17.6	52	WNW	18.0?	8.0?			0			0	0	Misty	
Deesa	29.64	752.7	30.14	765.5	61.1	16.2	40	Calm					0			0	0	Blue sky	
Bombay	30.00	762.0	30.04	763.0	74.9	23.8	65	NNW	13.0	5.8			0			0	0	Blue sky	
Poona	27.95	710.0	29.98	761.4	74.6	23.7	61	NW					1			0	0	D. clouds	
Lahore	29.36	745.7	30.16	766.1	48.7	9.3	82	N	3.3	1.5			2			0.43	10.9	Blue sky	
Belgaum	27.41	696.3	29.96	760.9	76.8	24.9	77	Calm					3	WSW		0	0	D. clouds	
Bangalore																			
Roorkee	29.22	742.1	30.18	766.4	52.8	11.6	80	Calm	7.8	3.5			2			2.30	58.4		
Agra	29.55	750.6	30.15	765.8	57.8	14.3	70	W								0	0		
Trichinopoly																			
Nagpur	28.95	735.3	30.01	762.3	72.1	22.3	79	Calm	4.4	2.0			10		N	1.17	29.7	Overcast	
Madras																			
Lucknow	29.68	754.0	30.07	763.8	66.6	19.2	81	SE	6.6	3.0			10			1.20	30.5	Overcast	
Allahabad	29.76	755.9	30.08	764.1	66.1	18.9	95	N	3.5	1.6			8		SW	0.41	10.4	D. clouds	
Patna	29.88	758.8	30.06	763.6	69.6	20.8	57	W	1.3	0.6			8	SE	W	0	0	D. clouds	
Hazaribagh	28.02	711.6	30.08	764.0	68.3	20.2	65	ESE	12.3	5.5			5		SW	0	0	Thunder	
Cuttack	29.99	761.7	30.07	763.8	77.0	25.0	68	E	0.4	0.2						0	0	Blue sky	
Calcutta (Alipore)	30.06	763.5	30.08	763.9	69.9	21.1	80	NW	0.5	0.2			0			0	0	Blue sky	
Goalpara	29.66	753.3	30.06	763.5	69.8	21.0	74	SE	2.6	1.2			6	SW		0	0	D. clouds	
Chittagong	29.98	761.4	30.07	763.8	74.8	23.8	86	WSW	2.8	1.2			0			0	0	Blue sky	
Sibsagar	29.78	756.5	30.14	765.5	64.7	18.2	88	ENE	0.7	0.3			0			0	0	Blue sky	
Rangoon																			
Jubbulpore	28.65	727.7	30.06	763.4	67.9	19.9	80	S	6.6	3.0			10	S	S	0	0	Overcast	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,092.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 1—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	21.95	557.5	29.96	760.9	19.2	— 7.1	75	NE	.....	.....	2	.....	10	.....	.....	0	0	.....	Ab. Dom. Mongini.
Stelvio	21.94	557.2	29.99	761.8	16.2	— 8.8	.....	SSE	.....	.....	1	.....	0	.....	.....	0	0	.....	Signora Ernesta Manfredi.
Udine	29.88	751.3	30.00	761.9	42.6	5.9	47	SE	8.7	3.9	.....	.....	2	.....	.....	0	0	.....	Prof. Giovanni Clodig.
Padua	29.89	759.3	30.00	762.1	43.0	6.1	53	NE	12.5	5.6	.....	.....	1	.....	.....	0	0	.....	Prof. Dott. Lorenzoni.
Vicenza	29.82	757.3	30.01	762.3	42.8	6.0	60	ENE	1.3	0.6	.....	.....	2	.....	.....	0	0	.....	Conte Alm. Da Schio.
Verona	29.78	756.3	30.00	762.1	46.4	8.0	53	ESE	11.9	5.3	.....	.....	0	.....	.....	0	0	.....	Dott. B. Bertoncelli.
Bergamo	28.65	727.7	30.00	762.0	41.7	5.4	60	S	.....	.....	2	.....	9	.....	.....	0	0	.....	Prof. Trionfini Carlo.
Domodossola	28.98	736.0	30.03	762.8	36.1	2.3	75	.....	.....	.....	.....	.....	10	.....	.....	0	0	.....	Prof. Giuseppe Calza.
Milan	29.50	749.2	30.03	762.8	44.6	7.0	.....	ESE	.....	.....	2	.....	7	NNW	.....	0	0	.....	Ab. Gio. Capelli.
Pavia	29.66	753.3	30.01	762.3	42.8	6.0	67	E	.....	.....	4	.....	2	SE	.....	0	0	.....	Prof. Gio. Cantoni.
Moncalieri	29.11	739.3	30.04	762.9	37.4	3.0	84	NNE	1.3	0 6	.....	.....	9	SE	.....	0	0	.....	Prof. P. F. Denza.
Mondovi	28.98	713.1	30.03	762.8	35.2	1.8	75	NW	.....	.....	2	.....	9	.....	.....	0	0	.....	Prof. D. C. Bruno.
Porto Maurizio	29.71	754.5	29.93	760.2	52.3	11.3	24	ENE	.....	.....	4	.....	7	NW	.....	0	0	.....	Prof. L. Vassallo.
Genoa	29.78	756.4	29.95	760 8	46.4	8.0	46	N	9.4	4.2	.....	.....	4	SW	.....	0	0	.....	Prof. G. M. Garibaldi.
Piacenza	29.75	755.6	30.01	762.3	42.1	5.6	68	ESE	8.1	3.6	.....	.....	0	.....	.....	0	0	.....	Dott. G Manzi.
Parma	29.70	754.3	30.02	762.6	42.8	6.0	72	E	.....	.....	2	.....	1	.....	.....	0	0	.....	Prof. P. Pigorini.
Florence	29.69	754.1	29.95	760.7	47.3	8.5	52	N	.....	.....	4	.....	4	.....	.....	0	0	.....	Cav. F Meucci.
Leghorn	29.83	757.6	29.91	759.8	48.2	9.0	64	ENE	13.7	6.1	.....	.....	3	.....	.....	0	0	.....	Prof. P. Monte.
Siena	28.67	728 2	29.89	759.3	46.0	7.8	56	E	4.9	2.2	.....	.....	1	E	.....	0	0	.....	Prof. L. Toscani.
Urbino	28.36	720.3	29.94	760.4	38.8	3.8	91	N	.....	.....	2	.....	10	.....	.....	0.028	0.7	.....	Prof. P. Serpieri.
Pesaro	29.92	759.9	29.97	761.2	41.1	6.7	88	NW	32.2	14.4	.....	.....	10	NW	.....	0.016	0.4	.....	Prof. Luigi Guidi.
Ancona	29.86	758.4	29.97	761.2	45.7	7.6	86	WNW	.....	.....	6	.....	10	.....	.....	0.252	6.4	.....	Prof. F. DeBosis.
Grosseto	29.78	756.5	29.90	759 4	52.0	11.1	61	NNE	.....	.....	2	.....	2	NE	.....	0	0	.....	Avv. P. Ponticelli.
Rome	29.70	754.4	29.88	758.9	49.6	9.8	74	NNE	3.1	1.4	.....	.....	10	.....	.....	0.020	0.5	.....	Prof. P. A Secchi.
Naples, O. U.	29.67	753.7	29.87	758.8	57.9	14.4	46	NE	0	0	.....	.....	5	NW	.....	0	0	.....	Prof. L. Palmieri.
Lecce	29.58	751.4	29.84	757.8	54.9	12.7	76	NNE	3.8	1.7	.....	.....	5	N	.....	0.138	3.5	.....	Prof. C. De Giorgi.
Cosenza	29.00	736.5	29.89	759.3	54.0	12.2	70	NE	0	0	.....	.....	0	.....	.....	0.220	5.6	.....	Prof. F. D. Conti.
Cagliari	.....	.....	.....	.....	55.9	13.3	46	S	.....	.....	2	.....	0	.....	.....	0	0	.....	Prof. A. Pacinotti.
Riposto, (Sicily)	.....	.....	.....	.....	60.8	16.0	41	S	.....	.....	2	.....	5	.....	.....	0	0	.....	Prof. F. Cafiero.
Palermo	29.58	751.4	29.84	757.9	55.9	13.3	63	W	3.8	1.7	.....	.....	5	.....	.....	0.299	7.6	.....	Prof. G. Cacciatore.
Caltanissetta	27.91	708.9	29.87	758.7	50.2	10.1	61	WNW	.....	.....	4	.....	5	NE	.....	0	0	.....	Prof. A. Pagani.
Syracuse	29.78	756.5	29.86	758.4	58.5	14.7	65	SE	.....	.....	4	.....	5	NW	.....	0	0	.....	Prof. V. Giuliano.
SUB-SERIES.																			
Naples, S. R.	29.35	745.6	29.91	759.7	54.1	12.3	62	NE	0	0	.....	.....	6	.....	.....	0	0	.....	Prof. F. Brioschi.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,543.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Siena, 348.5 m., or 1,143.3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Tokei (Yeddo)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	The Observatory.
Tokei (Yeddo) University	30.07	763.8	30.17	766.4	40.5	4.7	87	NW	14	6.3	.....	.....	5s	.....	.....	0	0	Fair	Prof. P. V. Veeder.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Aguascalientes	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	I. N. Marin, M. D.
Córdoba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	C. Peña, M. D.
Cuernavaca	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	L. Castillo, A. E.
Guadalajara	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. L. Perez.
Guanajuato	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. V. Fernandez.
Leon	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. M. Leal.
Mexico	23.10	586.7	30.21	767.4	50.0	10.0	91	Calm	0	0	.....	2ck	4ks	W	W	0	0	Cloudy	Central Observatory.
Orizaba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	N. N.
Orizaba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	I. Orozco, M. D.
Pabellon, (Aguascalts)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. V. de Leon, M. E.
Puebla	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. B. Gonzalez.
Toluca	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. C. Velazquez.
Tlacotalpam	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. F. R. Bayly.
San Luis Potosi	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	G. Barroeta, M. D.
Vera-Cruz	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. J. Rossell.
Zacatecas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. A. Bonilla, M. E.
Puebla, (Catholic Institute)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	P. Spina. [M. M. D. D.
Morelia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Tena, F. L. Páramo

NOTE.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,293 m., or 7,512.9 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosí, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	30.02	762.6	30.02	762.6	39.2	4.0	.....	E	.....	.....	4	.....	.....	.....	.....	0	0	.....	
Groningen	30.10	764.4	30.15	765.8	36.0	2.2	.....	ESE	.....	.....	2	.....	.....	.....	.....	0.024	0.6	.....	
Helder	30.07	763.6	30.07	763.6	37.4	3.0	.....	ESE	.....	.....	2	.....	.....	.....	.....	0	0	.....	
Hellevoetsluis	.....	.....	30.03	762.8	36.7	2.6	84	E	.....	.....	4	.....	.....	.....	.....	.....	.....	.....	
Utrecht	30.03	762.8	30.08	764.0	37.9	3.3	68	ESE	.....	.....	4	.....	0	.....	.....	0	0	Clear	H. v d Brink.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	30.01	762.3	30.07	763.7	45.0	7.2	89	S	35.7	15.9	.....	.....	8	.....	.....	0.028	0.7	.....	
Brönö	29.81	757.2	29.85	758.2	46.4	8.0	64	S	18	8	.....	.....	10	.....	.....	0.858	21.8	Light rain....	
Christiania	30.03	762.8	30.18	766.6	42.8	6.0	90	SSW	7	3	.....	.....	10	.....	.....	0	0	Light fog.....	
Tromsö	29.60	751.7	29.64	752.8	45.7	7.6	64	SW	11	5	.....	.....	10	.....	.....	0.378	9.6	Light rain...	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	30.45	773.5	30.65	778.4	57.2	14.0	84	N	1.8	0.8	.....	.....	2	.....	.....	0	0	.....	Dr. J. A. Sampaio.
Campo Major	28.79	731.3	29.83	757.7	52.7	11.5	87	WNW	11.2	5.0	.....	.....	10	WNW	.....	0.567	14.4	.....	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.25	768.3	30.32	770.1	68.5	20.3	46	SSE	6.9	3.1	.....	.....	3	.....	.....	0	0	.....	Capt. D. A. da Cunha.
Lisbon, Observatory	29.58	751.2	29.94	760.5	52.2	11.2	69	N	23.7	10.6	.....	.....	10	NW	.....	0.063	1.6	.....	The Staff.
Ponta Delgada, (Azores)	30.60	777.1	30.67	778.9	63.7	17.6	50	S	.....	.....	.....	.....	6	.....	.....	0	0	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

Naval Series. Vessels.																Sea or swell. Height scale 0–9	Sea or swell. Direction from—		
S. S. Bartholomew Dias	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
S. S. India	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. A. T. Pinha, Com'd't.
S. S. Mindello	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. D. Pedroso, Com'd't.
S. S. Sado	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. F. R. R. Bastos, Com'd't.
S. S. Sá da Bandeira	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. N. P. Sampaio, Com'd't.
S. S. Tejo	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. Texeira da Silva, Com'd't.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. J. Ferreina,dos Amas,Com'd't

NOTE.—The originals, except for S. S. Tejo, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.87	758.6	30.32	770.1	25.9	— 3.4	82	E	9	4	.....	.....	10ks	.....	.....	.....	.....	.....	Astronomical Obs.
Wilna	29.96	760.9	30.41	772.3	27.0	— 2.8	89	Calm	0	0	.....	.....	10	.....	.....	.....	.....	Heavy clouds	Astronomical Obs.
Dorpat	30.17	766.4	30.43	773.0	31.6	— 0.2	90	Calm	0	0	.....	.....	10n	.....	.....	.....	.....	.....	Prof. Dr. Weihrauch
St. Petersburg	30.37	771.3	30.38	771.7	28.6	— 1.9	93	S	4	2	.....	.....	2s	.....	.....	.....	.....	.....	Central Physical Obs.
Kuopio	29.84	757.8	30.17	766.3	36.5	2.5	98	SW	13	6	.....	.....	10	.....	.....	.....	.....	.....	Ch. Forsten.
Kieff	29.51	749.5	30.19	766.7	25.5	— 3.6	87	N	7	3	.....	.....	10ks	.....	.....	.....	.....	.....	Physical Cabinet.
Nikolaiev	.....	.....	.....	.....	33.6	0.9	92	NNE	18	8	.....	.....	10n	.....	.....	.....	.....	.....	Kurdukof.
Kertch	29.94	760.5	29.96	761.0	39.2	4.0	97	E	9	4	.....	.....	10	.....	.....	.....	.....	.....	Lagorio.
Moscow	29.91	759.7	30.52	775.1	15.3	— 9.3	94	S	7	3	.....	.....	5s	.....	.....	.....	.....	.....	Meteorological Obs.
Lugan	29.92	760.0	30.14	765.5	25.5	— 3.6	78	E	18	8	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Archangel	29.98	761.6	30.00	762.1	33.8	1.0	100	WSW	18	8	.....	.....	10	.....	.....	.....	.....	.....	Ogorodnikof.
Tiflis	28.55	725.1	29.99	761.8	44.4	6.9	66	S	13	6	.....	.....	2k	.....	.....	.....	.....	Raining.....	Physical Observatory.
Astrakhan	30.30	769.7	30.22	767.6	33.4	0.8	70	ESE	13	6	.....	.....	8s	.....	.....	.....	.....	.....	Sebastianof.
Kasan	30.14	765.6	30.44	773.1	15.3	— 9.3	94	Calm	0	0	.....	.....	6	.....	.....	.....	.....	.....	Physical Cabinet.
Orenburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Tschernischef.
Ekaterinburg	29.05	737.9	30.07	763.8	18.5	— 7.5	89	W	27	12	.....	.....	4	.....	.....	.....	.....	.....	Meteorological Obs.
Nukuss	30.04	762.9	30.28	769.2	28.2	— 2.1	73	NNE	9	4	.....	.....	1cs	.....	.....	.....	.....	.....	
Kasaly	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Bobrof.
Tashkend	28.60	726.5	30.43	772.8	28.4	— 2.0	88	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Michelson.
Barnaul	29.80	756.8	30.40	772.2	—12.1	—24.5	82	SW	0	0	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Yeniseisk	29.77	756.2	30.15	765.8	—23.1	—30.6	83	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Marks.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Usolzef.
Oorga	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Mossin.
Krotkowo*	29 97	761.3	30.48	774.2	18.3	— 7.6	83	SW	2	1	.....	.....	3s	.....	.....	.....	.....	.....	Cand. Fatjanow.
Peking, (China)	30.12	765.1	30.26	768.7	22.5	— 5.3	52	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Physical Observatory
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Vladivostock	30.31	769.9	30.35	770.9	13.5	—10.3	57	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	
Nikolaievsk, on the Amoor	.....	.....	.....	.....	—15.2	—26.2	.....	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall; for Krotkowo, the barometer reduced to freezing but not to sea-level. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft. * N. 53° 47′, E. 48° 34′.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Rave, Director.
Bilbao, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Manuel de Naveran
Burgos, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Domingo Martin y Perez.
Madrid, Royal Observatory	27.47	697.8	29.72	754.9	47.3	8.5	95	W	7.4	3.33	.....	.....	10	.....	.....	0.350	8.9	Rainy.....	The Staff.
Murcia, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Olayo Diaz, Director.
Santiago, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	30.11	764.8	30.18	766.5	70.4	21.3	80	ENE	6.0	2.7	.....	5c	2k	W	E	5.819	147.8	Fair.....	Benito Vines, S. J.
San Fernando, Naval Obs'y	29.79	756.5	29.88	759.0	58.8	14.9	83	WNW	10.8	4.8	.....	4	4	NW	NW	0.168	4.0	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, I. W.	.....	.....	29.91	759.8	78.1	25.6	81	E	7.7	3.45	.....	4cs	3k	E	E	0.246	6.25	D. clouds....	Leonardo de Tejeda, Chief of Engineers.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

SWEDISH SERIES.

Furnished by the cöoperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

STATIONS	Barometer. Corrected for instru'm'tal error and temperature. Inches.	Barometer. Corrected for instru'm'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.97	761.2	30.01	762.2	35.6	2.0	.....	SW	.....	.....	4	.....	10	.....	.....	0	0	.....	
Umea	29.97	761.2	30.02	762.5	32.0	0.0	100	Calm	.....	.....	0	.....	8	.....	.....	0.055	1.4	.....	
Hernosand	29.99	761.8	30.04	763.1	36.3	2.4	89	SW	.....	.....	2	.....	5	.....	.....	0	0	.....	
Stockholm	30.04	763.1	30.22	767.6	40.6	4.8	90	SSW	.....	.....	2	.....	10	.....	.....	0	0	.....	
Wisby	30.22	767.5	30.28	769.0	39.2	4.0	80	W	.....	.....	6	.....	5	.....	.....	0	0	.....	
Sub-Series.																			
Upsala	30.13	765.4	30.21	767.3	40.5	4.7	97	SW	7.8	3.5	.....	.....	10	.....	.....	0.000	0.01	Foggy	Dr. Hildebrandsson.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the cooperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.51	724.2	29.09	761.8	37.0	2.8	67	N	.....	.....	1	.....	7	.....	.....	0	0	Cloudy	The Observatory.
Zurich	28.32	719.4	30.03	762.8	33.4	0.8	81	E	.....	.....	1	.....	10	.....	.....	0	0	Covered	The Observatory.

Note.—For Geneva the corresponding departures from the normal values are: Barometer, —3.1 mm; Thermometer, —0.2 cent.; Relative Humidity, —12 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	29.90	759.4	45.0	7.2	88	N	17	7.5	.....	.....	10	.....	NNW	0.378	9.6	.....	The Observatory.
Fao, (Persian Gulf)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salonica	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	B. Stefanidès.
Valona	.....	.....	29.82	757.3	65.8	18.8	.....	W	.....	.....	1	.....	8	.....	.....	0	0	Very cloudy	A. Bertrand.
Varna	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Imperial Observatory.
Sub-Series.																			
Beirut,(Syria,) Lee Obs'y	30.02	762.5	30.14	765.6	61.3	16.3	93	S	.....	.....	1	.....	10n	.....	SW	1.29	32.8	Raining	Prof. C. V. A. Van Dyck.

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	30.16	766.1	30.23	767.8	13.7	—10.2	74	NW	7.0	3.1	.....	0	.....	.....	.....	.....	.....	.....	Hon. J. Ferguson.
Brockville, Ontario	29.81	757.2	30.13	765.3	28	— 2.2	.....	S	1	0.4	.....	.....	10s	.....	SW	0	0	Cloudy	W. R. Bigg.
*Chatham, N. B	30.14	765.5	30.21	767.3	14	—10.0	87	NW	8	3.6	.....	2k	8ks	NW	NW	0	0	Cloudy	G. A. Blair.
Charlottetown, P. E. Island	30.11	764.8	30.15	765.8	21	— 6.1	83	NW	5	2.2	.....	0	5s	.....	Calm	0	0	Fair	H. J. Cundall, C. E.
Cornwall, Ontario	29.93	760.2	30.13	765.3	23.5	— 4.7	81	SE	.....	.....	2	.....	10s	.....	.....	0	0	Cloudy	James Smith, M. A.
Dalhousie, N. B	30.18	766.6	30.21	767.3	.....	.....	.....	W	.....	.....	1	.....	.....	.....	.....	0.05	1.3	Gloomy	H. A. Johnson.
Esquimault, B. C	29.75	755.6	29.80	756.9	45.8	7.7	96	SE	.....	.....	.....	.....	10	.....	.....	0.38	9.7	Cloudy	W. H. Bevis.
*Father Point, Quebec	30.23	767.8	30.25	768.3	14	—10.0	76	NW	7	3.1	.....	.....	10n	.....	W	0.01	0.3	Threatening	J. McWilliams.
Fredericton, N. B	30.24	768.1	30.31	769.9	26.8	— 2.9	68	W	6.0	2.7	.....	.....	10s	.....	NW	Inap.	Inap.	Fair	Prof. Harrison.
*Fort Garry, Manitoba	28.82	732.0	29.68	753.9	22	— 5.6	94	W	5	2.2	.....	Haze	2ks	W	W	0.040	1.02	Hazy	James Stewart.
Goderich, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	H. J. Strang, M. A.
Granton, Ontario	28.78	731.0	29.92	760.0	31.1	— 0.5	88	SW	.....	.....	1	.....	10n	.....	.....	0	0	Cloudy	James Grant.
*Halifax, N. S	30.03	762.7	30.18	766.6	22	— 5.6	88	NW	3	1.3	.....	2ck	2ks	.....	.....	0.192	3.35	Fair	F. Allison, M. A.
Hamilton, Ontario	29.59	751.6	29.97	761.2	35.7	2.1	70	SW	.....	.....	1	8cs	.....	.....	.....	0	0	.....	Geo. Dickson, M. A
Heart's Content, N. F	29.93	760.2	29.95	760.7	24	— 4.4	86	NE	.....	.....	3	.....	10	.....	.....	0.15	3.8	Snowing	E. Weedon.
*Kingston, Ontario	29.74	755.4	30.10	764.5	31	— 0.6	91	S	10	4.5	.....	.....	10s	.....	Calm	0	0	Cloudy	S. Woods, M. A.
Little Glace Bay, N. S	30.02	762.5	30.06	763.5	28.5	— 1.9	.....	SW	5	2.2	.....	8k	.....	SW	.....	0.10	2.5	Cloudy	C. H. Rigby.
*Montreal, Quebec	29.90	759.4	30.21	767.3	19	— 7.2	85	SE	8	3.6	.....	.....	10n	.....	.....	Inap.	Inap.	Cloudy	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.19	741.4	29.92	760.0	27	— 2.8	94	SE	14	6.3	.....	.....	10n	.....	SE	.....	.....	Light snow	Rev. R. Mosley.
Peterboro, Ontario	29.24	742.7	30.02	762.5	29.6	— 1.3	74	SE	.....	.....	2	.....	10ks	.....	.....	0	0	.....	J. F. Jeffers, B. A.
Port Dover, Ontario	29.26	743.2	29.98	761.5	35	1.7	70	S	19	8.5	.....	.....	10n	.....	S	0	0	Threatening	H. Morgan.
Port Hastings, N. S	30.08	764.0	30.14	765.5	38.1	3.4	.....	NW	5	2.2	.....	.....	.....	.....	.....	0	0	Fine	Peter Grant.
Port Stanley, Ontario	29.29	744.0	29.95	760.7	37	2.8	62	SW	28	12.5	.....	.....	10ks	.....	W	0	0	Cloudy	M. Payne.
*Quebec, Quebec	29.94	760.5	30.29	769.4	12	—11.1	100	Calm	0	0	.....	.....	10n	.....	Calm	0	0	Cloudy	Capt. Ashe, R. N
*Rockliffe, Ontario	29.52	749.8	30.00	762.0	23	— 5.0	80	SE	15	6.7	.....	.....	10s	.....	S	0	0	Cloudy	W. H. McIntyre.
St. John, N. B	30.11	764.8	30.28	769.1	20	— 6.7	85	W	3	1.3	.....	9k	0	.....	.....	0	0	Cloudy	G. Murdock, C. E.
*Saugeen, Ontario	29.13	739.9	29.86	758.4	29	— 1.7	95	S	4	1.8	.....	.....	10s	.....	.....	0.11	2.8	Light snow	K. Stewart.
Stayner, Ontario	29.12	739.6	29.94	760.5	27	— 2.8	95	W	6	2.7	.....	.....	10n	.....	W	0.07	1.8	Light snow	R. J. Cole.
Stratford, Ontario	28.60	726.4	29.94	760.5	29.8	— 1.2	79	SW	10.0	4.5	.....	.....	10s	.....	.....	0	0	Cloudy	C. J. MacGregor, M. A.
*Sydney, C. B	30.04	763.0	30.07	763.8	30	— 1.1	90	NW	4	1.8	.....	10k	0	W	.....	0.06	1.5	Cloudy	T. C. Hill.
*Toronto, Ontario	29.66	750.8	29.96	761.0	34	1.1	88	S	15	6.7	.....	.....	10n	.....	Calm	Inap	Inap.	Light snow	Magnetic Observatory.
Windsor, N. S	30.10	764.5	30.20	767.1	23.0	— 5.0	86	NE	5	2.2	.....	0	8kn	.....	.....	0	0	Fair	Prof. John E. Oram.
Woodstock, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Montgomery.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	27.5	— 2.5	.....	W	.....	.....	.....	Sm'e	Sm'e	.....	.....	0.30	7.6	Snowing	John Delany.

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

By authority of the **SECRETARY OF WAR.** UNITED STATES SERIES.

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	30.03	762.7	30.27	768.8	27	— 2.8	77	SE	2	0.9	.....	Haze	Haze	.....	Calm	0	0	Hazy	
Alpena, Michigan	29.09	738.9	29.76	755.9	28	— 2.2	88	SW	4	1.8	.....	.....	10s	.....	SW	0.03	0.8	Cloudy	
Atlantic City, New Jersey	30.35	770.9	30.37	771.4	37	2.8	71	SW	8	3.6	.....	2cs	0	SW	.....	0	0	Fair	
Augusta, Georgia	30.29	769.4	30.49	774.4	29	— 1.7	89	Calm	0	0	.....	Haze	Sm'e	Calm	Calm	0	0	Smoky	
Baltimore, Maryland	30.28	769.1	30.33	770.4	32	0.0	69	S	4	1.8	.....	Haze	5s	Calm	Calm	0	0	Fair	
Barnegat, New Jersey	30.34	770.6	30.36	771.1	28	— 2.2	88	W	4	1.8	.....	8c	0	W	.....	0	0	Fair	
Bismarck, Dakota	27.96	710.2	29 65	753.1	32	0.0	79	E	6	2.7	.....	0	2s	.....	Calm	0	0	Clear	
Boise City, Idaho	27.20	690.9	29.90	759.4	32	0.0	69	Calm	0	0	.....	0	5s	.....	Calm	0	0	Fair	
Boston, Massachusetts	30.20	767.1	30.37	771.4	24	— 4.4	61	SW	4	1.8	.....	8c;cs	Sm'e	NW; W	.....	0	0	Fair	
Brackettville, Texas	29.12	739.6	30.18	766.6	50	10.0	86	E	4	1.8	.....	.....	10n	.....	SE	0.60	15.2	Light rain	
Breckenridge, Minnesota	28.84	732.5	29.86	758.4	32	0.0	89	W	6	2.7	.....	0	5s	.....	Calm	0	0	Fair	
Brownsville, Texas	30.12	765.0	30.19	766.8	63	17.2	94	E	2	0.9	.....	.....	10n	.....	Calm	0.03	0.8	Light rain	
Buffalo, New York	29.23	742.4	29.95	760.7	32	0.0	79	S	15	6.7	.....	.....	10s	.....	SW	0	0	Cloudy	
Burkes, Arizona	.....	.....	.....	.....	42	5.6	50	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Burlington, Vermont	29.98	761.5	30.26	768.6	28	— 2.2	77	S	3	1.3	.....	.....	10s	.....	Calm	0	0	Cloudy	
Cairo, Illinois	29.94	760.5	30.35	770.9	42	5.6	50	S	11	4.9	.....	1cs	0	Calm	.....	0	0	Clear	
Camp Grant, Arizona	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Camp Verde, Arizona	26.96	684.8	30.45	773.4	31	— 0.6	79	NW	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Campo, California	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Cape Hatteras, N. Carolina	30.45	773.4	30.46	773.7	40	4.4	83	N	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Cape Henry, Virginia	30.40	772.1	30.42	772.7	32	0.0	69	SW	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Cape Lookout, N. Carolina	30.46	773.7	30.48	774.2	37	2.8	80	N	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Cape May, New Jersey	30.33	770.4	30.36	771.1	40	4.4	67	S	26	11.6	.....	5c	0	W	.....	0	0	Fair	
Charleston, South Carolina	30.42	772.7	30.49	774.4	42	5.6	65	N	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Cheyenne, Wyoming	24.06	611.1	30.00	762.0	44	6.7	9	W	23	10.3	.....	0	2s	.....	NW	0	0	Fair	
*Chicago, Illinois	29.25	742.9	29.95	760.7	38	3.3	63	SW	13	5.8	.....	0	5s	.....	Calm	0	0	Fair	
Cincinnati, Ohio	29.48	748.8	30.14	765.5	40	4.4	48	S	7	3.1	.....	2cs	2s;sm'	W	W	0	0	Fair	
Cleveland, Ohio	29.27	743.4	30.02	762.5	35	1.7	69	SE	19	8.5	.....	0	5ks	.....	SW	0	0	Fair	
Concho, Texas	28.36	720.3	30.12	765.0	43	6.1	75	Calm	0	0	.....	8c	0	NE	.....	0	0	Cloudy	
Corsicana, Texas	29.89	759.2	30.39	771.9	36	2.2	80	E	1	0.4	.....	0	2s	.....	Calm	0	0	Clear	
Davenport, Iowa	29.43	747.5	30.09	764.3	35	1.7	79	SW	4	1.8	.....	4k	7s	Calm	Calm	0	0	Cloudy	
Denison, Texas	29.55	750.6	30.39	771.9	39	3.9	64	SE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Denver, Colorado	24.85	631.2	30.07	763.8	38	3.3	38	S	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Detroit, Michigan	29.21	741.9	29.89	759.2	33	0.6	79	SW	10	4.5	.....	0	5s	.....	Calm	0	0	Fair	
Dodge City, Kansas	27.53	699.2	29.92	760.0	32	0.0	79	W	10	4.5	.....	Haze	2s	Calm	W	0	0	Fair	
Dubuque, Iowa	29.30	744.2	30.03	762.7	33	0.6	79	W	1	0.4	.....	.....	10s	.....	Calm	0	0	Cloudy	
Duluth, Minnesota	29.10	739.1	29.78	756.4	35	1.7	90	NW	20	8.9	.....	0	0	.....	.....	0	0	Clear	
Eagle Pass, Texas	29.52	749.8	30.28	769.1	50	10.0	100	NE	5	2.2	.....	.....	10n	.....	Calm	2.36	59.9	Light rain	
Eastport, Maine	30.20	767.1	30.27	768.8	14	—10.0	46	NW	14	6.3	.....	0	0	.....	.....	0	0	Clear	
Erie, Pennsylvania	29.22	742.2	29.95	760.7	33	0.6	89	S	18	8.0	.....	2c	5cs	SW	SW	0.02	0.5	Cloudy	
Escanaba, Michigan	29.08	738.6	29.76	755.9	27	— 2.8	76	SW	6	2.7	.....	2c	0	SW	.....	0.04	1.0	Clear	
Florence, Arizona	28.46	722.9	30.06	763.5	55	12.8	38	E	.....	.....	.....	0	0	.....	.....	0	0	Clear	
FortBayard, New Mexico	24.18	614.2	30.18	766.6	29	— 1.7	100	Calm	0	0	.....	.....	Fog	.....	Calm	0	0	Foggy	
Fort Craig, New Mexico	25.77	654.6	.....	.....	27	— 2.8	76	W	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Fort Gibson, Indian Ter	29.76	755.9	30.33	770.4	36	2.2	62	E	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Fort Griffin, Texas	29.06	738.1	30.42	772.7	36	2.2	80	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	29.08	738.6	30.25	768.3	35	1.7	90	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Galveston, Texas	30.28	769.1	30.32	770.1	52	11.1	93	E	6	2.7	.....	10cs	0	W	.....	0	0	Cloudy	
Grand Haven, Michigan	29.23	742.4	29.86	758.9	41	5.0	74	W	16	7.2	.....	0	5s	.....	Calm	0	0	Fair	
Indianapolis, Indiana	29.31	744.5	30.11	764.8	38	3.3	63	SW	7	3.1	.....	0	2s;sk	.....	Calm	0	0	Clear	
Indianola, Texas	30.26	768.6	30.29	769.4	52	11.1	86	NE	19	8.5	.....	0	8ks	.....	S	0	0	Fair	
Jacksboro, Texas	29.19	741.4	30.39	771.9	36	2.2	80	SW	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Jacksonville, Florida	30.41	772.4	30.44	773.2	49	9.4	85	N	4	1.8	.....	2c	Sm'e	Calm	Calm	0	0	Fair	
Keokuk, Iowa	29.47	748.5	30.11	764.8	40	4.4	73	W	6	2.7	.....	Haze	4s	Calm	Calm	0	0	Fair	
Key West, Florida	30.20	767.1	30.23	767.8	65.0	18.3	81	NE	15	6.7	.....	2cs	1s	W	E	0	0	Fair	
Kittyhawk, North Carolina	30.45	772.9	30.46	773.7	34	1.1	79	NW	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Knoxville, Tennessee	29.40	746.7	30.50	774.7	24	— 4.4	88	Calm	0	0	.....	0	Sm'e	.....	.....	0	0	Smoky	
La Crosse, Wisconsin	29.20	741.7	29.96	761.0	35	1.7	80	S	4	1.8	.....	.....	10s	.....	S	0	0	Cloudy	
La Mesilla, New Mexico	26.32	668.5	30.47	773.9	33	0.6	89	Calm	0	0	.....	.....	10s	.....	Calm	Inap.	Inap.	Cloudy	
Laredo, Texas	.....	.....	.....	.....	53	11.7	100	NE	14	6.3	.....	.....	10n	.....	NE	1.26	32.0	Light rain	
Leavenworth, Kansas	29.27	743.4	30.15	765.8	36	2.2	90	S	2	0.9	.....	.....	Fog	.....	.....	0	0	Foggy	
Los Angeles, California	29.64	752.8	29.98	761.5	55	12.8	28	N	7	3.1	.....	0	0	.....	.....	0	0	Clear	
Louisville, Kentucky	29.65	753.1	30.23	767.8	40	4.4	55	SW	12	5.4	.....	0	Fog	.....	SW	0	0	Clear	
Lynchburg, Virginia	29.62	752.3	30.35	770.9	30	— 1.1	68	Calm	0	0	.....	1c	0	W	.....	0	0	Clear	
Maricopa Wells, Arizona	.....	.....	.....	.....	38	3.3	31	N	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Marquette, Michigan	28.97	735.8	29.68	753.9	32	0.0	69	W	8	3.6	.....	.....	10s	.....	W	0	0	Cloudy	
Mason, Texas	28.67	728.2	30.51	774.9	43	6.1	67	Calm	0	0	.....	.....	10s	.....	.....	0	0	Cloudy	
Memphis, Tennessee	30.06	763.5	30.40	772.1	37	2.8	63	S	2	0.9	.....	5c	Sm'e	W	SE	0	0	Fair	
Milwaukee, Wisconsin	29.19	741.4	29.89	759.2	37	2.8	62	NW	19	8.5	.....	0	5s	.....	NW	0	0	Fair	
Mobile, Alabama	30.39	771.9	30.43	772.9	36.5	2.5	80	N	3	1.3	.....	2c	0	W	.....	0	0	Fair	
Montgomery, Alabama	30.22	767.6	30.48	774.2	34	1.1	79	NE	1	0.4	.....	0	Sm'e	.....	Calm	0	0	Hazy	
Morgantown, West Virginia	29.08	738.6	30.17	766.3	37	2.8	54	SW	11	4.9	.....	.....	10s	.....	SW	0	0	Cloudy	
Mt. Washington, N. H.	23.64	600.4	30.00	762.0	5	—15.0	75	NW	36	16.1	.....	10cs	5s	W	NW	0.14	3.6	Cloudy	
Nashville, Tennessee	29.83	757.7	30.40	772.1	32	0.0	79	S	2	0.9	.....	5ck	Haze	Calm	Calm	0	0	Fair	
New Haven, Connecticut	30.22	767.6	30.35	770.9	26	— 3.3	77	NW	1	0.4	.....	8cs	Sm'e	Calm	Calm	0	0	Cloudy	
New London, Connecticut	30.32	770.1	30.37	771.4	29	— 1.7	78	W	4	1.8	.....	1cs	8s	Calm	W	0	0	Cloudy	
New Orleans, Louisiana	30.30	769.6	30.37	771.4	45	7.2	53	NE	5	2.2	.....	8ck	0	Calm	.....	0	0	Fair	
Newport, Rhode Island	30.33	770.4	30.39	771.9	31	— 0.6	69	W	4	1.8	.....	2c	7ks	W	W	0	0	Cloudy	
New York, New York	30.16	766.1	30.35	770.9	31	— 0.6	68	SW	10	4.5	.....	.....	10s	.....	Calm	0	0	Cloudy	
Norfolk, Virginia	30.36	771.1	30.43	772.9	32	0.0	79	S	4	1.8	.....	2c	Fog	Calm	Calm	0	0	Fair	
North Platte, Nebraska	27.14	689.3	29.83	757.7	27	— 2.8	84	NW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Olympia, Washington Ter.	29.78	756.4	29.82	757.4	45	7.2	92	Calm	0	0	.....	.....	10n	.....	Calm	1.51	38.4	Heavy rain	
Omaha, Nebraska	28.94	735.1	30.06	763.5	33	0.6	89	W	1	0.4	.....	2c	2s;fg	Calm	Calm	0	0	Fair	
Oswego, New York	29.77	756.1	30.10	764.5	35	1.7	70	SE	10	4.5	.....	.....	10s	.....	Calm	0	0	Cloudy	
Pembina, Dakota	28.86	733.0	29.72	754.9	26	— 3.3	82	SE	5	2.2	.....	.....	10s	.....	Calm	0	0	Cloudy	
Philadelphia, Pennsylvania	30.31	769.9	30.37	771.4	31	— 0.6	79	S	10	4.5	.....	5c;cs	Sm'e	S	Calm	0	0	Fair	
Phœnix, Arizona	.....	.....	.....	.....	37	2.8	90	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Pike's Peak, Colorado	17.91	454.7	30.12	765.0	22	— 5.6	45	N	15	6.7	.....	5cs	0	Calm	.....	0	0	Fair	
Pioche, Nevada	24.18	614.2	29.95	760.7	31	— 0.6	28	S	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Pittsburg, Pennsylvania	29.23	742.4	30.07	763.8	35	1.7	70	SW	12	5.4	.....	2k	8s	SW	SW	0	0	Cloudy	
Port Huron, Michigan	29.17	740.9	29.85	758.2	32	0.0	79	S	14	6.3	.....	5ck	0	Calm	.....	0	0	Fair	
Portland, Maine	30.29	769.4	30.34	770.6	23	— 5.0	73	N	2	0.9	.....	5c;k	Sm'e	Calm	.....	Inap.	Inap.	Smoky	
Portland, Oregon	29.76	755.9	29.85	758.2	47	8.3	100	N	3	1.3	.....	.....	10n	.....	Calm	3.15	80.0	Light rain	
Prescott, Arizona	24.91	632.7	30.27	768.8	25	— 3.9	75	N	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Punta Rassa, Florida	30.27	768.8	30.29	769.4	59	15.0	69	NE	8	3.6	.....	5k	0	NW	.....	0	0	Fair	
Red Bluff, California	29.66	753.4	30.04	763.0	35	1.7	80	N	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Rochester, New York	29.39	746.5	30.03	762.7	27	— 2.8	88	SE	8	3.6	.....	.....	10s	.....	Calm	0.01	0.3	Cloudy	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Roseburg, Oregon	29.30	744.2	29.86	758.4	48	8.9	82	Calm	0	0	.....	Haze	0	.....	.....	0.24	6.1	Clear.	
Sacramento, California	29.94	760.5	30.02	762.5	37	2.8	85	N	4	1.8	.....	0	0	.....	.....	0	0	Clear....	
St. Louis, Missouri	29.61	752.1	30.20	767.1	45	7.2	61	S	8	3.6	.....	0	0	.....	.....	0	0	Clear.	
St. Marks, Florida	30.40	772.1	30.42	772.7	43	6.1	83	NE	7	3.1	.....	5cs	0	SW	... .	0	0	Fair.....	
St. Paul, Minnesota	29.03	737.3	29.88	758.9	51	— 0.6	79	SW	10	4.5	.....	0	8s	.....	Calm	0	0	Fair.....	
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salt Lake City, Utah	25.80	655.3	30.13	765.3	27	— 2.8	64	W	2	0.9	.....	0	0	.....	.....	0	0	Clear	
San Antonio, Texas	29.62	752.3	30.33	767.8	49	9.4	64	N	3	1.3	.....	.....	10s	.....	N	Inap.	Inap.	Cloudy.....	
San Diego, California	29.93	760.2	30.00	762.0	59	15.0	23	E	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Sandusky, Ohio	29.40	746.7	29.99	761.7	36	2.2	62	SW	16	7.2	.....	Haze	9s	Calm	W	0	0	Fair..	
Sandy Hook, New Jersey	30.33	770.4	30.36	771.1	33	0.6	69	S	12	5.4	.....	10ck	0	SW	.....	0	0	Cloudy.....	
San Francisco, California	29.91	759.7	29.98	761.5	49	9.4	71	W	2	0.9	.....	0	0	.....	.....	0	0	Clear.....	
Santa Fé, New Mexico	23.41	594.6	29.95	760.7	31	— 0.6	54	NE	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Savannah, Georgia	30.38	771.6	30.48	774.2	40	4.4	78	NE	4	1.8	.....	2c	0	Calm	... .	0	0	Clear.....	
Shreveport, Louisiana	30.20	767.1	30.44	773.2	33	0.6	80	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.....	
Smithville, North Carolina	30.45	773.4	30.49	774.4	34	1.1	70	N	7	3.1	.....	0	0	.....	.....	0	0	Clear.....	
Springfield, Massachusetts	30.13	765.3	30.27	768.8	25	— 3.9	74	Calm	0	0	.....	.....	10s	.....	Calm	0	0	Cloudy.....	
Stockton, Texas	27.24	691.9	30.24	768.1	42	5.6	100	Calm	0	0	.....	.....	10s	.....	Calm	0.84	21.3	Cloudy.....	
Thatcher's Island, Mass	30.31	769.9	30.37	771.4	22	— 5.6	58	W	12	5.4	.....	2c	0	W	.....	0	0	Fair	
Toledo, Ohio	29.25	742.9	29.94	760.5	35	1.7	80	SW	12	5.4	.....	0	5s	.....	SW	0	0	Fair.....	
Tucson, Arizona	27.63	701.8	30.18	766.6	36	2.2	45	N	.....	.....	.....	0	0	.....	.....	0	0	Clear.....	
Tybee Island, Georgia	30.43	772.9	30.47	773.9	45	7.2	85	N	8	3.6	.....	1c	0	Calm	.....	0	0	Clear.....	
Umatilla, Oregon	29.55	750.6	.....	.....	38	3.3	82	E	4	1.8	.....	8cs	0	Calm	.....	0.18	4.6	Cloudy.....	
Vicksburg, Mississippi	30.20	767.1	30.47	773.9	39	3.9	55	SE	1	0.4	.....	0	Sm'e	.....	Calm	0	0	Clear.....	
Virginia City, Montana	24.24	615.7	29.72	754 9	31	— 0.6	58	S	4	1.8	.....	0	0	.....	.....	0	0	Clear.....	
Visalia, California	29.67	753.6	30.06	763.5	34	1.1	90	SE	3	1.3	.....	0	0	.....	.....	0	0	Clear.....	
Washington, D. C	30.20	767.1	30.32	770.1	30	— 1.1	84	S	8	3.6	.....	1c	2s	W	W	0	0	Fair...	
Wickenburg, Arizona	.....	.....	.....	.....	25	— 3.9	50	N	.....	.....	.....	0	0	.....	.....	0	0	Clear.....	
Wilmington, N. Carolina	30.30	771.9	30.48	774.2	38	0.6	61	NE	1	0.4	.....	0	Sm'e	.....	NE	0	0	Clear...	
Winnemucca, Nevada	25.70	652.8	30.06	763.5	12	—11.1	80	NE	10	4.5	.....	0	0	.....	.....	0	0	Clear.....	
Wood's Holl, Mass	30.35	770.9	30.40	772.1	31	— 0.6	79	NW	5	2.2	.....	Haze	0	Calm	.....	0	0	Clear.....	
Yankton, Dakota	28.70	729.0	30.06	763.5	22	— 5.6	86	Calm	0	0	.....	0	8s	.....	Calm	0	0	Fair.....	
Yuma, Arizona	29.94	760.5	30.11	764.8	47	8.3	37	N	3	1.3	.....	0	0	.....	.....	0	0	Clear.....	
Sub-Series.																			
York Factory, B. A.	29.18	741.2	29.24	742.7	14.0	—10.0	91	SW	10	4.5	.....	0	0	.....	.....	0	0	Clear.....	J. Fortescue, W. Wood.
Havana, Cuba, W. I.	30.09	764.3	30.11	764.8	71	21.7	75	Calm	0	0	... .	8c	4n	Calm	E	2.56	65.0	Cloudy.....	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.11	764.8	30.12	765.0	78	25.6	90	Calm	0	0	.....	2c	8n	Calm	N	0.08	2.0	.....	James Gall.
Navassa, W. I.	29.88	758.9	29.96	761.0	79	26.1	.....	NE	4	1.8	.....	.....	.....	.....	.....	0.92	23.4	Cloudy.....	F. M Everett.
St. Thomas, W. I.	.....	.....	.....	.....	80	26.7	61	NE	5	2.2	.. ....	0	2k	.....	.....	0	0	Clear.....	G. O. Gellich.
Paramaribo, D. Guiana, S. A.	.....	.....	29.99	761.7	83	28.3	79	E	.....	.....	2	7ks?	5k	E	.....	0.145	3.69	½ Cloudy ...	C. J. Hering.
Batavia, Dutch Guiana, S. A	30.02	762.5	30.03	762.7	86.1	29.5	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.35	9.	Cloudy.....	Dr. H. Groot.
Medellin, Colombia, S. A.	25.20	640.1	.....	.....	65.8	18.8	87	Calm	.....	.....	0	.....	10s;ks	.....	.....	0	0	Cloudy.....	Thomas Herran.
Honolulu, Oahu, H. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Daniel Smith.
Makawao, Maui, H. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. L. Clarke.

Note.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo; for Batavia, the barometer reduced to freezing but not to sea-level. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,838 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573,4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Ploche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.07 in.; Cheyenne, 5.94 in.; Denver, 5,22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in ; Ploche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard Mare Island, Cal.	29.96	761.0	45	7.2	43	6.1	83	E	16	7.2	.....	.....	0	.....	.....	0	0	.....	.....	Clear.....	
Navy Yard, Pensacola, Fla.	30.45	773.4	.....	.....	45	7.2	92	NE	9	4.0	.....	.....	7	.....	.....	0	0	.....	.....	D. clouds....	
Navy Yard, Portsmouth, N.H	30.32	770.1	43	6.1	18	— 7.8	84	WSW	2	0.9	.....	.....	.....	.....	.....	0	0	.....	.....	Clear	
Naval Hospital, Yokohama, Japan.....	30.06	763.5	48	8.9	41.5	5.3	49	NNE	.....	.....	5	.....	10ks	.....	W	0	0	.....	.....	Cloudy.....	
Adams. S. 42° 46′, W. 76° 40′.....	29.84	757.9	54	12.2	54	12.2	87	WSW	.....	.....	5–6	.....	9	.....	SW	Light	Light	Rough	SW	Squally	
Alert, Yokohama, Japan.....	30.15	765.8	.....	.....	45	7.2	100	N&E	.....	.....	3–5	.....	10	.....	N	.....	.....	Smooth	.....	D. clouds....	
Alliance, Chanak Kalessi, Turkey.	29.90	759.4	64	17.8	47	8.3	85	NNE	.....	.....	5–6	.....	10	.....	NE	.....	.....	.....	.....	Squally.....	
Ashuelot. Shanghai, China.....	30.43	772.9	53	11.7	46	7.8	84	NE	.....	.....	1	.....	4	.....	Calm	.....	.....	.....	.....	D. clouds....	
Canonicus, New Orleans, La.....	30.33	770.4	40	4.4	45	7.2	68	SE	.....	.....	2	.....	7	.....	.....	.....	.....	.....	.....	Cloudy.....	
Colorado, New York, N. Y.....	30.32	770.1	32	0.0	31	— 0.6	79	SSW	7	3.1	.....	.....	9	.....	SSW	0	0	.....	.....	Light fog....	
Despatch, Constantinople, Turkey.	29.98	761.5	69	20.6	47	8.3	85	NNE	.....	.....	3	.....	10	.....	NE	.....	.....	.....	.....	Rainy.....	
Essex, Congo River, Lower Guinea....	29.85	758.2	83	28.3	85	29.4	100	W	.....	.....	1	.....	7	.....	.....	.....	.....	Smooth	.....	D. clouds.....	
Franklin, Norfolk, Va.....	30.50	774.7	34	1.1	34	1.1	100	SW	3.5	1.6	.....	.....	7	.....	SW	0	0	.....	.....	Clear?.....	
Guard, Lisbon, Portugal.....	29.90	759.4	61	16.1	55	12.8	74	N	.....	.....	2–3	.....	1	.....	N&W	.....	.....	.....	.....	Misty.....	
Lackawana, Mare Island, Cal....	30.03	762.7	.....	.....	47	8.3	85	E	.....	.....	3	.....	0	.....	.....	.....	.....	.....	.....	Blue sky.....	
Marion, Villefranche, France.....	29.91	759.7	58	14.4	57	13.9	52	E	.....	.....	1	.....	7	.....	SE	0	0	Smooth	.....	D. clouds.....	
Michigan, Erie, Pa.....	29.48	748.8	65	18.3	30	— 1.1	57	WSW	.....	.....	2	.....	10	.....	WSW	.....	.....	.....	.....	Cloudy.....	
Monocacy, En route from Shanghai to Amoy, China	30.28	769.1	64	17.8	53	11.7	67	S&E	.....	.....	3	.....	9	.....	N	0	0	Smooth	.....	D. clouds.....	
Monongahela. N. 17° 22′, E. 40° 10′.	30.13	765.3	84	28.9	84	28.9	100	ESE	.....	.....	2	.....	c	.....	.....	.....	.....	Long	S&E	D. clouds.....	
New Hampshire, Port Royal, S.C.....	30.58	776.7	.....	.....	39	3.9	73	E	6	2.7	.....	.....	4	.....	NW	0	0	.....	.....	D. clouds.....	
Omaha, S. 21° 45′, W. 72° 35′.....	30.06	763.5	70	21.1	68	20.0	74	SE	2	0.9	.....	.....	10	.....	SE	0	0	Long	S	Cloudy.....	
Onward, Callao, Peru.....	30.00†	762.0†	73	22.8	71	21.7	90	SE	.....	.....	2	.....	1	.....	.....	.....	.....	Long	W	D. clouds.....	
Ossipee, Norfolk, Va.....	30.50	774.7	57	13.9	32	0.0	79	SSW	.....	.....	1	.....	3	.....	NW	.....	.....	.....	.....	D. clouds.. ...	
Palos, Shanghai, China.....	30.43	772.9	55	12.8	44	6.7	84	NE	.....	.....	1	.....	3	.....	.....	.....	.....	.....	.....	Clear.....	
Powhatan, Norfolk, Va.....	.....	.....	.....	.....	32	0.0	100	SW	2.4	1.1	.....	.....	2	.....	.....	0	0	.....	.....	Clear	
Ranger, Shanghai, China.....	30.50	774.7	.....	.....	52	11.1	86	ENE	.....	.....	0–1	.....	3	.....	Calm	.....	.....	.....	.....	Pleasant.....	
Rio Bravo, Brownsville, Texas.....	30.06	763.5	.....	.....	65	18.3	94	E	.....	.....	1	.....	10	.....	E	.....	.....	.....	.....	Raining.....	
Santee, Annapolis, Md.....	30.34	770.6	51	10.6	36	2.2	61	S	.....	.....	4	.....	3	.....	S&W	0	0	.....	.....	Clear.....	
Saratoga, Norfolk, Va.....	.....	.....	.. ..	.....	33	0.6	89	Calm	.....	.....	0	.....	.....	.....	.....	0	0	.....	.....	Cloudy.....	
St. Louis, League Island, Pa	30.19	766.8	28	—2.2	29	— 1.7	78	S	7	3.1	.....	.....	5	.....	W	0	0	.....	.....	Fair	
Swatara, Norfolk, Va.....	30.50	774.7	.....	.....	58	14.4	48	SSW	.....	.....	2	.....	1	.....	.....	.....	.....	.....	.....	D clouds.....	
Tennessee, N. 33° 48,′ E. 130° 05′.....	30.16	766.1	69	20.6	48	8.9	56	NNW	8	3.6	.....	.....	5	.....	N&E	0	0	Smooth	.....	D. clouds.....	
Trenton, Villefranche, France.....	29.97	761.2	.....	.....	59	15.0	49	SE	3	1.3	.....	.....	8	.....	S&E	0	0	.....	.....	D. clouds	
Vandalia, Villefranche, France.....	29.91	759.7	59	15.0	56	13.3	46	SE	.....	.....	1	.....	1	.....	.....	.....	.....	.....	.....	D. clouds.....	
Wabash, Boston, Mass.....	30.43	772.9	56	13.3	22	— 5.6	.....	WSW	2	0.9	.....	.....	6	.....	Calm	0	0	.....		D. clouds....	
Wyoming, Washington, D. C.....	30.54†	775.7†	....	.....	37	2.8	.....	S	.....	.....	3–4	.....	6	.....	.....	.....	.....	.....	.....	D. clouds.....	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. The position given for the Plymouth is that at noon, local time, instead of that at 7:35 a. m., Washington time.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Character.	Direction from—		
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			Capt. Howard.
S. S. City of Peking, N. 31° 47′, W. 146° 48′			30.07*	763.8*	58	14.4	100	WNW			5		5		WNW	Mod'ate	W	D. clouds	Lt. Z. L. Tanner, U.S.N.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio, Hong-Kong, China			30.12	765.0	74	23.3		ENE			5		2		E			D. clouds	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

NOTE.—The originals give the wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. *Aneroid.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.

S. S. Belgic, N. 23° 51′, E. 118° 16′			30.08*	764.0*				NE			4		Light		NE	Smooth	NE	D. clouds	Capt. John Metcalf.
S. S. Gaelic, Yokohama, Japan			29.97†	761.2†	68?	20.0?	??	NW			4		k					D. clouds	Capt. W. H. Kidley
S. S. Oceanic																			Capt. H. Parsell.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. * Corrected for temperature and elevation; instrumental error not known. †Aneroid.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig, N. 37° 24′, W. 73° 25′			30.47	773.9	43.5	6.4	68	WSW			1–2		2		E	Light	NE	Clear	Capt. K. Undütsch.
S. S. Nürnberg, N. 26° 33′, W. 70° 52′			30.22	767.6	73.0	22.8	67	NNE			5		k		WSW	Rough	NNE	D. clouds	Capt. A. Jaeger.
S. S. Ohio, N. 49° 35′, W. 19° 36′			30.28	769.1	48.5	9.2	93	W			5		k		W	Long	W	Blue sky	Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds.

UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Lo'wr	Upper.	Lower.	Character.	Direction from—		
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second	0—10.	0—10.	0—10.	From—	From—				
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, N. 40° 17′, W. 69° 20′			30.41*	772.4*	44	6.7	68	NW			3		7		NW	Light	NNW	Fine	Captain Sargent.
S. S. Ohio, N. 40° 13′, W. 69° 34′			30.35	770.9	38	3.3	81	NNW			2		8?		NNW			Clear?	Captain Morrison.
S. S. Pennsylvania, Liverpool			29.86†	758.4†	49	9.4	100	SE			4		10		SW			Cloudy	Captain Harris.

Note.—The originals give the barometer as read off; wind-force by the scale 0 to 12. * Aneroid † Corrected for temperature and elevation, instrumental error not known.

RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

S. S. Nederland																			Capt. Randle.
S. S. Switzerland, N. 41° 13′, W. 65° 45′			30.27*	768.8*				NW	13	5.8			8		NW	Slight	WNW	D. clouds	Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

*Aneroid: regulated to standard at Antwerp.

ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

S. S. Hibernian																			
S. S. Scandinavian, Halifax, N. S.			30.10	764.5	19	— 7.2		WNW			5		3		WNW	Smooth	WNW	Snowing	Capt. W. Richardson.

Note.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller. Kennebunk, Maine			30.30	769.6	29	— 1.7	56	Calm	0	0			2c		W			Clear.	Capt. James Jorgensen.

Note.—The originals for the schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4.

Collated at the Office of the CHIEF SIGNAL OFFICER OF THE ARMY, Washington, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.,) Chief Signal Officer. U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON DECEMBER 11, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:28 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours	.....	.....	30.05	763.3	64.4	18.0	74	Calm	.....	.....	0	.....	8	.....	.....	0	0	Very cloudy	Michel.
Algiers	.....	.....	30.10	764.4	63.7	17.6	94	N	.....	.....	1	.....	2	.....	.....	0	0	Fair	Peter.
La Calle	.....	.....	30.10	764.4	65.3	18.5	73	W	.....	.....	1	.....	5	.....	.....	0	0	Cloudy	Fleury.
Tunis	.....	.....	30.11	764.8	59.7	15.4	76	W	.....	.....	2	.....	7	.....	.....	0	0	Very cloudy	Jacques.
Sfax	.....	.....	30.18	766.5	62.6	17.0	.....	E	.....	.....	2	.....	4	.....	.....	.....	.....	Cloudy	Husson.
Saida	.....	.....	30.05	763.3	57.7	14.3	55	S	.....	.....	1	.....	2	.....	.....	0.003	0.07	Fair	Millot.
Tebessa	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Bassières.
Geriville	.....	.....	30.12	765.1	48.2	9.0	84	NNE	.....	.....	2	.....	2	.....	.....	0	0	Fair	Lemaillot.
Laghouat	.....	.....	30.12	765.1	53.6	12.0	65	W	.....	.....	4	.....	8	.....	.....	0	0	Very cloudy	Guyot.
Biskra	.....	.....	30.12	765.0	67.8	19.9	33	NE	.....	.....	1	.....	0	.....	.....	0	0	Clear	Kuntz.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 830 ? meters, or 2,919.9 ? feet; Tebessa, 1,088 ? m., or 3,569.4 ? ft.; Geriville, 1,360 ? m.; or 4,461.7 ? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Agram	29.70	754.4	30.28	769.1	37.4	3.0	80	SW	.....	.....	1	.....	6	.....	.....	Inap.	Inap.	.....	Prof. Ivan Stozir
Cracow, I. R. Observatory	29.51	749.6	30.33	770.3	29.5	— 1.4	88	NE	.....	.....	3	.....	8	.....	.....	0	0	.....	Dr. Wierzbiski.
Eperies	29.35	745.4	30.27	768.9	33.1	0.6	75	Calm	.....	.....	0	.....	8;8	.....	.....	0	0	.....	Julius Mikolik.
Gratz	28.97	735.9	30.29	769.3	34.3	1.3	85	SW	.....	.....	2	.....	10	.....	.....	0.098	2.5	.....	Andreas Rospini.
Hermannstadt	28.79	731.3	30.29	769.4	31.3	— 0.4	85	ESE	.....	.....	2	.....	8	.....	.....	0	0	.....	Prof. Reissenberger.
Kremsmünster	28.81	731.8	30.23	767.7	31.3	— 0.4	85	ENE	.....	.....	2	.....	10	.....	.....	0	0	.....	Prof. C. Wagner.
Lemberg	29.25	742.9	30.30	769.5	29.5	— 1.4	96	NE	.....	.....	1	.....	10	.....	.....	0	0	.....	Dr. T. Stanecki.
Pola	30.12	765.1	30.24	768.1	41.9	5.5	93	Calm	.....	.....	0	.....	10s	.....	.....	0.055	1.40	.....	I.R.HydrographicOffice
Szathmar	29.85	758.2	30.34	770.6	36.0	2.2	63	SE	.....	.....	2	.....	9	.....	.....	0	0	.....	Johann Tamas, S. J.
Szegedin	29.98	761.5	30.28	769.0	35.8	2.1	91	Calm	.....	.....	0	.....	10	.....	.....	0	0	.....	Karl Stancel.
Trieste	30.16	766.0	30.26	768.6	45.5	7.5	60	Calm	.....	.....	0	.....	10	.....	.....	0	0	Cloudy	P. Busin.
Vienna	29.51	749.5	30.24	768.1	34.7	1.5	87	Calm	.....	.....	0	.....	10	.....	.....	0	0	.....	I. R. Central Met. Obs'y
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Arlon	28.61	726.8	30.19	766.7	34.2	1.2	74	S	.....	.....	1	.....	1	.....	.....	0	0	.....	Prof. M. Passau.
Brussels	29.91	759.7	30.12	765.1	36.7	2.6	84	N	.....	.....	2	3	1	NW	.....	.....	.....	Raining	Royal Observatory.
Furnes	30.06	763.5	30.08	764.1	35.6	2.0	84	SE	.....	.....	2	.....	2	.....	.....	0.122	3.1	.....	M. E. de Cae.
Maeseyck	29.98	761.6	30.11	764.9	35.4	1.9	82	E	.....	.....	2	.....	3	.....	.....	0	0	.....	M. Pierrot.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	29.66	753.4	29.76	755.9	40.5	4.7	.....	S	16	7.2	.....	.....	5	.....	.....	0.180	4.57	Blue sky	W. Boswell.
Ardrossan	29.70	754.4	29.72	754.9	45	7.2	.....	S	.....	.....	6	.....	10	.....	.....	.....	.....	Raining	William McNeil.
Armagh, Observatory	.....	.....	29.65	753.1	42.6	5.9	.....	S	26	11.6	.....	.....	10	.....	.....	.....	.....	Raining	S. Call, for Dr. Robinson
Bidston, (Liverpool Obs.)	.....	.....	29.96	761.0	43.4	6.3	.....	SSE	13	5.8	.....	.....	4	.....	.....	.....	.....	D. clouds	John Hartnup.
Birr Castle, (Parsonstown)	.....	.....	29.69	754.1	47.8	8.8	.....	SSW	.....	.....	3	.....	10	.....	.....	.....	.....	Showery	J. Dreyer.
Bradford, Yorkshire	29.54	750.3	29.93	760.2	42.3	5.7	.....	S	.....	.....	2	.....	3	.....	.....	0.04	1.0	D. clouds	J. McLandsborough.
Bridgetown, (Barbados)	29.95	760.7	29.98	761.5	80.5	26.9	.....	NE	.....	.....	2	.....	2	.....	.....	.....	.....	D. clouds	Pvt. G. W. Roberts, A.
Cambridge, Observatory	.....	.....	30.07	763.8	35.9	2.2	.....	S	.....	.....	1	.....	10	.....	.....	.....	.....	Overcast	H. Todd. [H.O.
Cardington	.....	.....	30.07	763.8	40.4	4.7	.....	W	.....	.....	1	.....	10	.....	.....	.....	.....	Overcast	John McLaren.
Chatham, School M. E.	29.94	760.5	30.08	764.0	40.2	4.6	.....	SW	.....	.....	1	.....	0	.....	.....	.....	.....	Foggy	Lt. W. G. Morris, R. E.
Dartmoor	28.62	726.9	30.13	765.3	41.4	5.2	.....	W	.....	.....	4	.....	6	.....	.....	.....	.....	D. clouds	Alexander Watt.
Davos Platz (Switzerland)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Francis Redford, M. A.
Donaghadee	29.67	753.6	29.70	754.4	47	8.3	.....	SSW	.....	.....	4	.....	8	.....	.....	.....	.....	D. clouds	J. Mac Gowan.
Dover	30.07	763.8	30.10	764.5	42	5.6	.....	SW	.....	.....	2	.....	7	.....	.....	.....	.....	Misty	J. Costello.
Eccles, (near Manchester)	.....	.....	29.98	761.5	42.1	5.6	.....	SSW	1.4	0.6	.....	.....	8	.....	.....	.....	.....	Misty	Thomas Mackereth.
Falmouth, Observatory	29.90	759.4	30.13	765.3	48.8	9.3	.....	SW	.....	.....	4	.....	6	.....	.....	.....	.....	Overcast	The Staff.
Fort Napier, (Natal)	27.64	702.0	29.86	758.4	71.1	21.7	.....	NE	.....	.....	2	.....	10	.....	.....	.....	.....	Overcast	Pvt. G. Salmon, A.H. C.
Free Town, (Sierra Leone)	.....	.....	29.90	759.4	87	30.6	.....	W	.....	.....	1	.....	3	.....	.....	.....	.....	D. clouds	.....
Galway, Queen's College	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	29.98	761.5	30.03	762.7	59.2	15.1	.....	E	.....	.....	4	.....	7	.....	.....	.....	.....	D. clouds	Corpl. C. Aitken, A.H.C.
Glasgow, Observatory	29.54	750.3	29.74	755.4	42.2	5.7	.....	SSE	.....	.....	5	.....	10	.....	.....	.....	.....	Raining	D. G. Maclean.
Great Yarmouth	30.04	763.0	30.04	763.0	40	4.4	.....	SW	.....	.....	1	.....	6	.....	.....	.....	.....	Foggy	G. T. Watson.
Greenwich, Royal Obs'y	29.92	760.0	30.10	764.5	37.6	3.1	.....	SW	.....	.....	1	.....	10	.....	.....	.....	.....	Overcast	The Staff, for G. B. Airy.
Guernsey	29.91	759.7	30.14	765.5	48	8.9	.....	NW	.....	.....	2	.....	3	.....	.....	.....	.....	D. clouds	Dr. S. E. Hoskins, F.R.S.
Helston	.....	.....	30.11	764.8	50	10.0	.....	SW	.....	.....	4	.....	4	.....	.....	0.5	13.	D. clouds	M. P. Moyle.
Holyhead	29.82	757.4	29.87	758.7	47	8.3	.....	SSW	.....	.....	5	.....	10	.....	.....	.....	.....	Raining	John Tilston.
Jersey	29.88	758.9	30.17	766.3	49.0	9.4	.....	NW	.....	.....	3	.....	7	.....	.....	.....	.....	D. clouds	J. Fisher.
Kew, Observatory	.....	.....	30.09	764.3	39.0	3.9	.....	SE	5	2.2	.....	.....	10	.....	.....	.....	.....	Gloomy	The Staff.
Kingstown	29.77	756.1	29.80	756.9	46	7.8	.....	S	.....	.....	6	.....	10	.....	.....	.....	.....	Overcast	George Mitchell.
Leicester, Museum	.....	.....	30.04	763.0	41.0	5.0	.....	S	.....	.....	1	.....	10	.....	.....	.....	.....	Misty	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	30.09	764.3	30.17	766.3	64.6	18.1	.....	E	.....	.....	4	.....	8	.....	.....	.....	.....	D. clouds	Sgt. Fred. Travis, A. H.
Nairn	29.52	749.8	29.61	752.1	41	5.0	.....	SE	.....	.....	3	.....	10	.....	.....	.....	.....	Overcast	W. D. Penny. [O.
Nassau, (Bahamas)	.....	.....	30.27	768.8	72.0	22.2	.....	NE	.....	.....	6	.....	7	.....	.....	.....	.....	D. clouds	C. S. Duncombe.
Nottingham, Observatory	29.84	757.9	30.04	763.0	40.0	4.4	.....	SSW	.....	.....	2	.....	10	.....	.....	0.012	0.30	Raining	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.50	749.3	30.04	763.0	41.4	5.2	.....	SSW	.....	.....	2	.....	9	.....	.....	.....	.....	D. clouds	Rev. Stephen Whitty
Oxford, Radcliffe Obs'y	.....	.....	30.06	763.5	42	5.6	.....	SW	.....	.....	1	.....	9	.....	.....	.....	.....	Overcast	Mr. Lucas.
Plymouth	30.04	763.0	30.12	765.0	45.9	7.7	.....	SW	.....	.....	3	.....	8	.....	.....	.....	.....	Misty	John Merrifield.
Roche's Point	29.80	756.9	29.84	757.9	49	9.4	.....	SW	.....	.....	7	.....	10	.....	.....	.....	.....	Raining	W. Kennedy.
Saint Ann's Head	29.84	757.9	30.01	762.2	49	9.4	.....	SSW	.....	.....	4	.....	10	.....	.....	.....	.....	Threatening	John C. Walker.
Sandwick Manse, (Orkneys.)	.....	.....	29.60	751.8	41.1	5.1	.....	SSE	30	13.4	.....	.....	10	.....	.....	.....	.....	Overcast	Rev. C. Clouston, LL. D
Scutari, Cemetery, (Turkey)	.....	.....	30.25	768.3	43.2	6.2	.....	NNE	.....	.....	2	.....	10	.....	.....	Blank	Blank	Overcast	Sergt. W. H. Lyne.
Sheffield	29.65	753.1	29.94	760.5	42.0	5.6	.....	SW	.....	.....	1	.....	8	.....	.....	0.09	2.3	Misty	W. F. Cooper.
Silloth Rectory	29.80	756.9	29.83	757.7	45.6	7.5	80	SW	.....	.....	6	.....	2	.....	.....	0.560	14.22	D. clouds	Rev. F. Redford, M. A.
Stonyhurst, Observatory	.....	.....	.....	.....	42.2	5.7	.....	SW	.....	.....	1	.....	10	.....	.....	.....	.....	Misty	Rev. S. J. Perry.
Stornoway, Lewis C. (Hebr.)	.....	.....	29.34	745.2	40	4.4	.....	SSW	.....	.....	8	.....	10	.....	.....	.....	.....	Showery	John Smith.
Stratfield Turgiss	29.88	758.9	30.10	764.5	39.7	4.3	.....	SW	.....	.....	1	.....	10	.....	.....	.....	.....	Overcast	Rev. C. H. Griffith, F.M.S.
Thurso	.....	.....	29.58	751.3	41	5.0	.....	SSE	.....	.....	3	.....	10	.....	.....	.....	.....	Overcast	John Trotter.
Truro, Royal Institution	.....	.....	30.09	764.3	51	10.6	.....	S	.....	.....	4	.....	10	.....	.....	.....	.....	Gloomy	W. Newcombe.
Valencia, Observatory	.....	.....	29.68	753.9	52.0	11.1	.....	SSW	58	25.9	.....	.....	10	.....	.....	.....	.....	Raining	The Staff.
SUB-SERIES.																			
Calf of Man, (Isle of Man)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Henry Mercer.
Cape Good Hope, Obs'y	30.07	763.8	30.11	764.8	73.1	22.8	63	NW	16	7.2	.....	0	0	.....	.....	.....	.....	.....	The Staff, for E. J. Stone.
Hobart Town, (Tasmania)	.....	.....	30.16	766.1	54.5	12.5	81	NW	.....	.....	3	.....	2[k	.....	.....	0	0	.....	Francis Abbott, F.R.A.S.
Leith, Restalrig Park	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Andrew Gibb.
Mauritius, Observatory	29.87	758.7	30.06	763.4	81.0	27.2	64	E	13.0	5.8	.....	0	4	.....	E	0	0	Fine	C. Meldrum.
Melbourne, Observatory	30.00	762.0	30.09	764.3	56.2	13.4	80	SSE	4	1.8	.....	.....	0	.....	.....	0	0	Very fine	R. L. J. Ellery.
Monach L't-house, (Hebrides)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Youngclause.
North Unst, (Shetland Is.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Robert Burnet.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m.

MARINE SERIES.

VESSELS.

	Sea or swell. Height scale 0—9	Sea or swell. Direction from—					
S. S. Algeria, N. 41° 40′, W. 63° 40′	0*	.....	Showery	Capt. W. Watson.
S. S. Batavia	.....	.....	.....	Capt. J. E. Mouland.
Ship Camperdown	.....	.....	.....	Capt. A. T. Miller.
Brig Catherine	.....	.....	.....	Capt. Adam Smith.
Barque Celeste	.....	.....	.....	Capt. D. F. McKechnie.
S. S. Hibernia	.....	.....	.....	Capt. W. R. Cato
Barque Maroon	.....	.....	.....	Capt. A. T. Brown.
Ship Mikado	.....	.....	.....	Capt. C. C. Prehn.
S. S. Seine	.....	.....	.....	Capt. H. Manning.
Barque Sorata	.....	.....	.....	Capt. Jas. J. Price.
Schooner Traveller	.....	.....	.....	Capt. Alex Simpson
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
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NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. *Feet

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS,

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
San José	26.19	665.2			70.7	21.5	86	NE			3	2cks	2sd		NE	0	0		Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	30.18	766.5	30.23	767.7	34.7	1.5	80	SE			4		10						
Faröe	30.15	765.9	30.17	766.4	32.2	0.1	87	S			4		10						
Godthaab, (Greenland)	29.48	748.9	29.53	750.0	13.3	—10.4	80	ENE			2		10						
Stykkisholm, (Iceland)	28.90	734.0	28.94	735.1	32.5	0.3	96	SW			6		8						Snowing.
Thorshavn, (Faröe)	29.39	746.5	29.43	747.4	40.1	4.5	84	S			2		10						
Vestervig	29.97	761.1	30.13	765.4	34.9	1.6	85	SSE			2		10						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

Alençon, Normal School	29.64	752.8	30.19	766.8	44.6	7	72	SW			1		5			0	0	Cloudy	Collignon, Director.
Amiens, Normal School	29.97	761.2	30.09	764.2	36.0	2.2	65	E			2		0			0	0	Clear.	Bonvarne, Director.
Avignon, Normal School	30.15	765.7	30.23	767.7	44.6	7	97	N			1		10			0	0	Foggy	Mr. Giraud, Director.
Bar-sur-Seine	29.58	751.3	30.17	766.2	41.5	5.3	78	SW			1		0			0	0	Clear	C. Saillard.
Beaumette Obs'y (Angers)	30.02	762.6	30.19	766.9	39.6	4.2	97	W	0	0					W	0	0		Albert Cheux.
Beauvais	29.87	758.6	30.17	766.2	34.2	1.2	87	NW			1		0			0	0	Clear	Normal School.
Besançon	29.28	743.8	30.21	767.4	38.1	3.4	88	ENE			2		8		SW	0	0	Very cloudy	Normal School.
Bourg-en-Bresse	29.26	743.3	30.18	766.6	46.4	8	83	S			2		5n		S	0	0	Cloudy	Normal School.
Bourges, Normal School	29.60	751.8	30.17	766.4	36.0	2.2	96	NE			2		10		NE	0	0	Covered	A. Wagner, Director.
Brest, Naval Observatory	29.92	760.0	30.14	765.5	51.6	10.9	72	W			2		7		W	0.030	0.75		The Staff.
Carcassonne, Normal School	29.80	757.0	30.23	767.8	48.9	9.4	81	W			4		5		W	0	0	Cloudy	Vateau, Director.
Caen	30.08	764.1	30.16	766.1	39.2	4	97	SW			1		2		W	0	0	Slightly cl'dy	Normal School.
Chartres, Normal School	29.50	749.3	30.09	764.3	36.7	2.6		W			1		2		W	0	0		Lequin, Director.
Châlons-sur-Marne, N. Sch'l	29.80	756.9	30.09	764.2	40.3	4.6	59	SE			3	2c				0	0	Slightly cl'dy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.76	730.5	30.15	765.8	46.0	7.8	70	W			3		2		WSW	0.039	1.0	Slightly cl'dy	Alluard, Director.
Commercy, Normal School	29.26	743.1	30.18	766.5	34.3	1.3	78	E			2		0			0	0	Clear	Dr. Goulet, Director.
Commune de Gréasque*	29.10	739.2	30.24	768.2	47.7	8.7	63	E			2		10		E	0	0	Covered	V. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	30.02	762.6	30.24	768.2	41.0	5.0	79	N			2		0			0	0	Clear	Mouillot, Director.
Le Mans, Normal School	29.92	759.9	30.24	768.2	30.7	— 0.7	61	NNE			2		Fog			0	0	Dense fog	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.25	743 0	30.20	767.0	43.3	6.3	80	SE			2		10		NE	0.010	0.25	Covered	Voudez, Director.
Lorient, Naval Observatory	30.14	765.5	30.20	767.0	50.0	10.0	62	WNW			2		2		NW	0.134	3.4	¾ covered	T. Carré, Director.
Mâcon, Normal School	29.43	747.5	30.14	765.5	42.3	5.7	94	Calm			0		10			0	0	Covered	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	29.04	737.5	30.12	765.1	37.4	3	93	N			2		1		S	0	0	Clear	Normal School.
Nismes, Normal School	29.98	761.6	30.19	766 9	46.8	8,2	81	NE			2		10		S	0.12	3.	Covered	Boyer, Director.
Orleans, Normal School	29.70	754.3	30.08	764.1	41.0	5	90	SSW			2		8		SSW	0	0	Very cloudy	Bernard, Director.
Paris, Observatory	29.91	759.7	30.16	766.1	36.0	2.2	74	E			1	2c		W		0	0	Hazy	National Observatory.
Privas	29.17	740.8	30.26	768.6	47.3	8.5	74	SW			1		10		SW	0	0	Covered	Normal School
Rochefort, Naval Obs'y	30.21	767.4	30.24	768.2	38.5	3.6	97	ENE			2		10		WSW	0	0	Covered	Lt. Decante, Director.
Rouen, Normal School	30.07	763.8	30.12	765.0	37.2	2.9	62	NNE			2		5		W	0	0	Cloudy	F. Lucard, Director.
Tarbes, Normal School	29.99	738.8	30.19	766.8	47.3	8.5	92	NW			2		5		W	0	0	Cloudy	T. Hugues, Director.
Villefranche	29.48	748.8	30.21	767.4	45.5	7.5	86	SE			2		8		Calm	0.04	1.	Very cloudy	Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.86	758.4	29.89	759.1	77.0	25										0.04	1.		L'Abbé Marchési.
Marseilles, Observatory			30.18	766.6	53.8	12.1	63	E			1		10					Raining	The Staff.*
Mont-Louis	24.94	633.4	30.25	768.4	37.8	3.2	68	SSW	1.9	0.83			7		SE	0.012	0.3		Mr. Falguère.
Nice			30.19	766.9	53.1	11.7	64	SW			3		6			0	0	Cloudy	Dr. A. Niepce.
Paris, Montsouris Obs'y	29.86	758.5	30.14	765.5	38.1	3.4	75	Calm			0		2		N	0	0		Marié Davy, Director.
Perpignan			30.24	768.1	50.2	10.1	78	Calm	0	0			10		SW	0.322	8.2		Dr. Fines.
Pic du Midi, (Summit,) H. P.	21.18	538.0			23.4	— 4.8		SW			4		2					Clear	M. Bayhac.
Pic du Midi, (Plantade,) H. P.	22.63	572.2			27.5	— 2.5		SW			3		1			0	0	Clear	Gen'l de Nansouty.
Saint Maur, (near Paris)	29.99	761.8	30.16	766.0	35.4	1.9	89	Calm			0		0			0	0		E. Renou.
Toulouse, Observatory	29.55	750.6	30.28	769 1	47.7	8.7	75	W			1		9			0	0		The Staff.
Tours	29.98	761.6	30.18	766.6	37.4	3.0	83	SE			1		5		W	0	0		C. Marquet.
Versailles, (near Paris)			30.14	765.5	34.9	1.6	96	NW			1		4			0.069	0.22	Light clouds	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	29.97	761.3	30.00	762.0	55.8	13.2	96	SE	13.4	6.0			10n			0.087	2.2	Raining	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published. At Mirecourt and Rochefort the cloud directions are apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg																			
Berlin	30.09	764.3	30.27	768.8	33.8	1.0	77	S			1		10			0	0		Prof. Dr. Hoh.
Breslau	29.74	755.3	30.27	768.9	30.0	— 1.1	79	SE			3		6			0	0		Prof. Arndt.
Carlsruhe	29.73	755.1	30.18	766.5	36.0	2.2	74	SE			1		10			0	0		Royal University Obs'y.
Cassel	29.59	751.5	30.20	767.0	33.4	0.8	76	SE			2		10	SW		0	0		Albert Senz.
Crefeld	29.95	760.7	30.11	764.8	36.1	2.3	63	SE			3		7			0	0		Dr. H. Möhl.
Emden	30.21	767.4	30.25	768.3	33.1	0.6	71	SE			2		10			0	0		Director Lose.
Frankfort on the Main	29.82	757.4	30.20	767.1	36.5	2.5		ESE			1		10			0	0		Prof. Prestel.
Friedrichshafen	28.74	730.0	30.24	768.0	37.4	3.0	79	SW			3		9	WSW		0	0		Physical Society.
Hamburg	30.14	765.6	30.22	767.5	30.0	— 1.1	86	SE			3		10			0	0		M. Wilhelm.
Kiel	30.19	766.8	30.21	767.2	32.5	0.3	74	ESE			2		10			0	0	Cloudy	Captain F. Hegemann.
Königsberg, (Prussia)	30.30	769.6	30.38	771.6	27.3	— 2.6	84	SE								0	0		Prof. G. Karsten.
Köslin			30.28	769.1	27.5	— 2.5		SE			2		4			0	0	Cloudy	Prof. E. Luther.
Leipsic, Observatory	29.82	757.3	30.26	768.6	31.3	— 0.4	83	E			1		10			0	0		H. Müller.
Memel, Naval School	30.38	771.7	30.43	772.9	25.5	— 3.6	91	SE			3		10			0	0		Prof. Bruhns.
Neufahrwasser	30.34	770.6	30.35	771.0	29.3	— 1.6	82	SSE			2		10ks					Cloudy	Reinbrech von Skalweit.
Posen	30.03	762.7	30.34	770.6	31.8	— 0.1	83	SSE			6–7		10			0	0		A. Lothes.
Strassburg Obs., (in Alsace	29.63	752.7	30.21	767.2	37.0	2.8	78	SSW			1		10	W		0	0	Cloudy	Dr. Magener.
Stuttgart	29.18	741.1	30.16	766.0	36.0	2.2	75	SE			0		10			0	0		Dr. Schur.
Treves, (Trier)	29.51	749.6	30.04	762.9	38.3	3.5	67	W			1		0			0	0		Prof. Schoder.
Weissenburg, (Bavaria)	28.61	726.7	30.19	766.7	33.8	1.0	80	S	1	0.5			10		W	0	0	Foggy	Prof. Flesch.
Wustrow, Naval School	30.27	768.8	30.30	769.6	30.2	— 1.0	100	ESE			3		10			0	0	Covered	Dr. Von Bebber.
German Naval Series.																		Covered	E. F. Schütz.

NOTE.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet: Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4. Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines, Königsberg, Posen and Wustrow in cubic zolls. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.88	759.0	30.28	769.1	55.8	13.2		NW			1.5							Clear	Dr. J. F. J. Schmidt.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and wind-force; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	30.13	765.3	30.18	766.6	65.8	18.8	41	ENE	26.0?	11.6?			0			0	0	Blue sky	
Deesa	29.65	753.2	30.15	765.9	64.8	18.2	22	NW					0			0	0	Blue sky	
Bombay	29.93	760.2	29.97	761.2	75.9	24.4	66	NNW	20.0	8.9			0			0	0	Blue sky	
Poona	27.91	708.9	29.93	760.2	75.5	24.2	55	NE					5		S	0	0	D. clouds	
Lahore	29.40	746.9	30.20	767.1	52.2	11.2	80	NW	3.2	1.4			10			0	0	Cloudy	
Belgaum	27.40	696.1	29.95	760.8	75.8	24.3	83	WSW	9.0	4.0			2			0.13	3.3	D. clouds	
Bangalore																			
Roorkee	29.17	740.9	30.12	765.1	54.8	12.7	87	NW	2.9	1.3			2			0	0		
Agra	29.56	750.8	30.16	766.1	55.8	13.2	69	N								0	0		
Trichinopoly																			
Nagpur	29.00	736.5	30.08	763.9	65.3	18.5	95	Calm	4.3	1.9			10		E	0.12	3.0	Overcast	
Madras																			
Lucknow	29.74	755.4	30.14	765.6	52.3	11.3	76	NNW	2.7	1.2			0			0.06	1.5	Blue sky	
Allahabad	29.79	756.6	30.12	765.0	56.9	13.8	81	Calm	2.3	1.0			0			0	0	Blue sky	
Patna	29.90	759.4	30.09	764.2	65.4	18.5	63	W	1.2	0.5			4	W	W	0	0	D. clouds	
Hazaribagh	28.00	711.2	30.09	764.3	61.3	16.3	78	NW	7.3	3.3			0?			0.26	6.6	Rain & fog?	
Cuttack	29.90	759.4	29.98	761.5	81.0	27.2	67	Calm	0.8	0.4			2			0	0	Blue sky	
Calcutta (Alipore)	30.02	762.5	30.04	763.0	73.3	22.9	75	NW	3.0	1.3			0			0	0	Blue sky	
Goalpara	29.58	751.4	29.98	761.6	68.0	20.0	82	Calm	1.8	0.8			1	W		0.11	2.8	D. clouds	
Chittagong	29.92	759.9	30.01	762.3	75.8	24.3	84	Calm	2.6	1.2			0			0	0	Blue sky	
Sibsagar	29.70	754.4	30.05	763.3	63.9	17.7	93	ENE	1.0	0.4			7			0.02	0.5	D. clouds	
Rangoon																			
Jubbulpore	28.70	729.1	30.12	764.9	66.5	19.2	87	NW	3.2	1.4			2	N		0	0	D. clouds	

NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 1—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	22.14	562.4	30.21	767.3	20.7	— 6.3	67	N			2		0			0	0		Ab. Dom. Morgini.
Stelvio	22.12	561.8	30.28	769.0	14.5	— 9.7		SSE			1		0			0	0		Signora Ernesta Manfredi.
Udine	29.81	757.1	30.24	768.0	42.8	6.0	59	E	0.7	0.3			4			0	0		Prof. Giovanni Clodig.
Padua	30.12	765.1	30.24	768.0	43.0	6.1	59	NNW	1.3	0.6			9	SW		0	0		Prof. Dott. Lorenzoni.
Vicenza	30.04	762.9	30.24	768.0	44.4	6.9	61	SE	0.7	0.3			0			0	0		Conte Alm. Da Schio.
Verona	30.00	762.1	30.24	768.0	45.0	7.2	88	W	0	0			0			0	0		Dott. B. Bertoncelli.
Bergamo	28.88	733.6	30.27	768.8	40.6	4.8	71	SE			2		0			0	0		Prof. Trionfini Carlo.
Domodossola																			Prof. Giuseppe Calza.
Milan	29.71	754.6	30.25	768.4	41.4	5.2		SSW			1		6	NNW		0	0		Ab. Gio. Capelli.
Pavia	29.90	759.5	30.27	768.8	41.4	5.2	73	SW			2		0			0	0		Prof. Gio. Cantoni.
Moncalieri	29.34	745.2	30.29	769.4	39.4	4.1	69	NNE	1.8	0.8			1			0	0		Prof. P. F. Denza.
Mondovi	28.28	718.2	30.28	769.0	36.7	2.6	72	NNE			2		0			0	0		Prof. D. C. Bruno.
Porto Maurizio	30.00	762.0	30.23	767.8	50.9	10.5	37	E			4		1			0	0		Prof. L. Vassallo.
Genoa	30.04	763.1	30.22	767.6	50.0	10.0	30	N	6.3	2.8			0			0	0		Prof. G. M. Garibaldi.
Piacenza	30.00	762.1	30.27	768.8	42.3	5.7	69	SW	0	0			0			0	0		Dott. G. Manzi.
Parma	29.96	761.0	30.29	769.4	43.7	6.5	61	ESE			4		0			0	0		Prof. P. Pigorini.
Florence	29.99	761.8	30.26	768.6	46.9	8.3	64	NE			4		10	SE		0.059	1.5		Cav. F. Meucci.
Leghorn	30.10	764.6	30.19	766.8	47.7	8.7	61	ENE	8.7	3.9			3			0	0		Prof. P. Monte.
Siena	28.97	735.8	30.18	766.6	43.5	6.4	84	E	3.1	1.4			10	SW		0.134	3.4		Prof. L. Toscani.
Urbino	28.63	727.3	30.26	768.6	37.0	2.8	88	NE			2		10			0.110	2.8		Prof. P. Serpieri.
Pesaro	30.21	767.3	30.26	768.6	41.5	5.3	84	NW	13.0	5.8			10			0.161	4.1		Prof. Luigi Guidi.
Ancona	30.15	765.8	30.26	768.6	42.4	5.8	76	WNW			4		10			0.173	4.4		Prof. F. DeBosis.
Grosseto	30.09	764.2	30.20	767.1	48.0	8.9	90	NE			2		9	NE		0.028	0.7		Avv. P. Ponticelli.
Rome	30.03	762.8	30.21	767.4	55.0	12.8	77	SE	0	0			9			0.020	0.5		Prof. P. A. Secchi.
Naples, O. U.	30.02	762.6	30.23	767.8	59.7	15.4	65	S			4		10	NW		0.020	0.5		Prof. L. Palmieri.
Lecce	30.01	762.2	30.27	768.8	56.3	13.5	72	W	0.7	0.3			3	W		0	0		Prof. C. De Giorgi.
Cosenza	29.37	746.0	30.28	769.1	53.1	11.7	68	SE	0	0			0			0.012	0.3		Prof. F. D. Conti.
Cagliari	29.88	759.0	30.08	764.0	59.9	15.5	71	S			2		1			0	0		Prof. A. Pacinotti.
Riposto, (Sicily)	30.18	766.5	30.23	767.7	58.5	14.7	74	Calm			0		10			0	0		Prof. F. Caffero.
Palermo	29.86	758.5	30.12	765.1	62.2	16.8	67	Calm	0	0			10			0	0		Prof. G. Cacciatore.
Caltanissetta	28.21	716.6	30.19	766.8	51.4	10.8	80	SSE			2		10			0	0		Prof. A. Pagani.
Syracuse	30.12	765.1	30.20	767.0	55.8	13.2	64	SW			2		8	SW		0	0		Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.71	754.5	30.26	768.6	55.8	13.2	69	WNW	1.3	0.6			9			0.181	4.6		Prof. F. Brioschi.

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,543.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo 379.6 m., or 1,245.3 ft.; Moudovi, 556 m., or 1,824.2 ft.; Siena, 348.5 m., or 1,143.3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Tokei (Yeddo)																			
Tokei (Yeddo) University	30.27	768.8	30.37	771.5	37	2.8	75	NW	2	0.9						0	0	Clear	The Observatory.
																			Prof. P. V. Veeder.

MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Señor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Aguascalientes																			I. N. Marin, M. D.
Córdoba																			C. Peña, M. D.
Cuernavaca																			L. Castillo, A. E.
Guadalajara																			Prof. L. Perez.
Guanajuato																			Prof. V. Fernandez.
Leon																			Prof. M. Leal.
Mexico	23.18	588.8	30.32	770.1	49.5	9.7	87	NW	0.1	0.03			10k			0.14	3.6	Covered	Central Observatory.
Orizaba																			N. N.
Orizaba																			I. Orozco, M. D.
Pabellon, (Aguascalts)																			M. Y. de Leon, M. E.
Puebla																			Prof. B. Gonzalez.
Toluca																			Prof. C. Velazquez.
Tlacotalpam																			Prof. F. R. Bayly.
San Luis Potosi																			G. Barroeta, M. D.
Vera-Cruz																			Prof. J. Rossell.
Zacatecas																			J. A. Bonilla, M. E.
Puebla, (Catholic Institute)																			P. Spina. [M. M. D. D.
Morelia																			M. Tena, F. L. Páramo

Note.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,290 m., or 7,512.9 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabell m, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m,, or 8,611.8 ft.; San Luis Potosí, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,490 m., or 8,168.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	30.14	765.5	30.14	765.5	38.1	3.4		SW			3					0	0		
Groningen	30.10	764.5	30.15	765.9	34.9	1.6		SE			2					0	0		
Helder	30.11	764.9	30.11	764.9	34.2	1.2		SE			1					0.016	0.4		
Hellevoetsluis			30.13	765.2	36.5	2.5	71	S			2								
Utrecht	30.10	764.5	30.15	765.7	35.8	2.1	64	SE			1		2			0	0	Light cloudy	H. v d Brink.

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	29.94	760.4	29.99	761.8	40.3	4.6	90	S	25.7	11.5	.....	.....	4	.....	.....	0	0	.....	
Brönö	29.73	755.2	29.77	756.2	43.5	6.4	87	S	18	8	.....	.....	9	.....	.....	0.094	2.4	.....	
Christiania	30.03	762.8	30.19	766.7	37.4	3.0	87	SSW	7	3	.....	.....	10	.....	.....	0	0	.....	
Tromsö	29.71	754.5	29.75	755.6	39.2	4.0	73	SW	5	2	.....	.....	10	.....	.....	0.047	1.2	.....	

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	30.28	769.1	30.47	774.0	61.5	16.4	77	W	6.9	3.1	.....	.....	5	.....	.....	0	0	.....	Dr. J. A. Sampaio.
Campo Major	29.15	740.3	30.18	766.6	56.3	13.5	53	N	18.1	8.1	.....	.....	1	.....	.....	0.091	2.3	.....	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.21	767.3	30.28	769.1	69.6	20.9	28	SW	6.3	2.8	.....	.....	0	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.85	758.3	30.22	767.5	57.0	13.9	58	N	22.4	10.0	.....	.....	0	.....	.....	0.008	0.2	.....	The Staff.
Ponta Delgada, (Azores)	30.48	774.2	30.55	776.0	63.7	17.6	62	SW	7.4	3.3	.....	.....	10	.....	.....	0	0	.....	

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

Naval Series. Vessels.	Sea or swell. Height scale 0–9	Sea or swell. Direction from—		
S. S. Bartholomew Dias	.....	.....	.....	R, A. T. Pinha, Com'd't.
S. S. India	.....	.....	.....	A. D. Pedroso, Com'd't.
S. S. Mindello	.....	.....	.....	J. F. R. R. Bastos, Com'd't.
S. S. Sado	.....	.....	.....	A. N. P. Sampaio, Com'd't.
S. S. Sá da Bandeira	.....	.....	.....	F. Texeira da Silva, Com'd't.
S. S. Tejo	.....	.....	.....	F. J. Ferreina,dos Anas,Com'd't

Note.—The originals, except for S. S. Tejo, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.90	759.4	30.35	770.5	30.6	— 0.8	88	SE	9	4	.....	.....	10ks	.....	.....	.....	.....	.....	Astronomical Obs.
Wilna	30.00	762.0	30.45	773.4	27.7	— 2.4	83	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Astronomical Obs.
Dorpat	30.24	768.0	30.50	774.7	23.0	— 5.0	94	S	2	1	.....	.....	10n	.....	.....	.....	.....	.....	Prof. Dr. Weihrauch
St. Petersburg	30.44	773.1	30.45	773.5	26.1	— 3.3	95	SSE	7	3	.....	.....	10n	.....	.....	.....	.....	.....	Central Physical Obs.
Kuopio	29.93	760.1	30.26	768.6	36.1	2.3	100	SW	13	6	.....	.....	10	.....	.....	.....	.....	.....	Ch. Forsten.
Kieff	29.63	752.5	30.30	769.7	28.0	— 2.2	81	NE	4	2	.....	.....	10	.....	.....	.....	.....	.....	Physical Cabinet.
Nikolaiev	30.16	766.1	30.23	767.9	33.3	0.7	96	NNE	18	8	.....	.....	10n	.....	.....	.....	.....	.....	Kurdakof.
Kertch	30.11	764.9	30.13	765.4	39.7	4.3	97	ENE	4	2	.....	.....	10	.....	.....	.....	.....	.....	Lagorio.
Moscow	30.00	761.9	30.60	777.3	12.0	—11.1	93	S	9	4	.....	.....	10s	.....	.....	.....	.....	.....	Meteorological Obs.
Lugan	30.07	763.8	30.28	769.2	30.9	— 0.6	79	ENE	18	8	.....	.....	10	.....	.....	Blank	Blank	.....	Meteorological Obs.
Archangel	30.04	762.9	30.06	763.4	35.2	1.8	100	W	29	13	.....	.....	10	.....	.....	.....	.....	Raining	Ogorodnikof.
Tiflis	28.70	728.9	30.15	765.8	44.4	6.9	73	Calm	0	0	.....	.....	4cs	.....	.....	.....	.....	.....	Physical Observatory.
Astrakhan	30.45	773.4	30.37	771.3	31.6	— 0.2	90	ENE	7	3	.....	.....	10	.....	.....	.....	.....	.....	Sebastianof.
Kasan	29.88	758.9	30.17	766.2	20.7	— 6.3	87	W	2	1	.....	.....	8	.....	.....	.....	.....	.....	Physical Cabinet.
Orenburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Tschernischef.
Ekaterinburg	29.31	744.5	30.38	771.7	— 4.5	—20.3	83	E	2	1	.....	.....	2s	.....	.....	.....	.....	.....	Meteorological Obs.
Nukuss	30.04	763.1	30.30	769.6	19.4	— 7.0	100	NNE	7	3	.....	.....	4cs	.....	.....	.....	.....	.....	
Kasaly	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Bobrof.
Tashkend	28.61	726.7	30.42	772.6	30.9	— 0.6	77	Calm	0	0	.....	.....	.....	.....	.....	.....	.....	.....	Michelson.
Barnaul	29.42	747.3	30.02	762.4	— 9.0	—22.8	76	NW	4	2	.....	.....	1	.....	.....	.....	.....	.....	Meteorological Obs.
Yeniseisk	29.57	751.0	29.95	760.7	—35.3	—37.4	82	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Marks.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Usolzef.
Oorga	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Mossin.
Krotkowo*	29.93	760.2	30.43	773.0	24.3	— 4.3	47	N	2	1	.....	.....	1s	.....	.....	.....	.....	.....	Cand. Fatjanow.
Peking, (China)	30.05	763.3	30.19	766.9	29.1	— 1.6	54	NW	13	6	.....	.....	8n	.....	.....	.....	.....	.....	Physical Observatory
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Vladivostock	30.01	762.3	30.05	763.3	30.7	— 0.7	98	SE	2	1	.....	.....	6n	.....	.....	.....	.....	.....	
Nikolaievsk, on the Amoor	.....	.....	.....	.....	—15.7	—26.5	.....	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall; for Krotkowo, the barometer reduced to freezing but not to sea-level. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft. * N. 53° 47′, E. 48° 34′.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Rave, Director.
Bilbao, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Manuel de Naveran
Burgos, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Domingo Martin y Perez.
Madrid, Royal Observatory	27.94	709.7	30.22	767.5	50.2	10.1	57	NE	15.7	7.00	.....	0	2	.....	.....	0.232	5.9	Partly cl'dy	The Staff.
Murcia, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Olayo Diaz, Director.
Santiago, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	30.18	766.5	30.25	768.2	70.7	21.5	72	E	7.8	3.5	.....	3cs	1k	WSW	ENE	0	0	Fair	Benito Vines, S. J.
San Fernando, Naval Obs'y	30.00	761.9	30.10	764.4	59.0	15.0	74	NNE	15.2	6.8	.....	0	4	....	NNW	0	0	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.	.....	.....	29.97	761.2	77.4	25.2	92	SE	0	0	.....	4c	5k	E	E	0.049	1.25	D. clouds	Leonardo de Tejeda, Chief of Engineers.

Note.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

SWEDISH SERIES.

Furnished by the cöoperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	30.07	763.7	30.11	764.7	35.6	2.0	.....	SW	.....	.....	2	.....	10	.....	.....	0	0	.....	
Umea	30.07	763.8	30.12	765.1	36.7	2.6	100	Calm	.....	.....	0	.....	10	.....	.....	0	0	.....	
Hernosand	30.10	764.4	30.15	765.7	37.4	3.0	87	S	.....	.....	2	.....	8	.....	.....	0	0	.....	
Stockholm	30.13	765.2	30.30	769.7	36.0	2.2	75	WSW	.....	.....	2	.....	10	.....	.....	0	0	.....	
Wisby	30.25	768.3	30.31	769.8	32.7	0.4	92	SSE	.....	.....	4	.....	10	.....	.....	0	0	.....	
Sub-Series.																			
Upsala	30.21	767.3	30.28	769.2	33.4	0.8	79	SSW	11.0	4.9	.....	.....	10	.....	SW	0.010	0.25	.....	Dr. Hildebrandsson.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.78	730.9	30.25	768.4	37.8	3.2	75	S	.....	.....	1	.....	10	.....	.....	0	0	Covered.....	The Observatory.
Zurich	28.53	724.7	30.23	767.9	35.6	2.0	78	E	.....	.....	1	.....	5	.....	.....	0	0	Cloudy.....	The Observatory.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—For Geneva the corresponding departures from the normal values are: Barometer, +3.6 mm; Thermometer, +0.4 cent.; Relative Humidity, —5 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	30.30	769.5	42.8	6.0	84	N	8	3.5	.....	.....	10	.....	NW	0	0	.....	The Observatory.
Fao, (Persian Gulf)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salonica	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	B. Stefanides.
Valona	.....	.....	30.23	767.8	57.6	14.2	.....	W	.....	.....	1	.....	2	.....	.....	0	0	Slightly cl'dy	A. Bertrand.
Varna	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Imperial Observatory.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	30.04	763.0	30.16	766.0	65.8	18.8	72	S	.....	.....	3	.....	10n	.....	SW	0.20	5.1	Overcast.....	Prof. C. V. A. Van Dyck

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	30.19	766.8	30.26	768.6	14.8	— 9.6	84	Calm	0	0	.....	0	.....	.....	.....	.....	.....	.....	Hon. J. Ferguson.
Brockville, Ontario	29.56	750.8	29.87	758.7	34	1.1	.....	SE	1	0.4	.....	.....	10s	.....	SW	0.15	3.8	Cloudy.....	W. R. Rigg.
*Chatham, N. B	30.20	767.1	30.27	768.8	2	—16.7	92	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.....	G. A. Blair.
Charlottetown, P. E. Island.	30.23	767.8	30.27	768.8	15	— 9.4	95	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.....	H. J. Cundall, C. E.
Cornwall, Ontario	29.63	752.6	29.83	757.7	30.8	— 0.7	99	SE	.....	.....	1	.....	10n	.....	.....	.....	.....	Snowing.....	James Smith, M. A.
Dalhousie, N. B	30.14	765.5	30.18	766.6	.....	.....	.....	Calm	.....	.....	0	.....	.....	.....	.....	0	0	Gloomy.....	H. A. Johnson.
Esquimault, B. C	29.37	746.0	29.42	747.3	43.3	6.3	100	N	.....	.....	.....	.....	10	.....	.....	0.04	1.0	Cloudy.....	W. H. Bevis.
*Father Point, Quebec	30.12	765.0	30.14	765.5	16	— 8.9	85	SW	4	1.8	.....	.....	10n	.....	.....	Inap.	Inap.	Light snow..	J. McWilliams.
Fredericton, N. B	30.20	767.1	30.27	768.8	16.0	— 8.9	69	W	8.0	3.6	.....	10cs	0	.....	.....	0	0	Cloudy.....	Prof. Harrison.
*Fort Garry, Manitoba	29.07	738.4	29.94	760.5	24	— 4.4	95	SW	4	1.8	.....	2cs	2ks	W	W	0.050	1.27	Fair.....	James Stewart.
Goderich, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	H. J. Strang, M. A.
Granton, Ontario	28.77	730.7	29.90	759.4	39.1	3.9	90	SW	.....	.....	2	3cs	0	E	.....	0	0	Clear.....	James Grant.
*Halifax, N. S	30.08	764.0	30.22	767.6	21	— 6.1	86	NE	7	3.1	.....	.....	8ks	.....	SW	Inap.	Inap.	Cloudy.....	F. Allison, M. A.
Hamilton, Ontario	29.46	748.3	29.84	757.9	41.7	5.4	73	SW	.....	.....	1	10cs	.....	.....	.....	0	0	.....	Geo. Dickson, M. A
Heart's Content, N. F	30.07	763.8	30.09	764.3	27	— 2.8	100	NW	.....	.....	3	.....	10	.....	.....	0	0	Overcast.....	E. Weedon.
*Kingston, Ontario	29.46	748.3	29.80	756.9	38	3.3	83	S	5	2.2	.....	.....	10s	.....	Calm	0.14	3.6	Cloudy.....	S. Woods, M. A.
Little Glace Bay, N. S	30.24	768.1	30.28	769.1	22.5	— 5.3	.....	SW	3	1.3	.....	8k	.....	SW	.....	0	.....	Cloudy.....	C. H. Rigby.
*Montreal, Quebec	29.72	754.9	29.93	760.2	29	— 1.7	86	E	5	2.2	.....	.....	10n	.....	.....	Inap.	Inap.	Cloudy.....	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.00	736.6	29.70	754.4	39	3.9	82	SW	28	12.5	.....	5k	5ks	W	W	0.21	5.3	Cloudy.....	Rev. R. Mosley.
Peterboro, Ontario	29.02	737.1	29.79	756.7	39.0	3.9	68	SW	.....	.....	2	.....	10n	.....	.....	0	0	Cloudy.....	J. F. Jeffers, B. A.
Port Dover, Ontario	29.18	741.2	29.88	758.9	42	5.6	74	W	23	10.3	.....	10k	0	W	.....	0	0	Cloudy.....	H. Morgan.
Port Hastings, N. S	30.19	766.8	30.24	768.1	34.1	1.2	.....	E	2	0.9	.....	.....	.....	.....	.....	0	0	Fine.....	Peter Grant.
Port Stanley, Ontario	29.28	743.7	29.94	760.5	39	3.9	90	W	17	7.6	.....	5ck	0	NW	.....	0	0	Fair.....	M. Payne.
*Quebec, Quebec	29.73	755.1	30.08	764.0	20	— 6.7	100	NE	14	6.3	.....	.....	10n	.....	NE	0	0	Cloudy.....	Capt. Ashe, R. N
*Rockliffe, Ontario	29.24	742.7	29.71	754.6	29	— 1.7	98	SE	10	4.5	.....	.....	10s	.....	.....	0.20	5.1	Heavy snow	W. H. McIntyre.
St. John, N. B	30.06	763.5	30.24	768.1	18	— 7.8	84	N	2	0.9	.....	9k	0	.....	.....	0.21	5.3	Cloudy.....	G. Murdock, C. E.
*Saugeen, Ontario	29.11	739.4	29.82	757.4	40	4.4	87	W	6	2.7	.....	.....	10k	.....	SW	0.01	0.3	Cloudy.....	K. Stewart.
Stayner, Ontario	28.98	736.1	29.77	756.1	40	4.4	68	NW	13	5.8	.....	.....	10n	.....	NW	0.05	1.3	Threatening	R. J. Cole.
Stratford, Ontario	28.56	725.4	29.87	758.7	37.0	2.8	80	SW	16.5	7.4	.....	.....	10s	.....	.....	0	0	Cloudy.....	C. J. MacGregor, M. A.
*Sydney, C. B	30.27	768.8	30.30	769.6	19	— 7.2	97	SW	1	0.4	.....	8k	2ks	Calm	Calm	Inap.	Inap.	Fair.....	T. C. Hill.
*Toronto, Ontario	29.44	747.8	29.83	757.7	39	3.9	78	SW	15	6.7	.....	.....	10ks	.....	W	0.01	0.3	Cloudy.....	Magnetic Observatory.
Windsor, N. S	30.14	765.5	30.24	768.1	30.0	— 1.1	85	E	4	1.8	.....	0	6k	.....	.....	0	0	Fair.....	Prof. John E. Oram.
Woodstock, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Montgomery.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	22.5	— 5.3	.....	W	.....	.....	.....	Sm'o	10s	.....	.....	0	0	Fair.....	John Delany.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.82	757.4	30.05	763.3	35	1.7	80	SE	6	2.7	.....	.....	10s	.....	Calm	0.02	0.5	Cloudy.	
Alpena, Michigan	29.16	740.7	29.81	757.2	39	3.9	72	NW	18	8.0	.....	0	5s	.....	NW	0	0	Fair.....	
Atlantic City, New Jersey	30.16	765.1	30.18	766.6	41	5.0	91	SW	1	0.4	.....	10cs	0	W	.....	0	0	Cloudy.....	
Augusta, Georgia	30.25	768.3	30.45	773.4	32	0.0	85	Calm	0	0	.....	Haze	Sm'e	Calm	NE	0	0	Smoky.....	
Baltimore, Maryland	30.13	765.3	30.18	766.6	37	2.8	80	SW	1	0.4	.....	Haze	Sm'e	Calm	Calm	0	0	Smoky.....	
Barnegat, New Jersey	30.14	765.5	30.17	766.3	35	1.7	60	W	7	3.1	.....	8cs	Haze	W	Calm	0	0	Fair	
Bismarck, Dakota	28.08	713.2	29.81	757.2	28	— 2.2	88	E	4	1.8	.....	0	5s	.....	Calm	0	0	Fair	
Boise City, Idaho	27.12	688.8	29.80	756.9	32	0.0	79	SW	4	1.8	.....	0	0	.....	.....	0	0	Clear.....	
Boston, Massachusetts	29.96	761.0	30.13	765.3	29	— 1.7	78	W	4	1.8	.....	7cs	Fog	W	.....	0.04	1.0	Fair.....	
Brackettville, Texas	29.18	741.2	30.23	767.8	53	11.7	79	Calm	0	0	.....	0	0	.....	.....	0.06	1.5	Clear	
Breckenridge, Minnesota	28.98	736.1	30.04	763.0	21	— 6.1	86	SE	7	3.1	.....	0	2s	.....	Calm	0	0	Fair	
Brownsville, Texas	30.24	768.1	30.30	769.6	63	17.2	100	E	8	3.6	.....	.....	10n	.....	E	1.80	45.7	Light rain...	
Buffalo, New York	29.13	739.9	29.83	757.7	43	6.1	83	SW	15	6.7	.....	.....	10s	.....	W	Inap.	Inap.	Cloudy.....	
Burkes, Arizona	.....	.....	.....	.....	47	8.3	55	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear.	
Burlington, Vermont	29.74	755.4	30.01	762.2	35	1.7	70	S	8	3.6	.....	.....	10s	.....	S	0.01	0.3	Cloudy.....	
Cairo, Illinois	29.94	760.5	30.35	770.9	47	8.3	48	SE	7	3.1	.....	5cs	Fog	Calm	Calm	0	0	Fair	
Camp Grant, Arizona	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Camp Verde, Arizona	26.94	684.3	30.43	772.9	33	0.6	70	NW	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Campo, California	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Cape Hatteras, N. Carolina	30.32	770.1	30.32	770.1	44	6.7	75	W	6	2.7	.....	2c	0	W	.....	0	0	Fair.....	
Cape Henry, Virginia	30.22	767.6	30.25	768.3	42	5.6	58	SW	12	5.4	.....	0	5s	.....	NE	0	0	Fair.....	
Cape Lookout, N. Carolina	30.32	770.1	30.33	770.4	51	10.6	64	W	14	6.3	.....	2c	0	W	.....	0	0	Fair	
Cape May, New Jersey	30.16	766.1	30.19	766.8	47	8.3	85	SW	6	2.7	.....	.....	10s	.....	SW	0	0	Cloudy.....	
Charleston, South Carolina	30.38	771.6	30.45	773.4	46	7.8	76	W	4	1.8	.....	0	Sm'e	.....	Calm	0	0	Clear.....	
Cheyenne, Wyoming	24.10	612.1	30.04	763.0	29	— 1.7	34	W	5	2.2	.....	0	5s	.....	Calm	0	0	Fair	
Chicago, Illinois	29.38	746.2	30.09	764.3	39	3.9	73	W	9	4.0	.....	5c	2s	Calm	W	0	0	Fair.....	
Cincinnati, Ohio	29.52	749.8	30.18	766.6	46	7.8	47	SW	8	3.6	.....	8cs	Sm'e	W	SW	0	0	Fair.....	
Cleveland, Ohio	29.27	743.4	30.00	762.0	43	6.1	66	SW	16	7.2	.....	.....	10s	.....	Calm	0	0	Cloudy.....	
Concho, Texas	28.42	721.9	30.21	767.3	36	2.2	90	SW	1	0.4	.....	8c	0	SW	.....	0	0	Cloudy.....	
Corsicana, Texas	29.93	760.2	30.43	772.9	37	2.8	80	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.....	
Davenport, Iowa	29.47	748.5	30.13	765.3	38	3.3	90	Calm	0	0	.....	Haze	4s	Calm	Calm	0	0	Fair	
Denison, Texas	29.56	750.8	30.40	772.1	45	7.2	61	SE	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Denver, Colorado	24.85	631.2	30.07	763.8	36	2.2	36	S	4	1.8	.....	0	0	.....	.....	0	0	Clear.	
Detroit, Michigan	29.25	742.9	29.93	760.2	40	4.4	73	SW	10	4.5	.....	10cs	0	Calm	.....	0	0	Cloudy.....	
Dodge City, Kansas	27.53	699.2	29.91	759.7	33	0.6	79	SW	6	2.7	.....	5c	0	W	.....	0	0	Fair	
Dubuque, Iowa	29.36	745.7	30.09	764.3	35	1.7	70	W	1	0.4	.....	1c	1s	SW	Calm	0	0	Fair.....	
Duluth, Minnesota	29.31	744.5	30.01	762.2	32	0.0	85	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Eagle Pass, Texas	29.58	751.3	30.35	770.9	54	12 2	93	Calm	0	0	.....	.....	10s	.....	Calm	0.07	1.8	Cloudy.....	
Eastport, Maine	30.12	765.0	30.19	766.8	27	— 2.8	88	NE	19	8.5	.....	.....	10s	.....	E	0	0	Cloudy.....	
Erie, Pennsylvania	29.19	741.4	29.91	759.7	43	6.1	67	SW	20	8.9	.....	10cs	0	W	.....	0.02	0.5	Cloudy.....	
Escanaba, Michigan	29.30	744.2	29.96	761.0	35	1.7	80	W	4	1.8	.....	5c	0	W	.....	0.02	0.5	Fair	
Florence, Arizona	28.47	723.1	30.07	763.8	55	12.8	38	E	.....	.....	.....	0	0	.....	.....	0	0	Clear.....	
FortBayard, New Mexico	.....	.....	.....	.....	35	1.7	90	Calm	0	0	.....	.....	10s	.....	.....	0	0	Cloudy.....	
Fort Craig, New Mexico	25.77	654.6	.....	.....	38	3.3	81	SW	4	1.8	.....	.....	10s	.....	Calm	0	0	Threatening	
Fort Gibson, Indian Ter	29.77	756.1	30.33	770.4	43	6.1	58	SE	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Fort Griffin, Texas	29.09	738.9	30.43	772.9	36	2.2	90	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.....	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	29.10	739.1	30.26	768.6	38	3.3	91	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Galveston, Texas	30.34	770.6	30.38	771.6	49	9.4	93	E	4	1.8	.....	0	8s	.....	SE	0	0	Cloudy.....	
Grand Haven, Michigan	29.34	745.2	30.00	762.0	43	6.1	75	W	16	7.2	.....	.....	10s	.....	Calm	0	0	Cloudy.....	
Indianapolis, Indiana	29.35	745.5	30.15	765.8	45	7.2	67	SW	7	3.1	.....	8cs	Sm'e	Calm	.....	0	0	Fair	
Indianola, Texas	30.36	771.1	30.39	771.9	50	10.0	79	NE	17	7.6	.....	.....	10s	.....	S	0	0	Cloudy.....	
Jacksboro, Texas	29.20	741.7	30.30	769.6	41	5.0	65	SW	6	2.7	.....	0	0	.....	.....	0	0	Clear.....	
Jacksonville, Florida	30.44	773.2	30.47	773.9	47	8.3	96	NE	5	2.2	.....	2cs	0	W	.....	0	0	Clear.....	
Keokuk, Iowa	29.48	748.8	30.10	764.5	44	6.7	84	SW	6	2.7	.....	0	1s	.....	Calm	0	0	Clear.....	
Key West, Florida	30.25	768.3	30.29	769.4	65.5	18.6	83	NE	16	7.2	.....	5c;cs;k	2s; hz	W;E	Calm ;E	0	0	Cloudy.....	
Kittyhawk, North Carolina	30.26	768.6	30.28	769.1	41	5.0	70	SW	15	6.7	.....	8c	0	SW	.....	0	0	Fair...	
Knoxville, Tennessee	29.40	746.7	30.46	773.7	35	1.7	62	SW	4	1.8	.....	5c	Sm'e	NW	.....	0	0	Smoky.....	
La Crosse, Wisconsin	29.28	743.7	30.02	762.5	42	5.6	83	SW	2	0.9	.....	Haze	Haze	.....	.....	0	0	Hazy..	
La Mesilla, New Mexico	26.42	671.1	30.58	776.7	37	2.8	90	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Laredo, Texas	.....	.....	.....	.....	53	11.7	86	N	3	1.3	.....	.....	10n	.....	Calm	0.13	3.3	Light rain...	
Leavenworth, Kansas	29.28	743.7	30.14	765.5	44	6.7	92	S	11	4.9	.....	2cs	0	Calm	.....	0	0	Clear	
Los Angeles, California	29.65	753.1	29.95	761.7	50	10.0	45	N	8	3.6	.....	0	0	.....	.....	0	0	Clear.	
Louisville, Kentucky	29.69	754.1	30.26	768.6	47	8.3	47	SW	12	5.4	.....	5c	Fog	SW	SW	0	0	Fair	
Lynchburg, Virginia	29.56	750.8	30.27	768.8	39	3.9	64	NW	2	0.9	.....	0	0	.....	.....	0	0	Clear.	
Maricopa Wells, Arizona	.....	.....	.....	.....	42	5.6	34	E	.....	.....	.....	0	0	.....	.....	0	0	Clear.	
Marquette, Michigan	29.20	741.7	29.91	759.7	38	3.3	71	W	16	7.2	.....	.....	10s	.....	Calm	0	0	Cloudy.....	
Mason, Texas	28.73	729.7	30.61	777.5	35	1.7	80	NW	4	1.8	.....	0	0	.....	.....	0	0	Clear.....	
Memphis, Tennessee	30.08	764.0	30.42	772.7	40	4.4	63	S	1	0.4	.....	1c	Sm'e	SW	S	0	0	Clear.....	
Milwaukee, Wisconsin	29.38	746.2	30.08	764.0	39	3.9	72	W	8	3.6	.....	8cs	Sm'e	.....	.....	0	0	Cloudy.....	
Mobile, Alabama	30.42	772.7	30.47	773.9	42	5.6	91	N	6	2.7	.....	0	5s	.....	Calm	0	0	Fair	
Montgomery, Alabama	30.36	768 6	30.51	774.9	36	2.2	80	NE	2	0.9	.....	Haze	Sm'e	Calm	Calm	0	0	Hazy.....	
Morgantown, West Virginia	29.09	738.9	30.17	766.3	45	7.2	46	S	14	6.3	.....	10c	0	SW	.....	0	0	Cloudy..	
Mt. Washington, N. H.	23.67	598.7	29.93	760.2	13	—10.6	100	W	24	10.7	.....	.....	Fog	.....	W	0.07	1.8	Foggy	
Nashville, Tennessee	29.85	758.2	30.42	772.7	35	1.7	80	Calm	0	0	.....	2cs	0	Calm	.....	0	0	Clear	
New Haven, Connecticut	30.00	762.0	30.12	765.0	39	3.9	63	SW	1	0.4	.....	.....	10s	.....	Calm	0	0	Cloudy.....	
New London, Connecticut	30.07	763.8	30.12	765.0	38	3.3	72	W	4	1.8	.....	2cs	5s	W	Calm	Inap.	Inap.	Fair	
New Orleans, Louisiana	30.36	771.1	30.42	772.7	51	10.6	79	NE	4	1.8	.....	5ck	0	S	.....	0	0	Fair	
Newport, Rhode Island	30.07	763.8	30.12	765.0	37	2.8	71	N	4	1.8	.....	0	9ks	.....	W	Inap.	Inap.	Cloudy	
New York, New York	29.94	760.5	30.13	765.3	38	3.3	71	W	11	4.9	.....	.....	10s	.....	Calm	0	0	Cloudy	
Norfolk, Virginia	30.22	767.6	30.28	769.1	39	3.9	72	SW	1	0.4	.....	8c	Sm'e	W	Calm	0	0	Cloudy.....	
North Platte, Nebraska	27.12	688.8	29.85	758.2	19	— 7.2	84	NW	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Olympia, Washington Ter.	29.54	750.3	29.58	751.3	49	9.4	93	SW	20	8.9	.....	.....	10n	.....	Calm	2.24	56.9	Light rain...	
Omaha, Nebraska	28.93	734.8	30.05	763.3	33	0.6	79	S	1	0.4	.....	0	2s	.....	Calm	0	0	Clear.	
Oswego, New York	29.53	750.0	29.85	758.2	42	5.6	75	SE	10	4.5	.....	.....	10s	.....	Calm	0.14	3.6	Cloudy.....	
Pembina, Dakota	29.14	740.1	30.00	762.0	28	— 2.2	88	S	4	1.8	.....	.....	10s	.....	SW	0	0	Cloudy.....	
Philadelphia, Pennsylvania	30.12	765.0	30.17	766.3	37	2.8	80	SW	10	4.5	.....	.....	10s	.....	.....	0	0	Cloudy.....	
Phœnix, Arizona	.....	.....	.....	.....	41	5.0	74	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear.	
Pike's Peak, Colorado	17.94	454.8	30.15	765.8	19	— 7.2	69	SW	16	7.2	.....	5cs	0	Calm	.....	0	0	Fair	
Ploche, Nevada	24.10	612.1	29.88	758.9	37	2.8	23	S	6	2.7	.....	2c	0	Calm	.....	0	0	Clear.....	
Pittsburg, Pennsylvania	29.25	742.9	30.07	763.8	44	6.7	52	W	9	4.0	.....	.....	10s	.....	W	0	0	Cloudy.....	
Port Huron, Michigan	29.23	742.4	29.90	759.4	37	2.8	81	SW	11	4.9	.....	8cs	2s	W	Calm	0	0	Cloudy.....	
Portland, Maine	30.05	763.3	30.10	764.5	28	— 2.2	88	N	11	4.9	.....	.....	10n	.....	Calm	0.33	8.4	Light snow..	
Portland, Oregon	29.70	754.4	29.79	756.7	52	11.1	79	SW	16	7.2	.....	0	2s	.....	SW	0.15	3.8	Clear.....	
Prescott, Arizona	24.87	631.7	30.23	767.8	24	— 4.4	48	W	.....	.....	.....	5cs	0	Calm	.....	0	0	Fair	
Punta Rassa, Florida	30.35	770.9	30.36	771.1	59	15.0	76	NE	12	5.4	.....	5cs	0	W	.....	0	0	Fair.....	
Red Bluff, California	29.66	753.4	30.03	762.7	40	4.4	91	N	7	3.1	.....	.....	10s	.....	Calm	0	0	Cloudy.....	
Rochester, New York	29.20	741.7	29.81	757.2	41	5.0	65	SW	6	2.7	.....	.....	10s	.....	W	Inap.	Inap.	Cloudy.....	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	BAROMETER. Corrected for instrum'tal error and temperature. Inches.	BAROMETER. Corrected for instrum'tal error and temperature. Millimeters.	BAROMETER. Reduced to sea-level. Inches.	BAROMETER. Reduced to sea-level. Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Upper. From—	CLOUDS. Direction. Lower. From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	WEATHER.	OBSERVER.
Roseburg, Oregon	29.28	743.7	29.84	757.9	51.5	10.8	72	S	2	0.9	.....	0	10s	.....	Calm	0.04	1.0	Cloudy	
Sacramento, California	29.91	759.7	30.00	762.0	43	6.1	75	E	4	1.8	.....	0	Sm'e	.....	Calm	0	0	Clear	
St. Louis, Missouri	29.63	752.6	30.22	767.6	51	10.6	59	SW	12	5.4	.....	0	Sm'e	.....	.....	0	0	Clear	
St. Marks, Florida	30.46	773.7	30.48	774.2	42	5.6	100	NE	3	1.3	.....	5cs	Fog	W	.....	0	0	Fair	
St. Paul, Minnesota	29.16	740.7	30.01	762.2	32	0.0	79	Calm	0	0	.....	.....	10s	.....	Calm	0	0	Cloudy	
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salt Lake City, Utah	25.70	652.8	30.03	762.7	39	3.9	46	E	8	3.6	.....	0	0	.....	.....	0	0	Clear	
San Antonio, Texas	29.09	754.1	30.31	769.9	42	5.6	66	N	4	1.8	.....	0	2s	.....	N	0	0	Clear	
San Diego, California	29.98	761.5	30.05	763.3	53	11.7	48	NE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Sandusky, Ohio	29.33	745.0	30.00	762.0	44	6.7	67	SW	22	9.8	.....	.....	10s	.....	Calm	0	0	Cloudy	
Sandy Hook, New Jersey	30.10	764.5	30.12	765.0	44	6.7	67	SW	12	5.4	.....	10ck	2s	NW	Calm	0	0	Cloudy	
San Francisco, California	29.92	760.0	29.99	761.7	51	10.6	86	SE	4	1.8	.....	0	1s	.....	Calm	0	0	Clear	
Santa Fé, New Mexico	23.45	595.6	29.99	761.7	23	— 5.0	73	SE	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Savannah, Georgia	30.35	770.9	30.46	773.4	46	7.8	76	W	8	3.6	.....	Sm'e	Fog	.....	.....	0	0	Clear	
Shreveport, Louisiana	30.24	768.1	30.47	773.9	34	1.1	79	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Smithville, North Carolina	30.35	770.9	30.38	771.6	45	7.2	84	W	7	3.1	.....	0	0	.....	.....	0	0	Clear	
Springfield, Massachusetts	29.91	759.7	30.05	763.3	35	1.7	70	Calm	0	0	.....	.....	10s	.....	Calm	0.02	0.5	Cloudy	
Stockton, Texas	27.25	692.1	30.25	768.3	45	7.2	100	S	8	3.6	.....	0	0	.....	.....	Inap.	Inap.	Clear	
Thatcher's Island, Mass	30.07	763.8	30.13	765.3	32	0.0	79	NW	12	5.4	.....	10k	0	N	.....	0.21	5.3	Cloudy	
Toledo, Ohio	29.32	744.7	30.01	762.2	43	6.1	75	SW	12	5.4	.....	.....	10s	.....	SW	0	0	Cloudy	
Tucson, Arizona	27.70	703.6	30.25	768.3	43	6.1	28	SW	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Tybee Island, Georgia	30.42	772.7	30.46	773.7	40	4.4	91	W	4	1.8	.....	0	0	.....	.....	0	6	Clear	
Umatilla, Oregon	29.44	747.8	.....	.....	30	— 1.1	100	NW	4	1.8	.....	.....	Fog	.....	Calm	0	0	Foggy	
Vicksburg, Mississippi	30.22	767.6	30.50	774.7	41	5.0	65	Calm	0	0	.....	2c	Sm'e	Calm	Calm	0	0	Smoky	
Virginia City, Montana	24.18	614.2	29.66	753.4	29	— 1.7	67	SE	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Visalia, California	29.66	753.4	30.04	763.0	42	5.6	74	SE	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Washington, D. C	30.09	764.3	30.21	767.3	38.5	0.8	84	S	1	0.4	.....	.....	.....	.....	.....	0	0	Clear	
Wickenburg, Arizona	.....	.....	.....	.....	28	— 2.2	43	N	.....	.....	.....	.....	10s;sm	.....	W;S	0	0	Cloudy	
Wilmington, N. Carolina	30.28	769.1	30.37	771.4	40	4.4	72	SW	6	2.7	.....	8c	0	Calm	.....	0	0	Fair	
Winnemucca, Nevada	25.62	650.7	29.98	761.5	24	— 4.4	61	NE	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Wood's Holl, Mass	30.08	764.0	30.14	765.5	36	2.2	74	NW	5	2.2	.....	.....	10s	.....	NW	0.02	0.5	Cloudy	
Yankton, Dakota	28.74	730.0	30.11	764.8	20	— 6.7	77	N	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Yuma, Arizona	29.89	759.2	30.06	763.5	48	8.9	42	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
SUB-SERIES.																			
York Factory, B. A	29.61	752.1	29.67	753.6	3.0	—16.1	87	N	9	4.0	.....	0	0	.....	.....	0	0	Clear	J. Fortescue, W. Wood.
Havana, Cuba, W. I	30.16	766.1	30.18	766.6	71	21.7	71	Calm	0	0	.....	8c	2ks	W	NE	0	0	Fair	Chas. Hasselbrink.
Kingston, Jamaica, W. I	30.16	766.1	30.17	766.3	79	26.1	79	Calm	0	0	.....	8c	8n	Calm	E	0	0	.....	James Gall.
Navassa, W. I	29.85	758.2	29.93	760.2	79	26.1	.....	NE	2	0.9	.....	.....	.....	.....	.....	1.10	27.9	Fair	F. M. Everett.
St. Thomas, W. I	.....	.....	.....	.....	78	25.6	65	NE	3	1.3	.....	2c	2k	E	.....	0	0	.....	G. O. Gellich.
Paramaribo, D. Guiana, S. A	.....	.....	30.00	762.0	83	28.3	79	E	.....	.....	3	4c	5k	E	.....	0.060	1.52	½ cloudy	C. J. Hering.
Batavia, Dutch Guiana, S. A	30.02	762.4	30.02	762.6	86.0	30	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.384	9.75	Cloudy	Dr. H. Groot.
Medellin, Colombia, S. A	25.21	640.3	.....	.....	67.5	19.7	78	Calm	.....	.....	0	.....	9s;ks	.....	.....	0	0	Cloudy	Thomas Herran.
Honolulu, Oahu, H. I	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Daniel Smith.
Makawao, Maui, H. I	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo; for Batavia, the barometer reduced to freezing but not to sea-level. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Ploche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m. Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.67 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Ploche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard Mare Island, Cal.	29.95	760.7	45	7.2	44	6.7	84	SSE	1	0.4	.....	.....	7	.....	Calm	Light	Light	.....	.....	Cloudy.....	
Navy Yard, Pensacola, Fla.	30.50	774.7	.....	.....	49	9.4	93	NNE	13	5.8	.....	.....	7	.....	.....	0	0	.....	.....	D. clouds.....	
Navy Yard, Portsmouth, N.H	30.12	765.0	58	14.4	30	— 1.1	78	NW	1	0.4	.....	.....	10	.....	.....	4.25¶	107.9¶	.....	.....	.....	
Naval Hospital, Yokohama, Japan	30.26	768.6	48	8.9	37.5	3.1	71	NW	.....	.....	1	.....	4k	.....	W	0	0	.....	.....	Fair.....	
Adams. S. 39° 51′, W. 75° 47′	29.98	761.5	56	13.3	56	13.3	81	WSW	.....	.....	3	.....	10	.....	SW	Light	Light	Long	SW	D. clouds.....	
Alert, Yokohama, Japan	30.33	770.4	.....	.....	50	10.0	93	Calm	.....	.....	0	.....	0	.....	.....	.....	.....	Smooth	.....	Blue sky.....	
Alliance, Mitylene Channel	30.37	771.4	61	16.1	50	10.0	79	NNE	.....	.....	1	.....	8	.....	NE	.....	.....	.....	.....	Pleasant.....	
Ashuelot, Shanghai, China	30.10	764.5	62	16.7	56	13.3	100	SE	.....	.....	2-3	.....	10	.....	.....	.....	.....	.....	.....	Raining.....	
Canonicus, New Orleans, La	30.36	771.1	41	5.0	49	9.4	93	SE	.....	.....	1	.....	5	.....	.....	.....	.....	.....	.....	Pleasant.....	
Colorado, New York, N. Y.	30.13	765.3	40	4.4	40	4.4	73	SW	6	2.7	.....	.....	9	.....	SW	0	0	.....	.....	Light fog.....	
Despatch, Constantinople, Turkey.	30.38	771.6	57	13.9	45	7.2	84	NNE	.....	.....	3	.....	10	.....	NE	.....	.....	.....	.....	Rainy.....	
Essex, St. Paul de Loanda, Lower Guinea.	29.87	758.7	83	28.3	86	30.0	68	W	.....	.....	2	.....	3	.....	.....	.....	.....	Smooth	.....	D. clouds.....	
Franklin, Norfolk, Va.	30.36	771.1	42	5.6	41	5.0	65	WSW	1.1	0.5	.....	.....	3?	.....	wsw	0	0	.....	.....	Cloudy.....	
Guard, Lisbon, Portugal	30.18	766.6	61	16.1	59	15.0	65	N	.....	.....	3	.....	0	.....	.....	.....	.....	.....	.....	Misty.	
Lackawana, Mare Island, Cal.	30.01	762.2	.....	.....	52	11.1	66	Calm	.....	.....	0	.....	2	.....	W	.....	.....	.....	.....	D. clouds.....	
Marion, Villefranche, France	30.21	767.3	56	13.3	56	13.3	46	W	.....	.....	1	.....	8	.....	Calm	0	0	Smooth	.....	D. clouds.....	
Michigan, Erie, Pa.	29.42	747.3	59	15.0	43	6.1	75	WSW	.....	.....	3	.....	10	.....	W	.....	.....	.....	.....	Cloudy.....	
Monocacy, En route from Shanghai to Amoy, China	29.93	760.2	68	20.0	58	14.4	100	N&W	.....	.....	2	.....	10	.....	.....	.....	.....	Smooth	.....	Rain & fog..	
Monongahela, N. 15° 20′, E. 41° 40′.	30.15	765.8	82	27.8	82	27.8	96	SSE	.....	.....	3	.....	cs	.....	.....	.....	.....	Light	S	D. clouds.....	
New Hampshire, Port Royal, S.C.	30.60	777.2	.....	.....	52	11.1	100	WNW	5	2.2	.....	.....	1	.....	.....	0	0	.....	.....	D. clouds.....	
Omaha, S. 23° 52′, W. 71° 41′	30.07	763.8	68	20.0	66	18.9	81	SSE	5	2.2	.....	.....	9	.....	SSE	0	0	Slight	S	Cloudy.....	
Onward, Callao, Peru	30.02†	762.5†	74	23.3	71	21.7	99	SE	.....	.....	3	.....	1	.....	.....	.....	.....	Long	W	D. clouds.....	
Ossipee, Norfolk, Va.	30.33	770.4	72	22.2	41	5.0	74	SW	.....	.....	1	.....	4	.....	W	.....	.....	.....	.....	D. clouds. ...	
Palos, Shanghai, China	30.08	764.0	59	15.0	56	13.3	94	SE	.....	.....	2	.....	10	.....	.....	.....	.....	.....	.....	Raining	
Plymouth, San Juan, Porto Rico	30.15	765.8	83	28.3	76	24.4	91	ESE	.....	.....	1	.....	4	.....	SE	.....	.....	Smooth	.....	.....	
Powhatan, Norfolk, Va.	.....	.....	.....	.....	43	6.1	93	SW	2.4	1.1	.....	.....	5	.....	.....	0	0	.....	.....	Pleasant.....	
Ranger, Shanghai, China	30.13	765.3	.....	.....	59	15.0	85	SSE	.....	.....	1	.....	10	.....	Calm	.....	.....	.....	.....	Rainy.....	
Rio Bravo, Brownsville, Texas	30.18	766.6	.....	.....	66	18.9	94	ENE	.....	.....	3	.....	10	.....	NE	.....	.....	.....	.....	Raining.....	
Santee, Annapolis, Md.	30.28	769.1	67	19.4	40	4.4	64	WSW	.....	.....	2	.....	10	.....	NW	0	0	.....	.....	Overcast.....	
Saratoga, Norfolk, Va.	.....	.....	.....	.....	36	2.2	90	SW	.....	.....	1	.....	8	.....	S&W	0	0	.....	.....	Fair.....	
St. Louis, League Island, Pa	30.02	762.5	34	1.1	34	1.1	90	SW	5	2.2	.....	.....	7	.....	SW	0	0	.....	.....	Cloudy.....	
Swatara, Norfolk, Va.	30.33	770.4	.....	.....	61	16.1	45	WSW	.....	.....	1	.....	4	.....	S&W	.....	.....	.....	.....	D. clouds.....	
Tennessee, Nagasaki, Japan	30.28	769.1	64	17.8	46	7.8	84	NE	.....	.....	3	.....	0	.....	.....	0	0	Smooth	.....	Hazy.....	
Trenton, Villefranche, France	30.28	769.1	.....	.....	56	13.3	51	N	7	3.1	.....	.....	7	.....	N	0	0	.....	.....	D. clouds.....	
Vandalia, Villefranche, France	30.22	767.6	57	13.9	54	12.2	61	WSW	.....	.....	1	.....	7	.....	.....	.....	.....	.....	.....	D. clouds.....	
Wabash, Boston, Mass.	30.17	766.3	50	10.0	30	— 1.1	.....	WSW	.....	.....	1	.....	8	.....	Calm	0.04	1.0	.....	.....	D. clouds.....	
Wyoming, Washington, D. C.	30.49†	774.4†	.....	.....	33	0.6	.....	Calm	.....	.....	0	.....	10	.....	.....	.....	.....	.....	.....	Hailing.....	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. The position given for the Plymouth is that at noon, local time, instead of that at 7:35 a. m., Washington time. ¶Unmelted snow.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.	Character.	Direction from—		
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—				
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			Capt. Howard.
S. S. City of Peking, N. 29° 48′, W. 160° 38′			29.85*	758.2*	66	18.9	79	W			5		3		W	Small	W	Squally	Lt. Z. L. Tanner, U.S.N.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio, Hong-Kong, China			30.08	764.0	76	24.4		E			4		3		E			D. clouds	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

NOTE.—The originals give the wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. *Aneroid.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.

S. S. Belgic, N. 26° 21′, E. 121° 34′			29.96*	761.0*				Var.			3		Light		NE	Smooth	NE	D. clouds	Capt. John Metcalf.
S. S. Gaelic, Yokohama, Japan			29.97†	761.2†	65?	18.3?	??	N			4		S					D. clouds	Capt. W. H. Kidley
S. S. Oceanic																			Capt. H. Parsell.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. * Corrected for temperature and elevation; instrumental error not known. †Aneroid.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig, N. 39° 0′, W. 66° 44′			30.17	766.3	56.0	13.3	60	NW			5		8		NW	Light	WNW	D. clouds	Capt. Undütsch.
S. S. Nürnberg, N. 26° 0′, W. 70° 42′			30.33	770.4	73.5	23.1	70	ENE			5		c		SW	Smooth	ENE	Blue sky	Capt. A. Jaeger.
S. S. Ohio, N. 49° 26′, W. 11° 57′			29.86	758.4	54.5	12.5	90	SSW			7		10			Rough	W	Overcast	Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds.

UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.			Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Amount.		Direction.					
											Up'er	Lo'wr	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second	0—10.	0—10.	From—	From—	Character.	Direction From—		
AMERICAN S. S. CO. MARINE SERIES.																		
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																		
S. S. Illinois																		Captain Shackelford.
S. S. Indiana, Delaware Bay			30.28*	769.1*	43	6.1	75	WNW		2		2		WNW		WNW	Fine	Captain Sargent.
S. S. Ohio, N. 42° 11′, W. 63° 05′			30.10	764.5	41	5.0	91	ENE		5		10?		ENE	Light		Clear?	Captain Morrison.
S. S. Pennsylvania, Liverpool			29.96†	761.0†	48	8.9	92	SW		3		10		WSW			Cloudy	Captain Harris.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. * Aneroid † Corrected for temperature and elevation, instrumental error not known.

RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

S. S. Nederland																			Capt. Randle.
S. S. Switzerland, N. 42° 40′, W. 60° 04′			30.15*	765.8*				ENE	8	3.6			7		ENE	Smooth		Overcast	Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

*Aneroid: regulated to standard at Antwerp.

ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

S. S. Hibernian																			
S. S. Scandinavian, N. 42° 14,′ W. 65° 20′			30.17	766.3	30	— 1.1		ESE			5		7		SE	Mod'ate	ESE	Overcast	Capt. W. Richardson.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, Kennebunk, Maine			30.12	765.0	31	— 0.6	100	NNE	5	2.2			10n		NE			Light snow	Capt. James Jorgensen.

NOTE.—The originals for the schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer, U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON DECEMBER 12, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:58 P. M. PARIS mean time.

1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.

1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours			30.24	768.0	63.3	17.4	76	E			4		6			0	0	Cloudy	Michel.
Algiers			30.24	768.2	61.9	16.6	85	NW			1		0			0	0	Clear	Peter.
La Calle			30.22	767.5	62.6	17.0	80	NNW			1		5			0	0	Cloudy	Fleury.
Tunis			30.33	770.3	60.1	15.6	81	WSW			1		3			0	0	Pretty fair	Jacques.
Sfax			30.30	769.5	62.6	17.0		NNW			2		1					Very fair	Husson.
Saida			30.20	767.1	49.5	9.7	79	ENE			1		5			0	0	Cloudy	Millot.
Tebessa																			Bassières.
Geriville			30.17	766.2	48.9	9.4	89	SSE			3		4			0	0	Cloudy	Lemaillot.
Laghouat			30.26	768.7	60.8	16.0	50	E			4		2			0	0	Fair	Guyot.
Biskra			30.26	768.7	73.6	23.1	22	Calm			0		5			0	0	Cloudy	Kuntz.

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890 ? meters, or 2,919.9 ? feet; Tebessa, 1,088 ? m., or 3,569.4 ? ft.; Geriville, 1,360 ? m.; or 4,461.7 ? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

Agram	29.71	754.5	30.29	769.3	32.2	0.1	96	Calm			0		10			0	0	Dense fog	Prof. Ivan Stozir
Cracow, I. R. Observatory	29.45	748.1	30.26	768.6	34.2	1.2	85	NE			1		7			0	0		Dr. Wierzbiski.
Eperies	29.35	745.6	30.28	769.2	32.0	0.0	87	S			1		10			0	0		Julius Mikolik.
Gratz	28.97	735.9	30.28	769.1	34.9	1.6	85	SSW			2		8			0	0		Andreas Rospini.
Hermannstadt	28.77	730.8	30.26	768.6	35.1	1.7	69	ESE			1		4			0	0		Prof. Reissenberger.
Kremsmünster	28.83	732.3	30.23	767.9	35.6	2.0	89	Calm			0		5			0	0		Prof. C. Wagner.
Lemberg	29.22	742.1	30.26	768.6	31.1	— 0.5	94	S			1		10			0	0		Dr. T. Stanecki.
Pola	30.16	766.0	30.27	768.9	47.1	8.4	67	WNW			1		10s			0.057	1.44		I.R.Hydrographic Office
Szathmar	29.84	758.0	30.33	770.4	36.9	2.7	74	E			2		10			0	0		Johann Tamas, S. J.
Szegedin	30.00	761.9	30.29	769.3	38.5	3.6	87	Calm			0		10			0.028	0.70		Karl Stancel.
Trieste	30.20	767.1	30.30	769.7	45.8	7.4	61	NW			1		0			0	0	Clear	P. Busin.
Vienna	29.52	749.9	30.26	768.6	34.2	1.2	94	Calm			0		10			0	0		I. R. Central Met. Obs'y

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

Arlon	28.58	726.0	30.16	766.0	33.6	0.9	95	W			4		10			0.311	7.9	Rain & snow	Prof. M. Passau.
Brussels	29.72	755.0	29.93	760.2	39.2	4.0	95	SW			6		10		SW	0.063	1.60		Royal Observatory.
Furnes	29.83	757.6	29.85	758.2	43.0	6.1	94	SSW			6		10			0.209	5.3		M. E. de Cae.
Maeseyck	29.84	757.8	29.97	761.1	37.9	3.3	90	S			6		10			0.094	2.4	Raining	M. Pierrot.

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	29.20	741.7	29.30	744.2	38.0	3.3	.....	WNW	31	13.9	.....	.....	9	.....	.....	0.170	4.32	Squally.....	W. Boswell.
Ardrossan	29.48	748.8	29.50	749.3	42	5.6	.....	WNW	.....	.....	5	.....	8	.....	.....	.....	.....	Raining... ...	William McNeil.
Armagh, Observatory	.....	.....	29.69	754.1	38.7	3.7	.....	SW	17	7.6	.....	.....	5	.....	.....	.....	.....	D. clouds.....	S. Call, for Dr. Robinson
Bidston, (Liverpool Obs.)	.....	.....	29.68	753.9	43.8	6.6	.....	W	48	21.5	.....	.....	3	.....	.....	.....	.....	Blue sky.....	John Hartnup.
Birr Castle, (Parsonstown)	.....	.....	29.83	757.7	39.9	4.4	.....	W	.....	.....	1	.....	7	.....	.....	.....	.....	Showery.....	J. Dreyer.
Bradford, Yorkshire	29.22	742.2	29.61	752.1	43.3	6.3	.....	N	.....	.....	6	.....	4	.....	.....	0.06	1.5	D. clouds.....	J. McLandsborough.
Bridgetown, (Barbados)	29.93	760.2	29.96	761.0	78.0	25.6	.....	NE	.....	.....	2	.....	5?	.....	.....	.....	.....	Overcast?....	Pvt. G. W. Roberts, A.
Cambridge, Observatory	.....	.....	29.75	755.6	47.0	8.3	.....	W	.....	.....	2	.....	7	.....	.....	Blank	Blank	D. clouds.....	H. Todd. [H. O.
Cardington	.....	.....	29.83	757.7	46.6	7.8	.....	W	.....	.....	1	.....	2	.....	.....	.....	.....	Blue sky.....	John McLaren.
Chatham, School M. E.	29.67	753.6	29.80	756.9	47.7	8.7	.....	SW	.....	.....	2	.....	8	.....	.....	.....	.....	Blue sky.....	Lt. W. G. Morris, R. E.
Dartmoor	28.45	722.6	29.97	761.2	41.0	5.0	.....	NW	.....	.....	5	.....	5	.....	.....	.....	.....	Raining.....	Alexander Watt.
Davos Platz (Switzerland)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Francis Redford, M. A.
Donaghadee	29.56	750.8	29.58	751.3	42	5.6	.....	WNW	.....	.....	5	.....	5	.....	.....	.....	.....	D. clouds.. ..	J. Mac Gowan.
Dover	29.80	756.9	29.83	757.7	48	8.9	.....	SW	.....	.....	5	.....	10	.....	.....	.....	.....	Overcast.....	J. Costello.
Eccles, (near Manchester)	.....	.....	29.68	753.9	44.5	6.9	.....	W	8.6	3.8	.....	.....	10	.....	.....	.....	.....	Gloomy.....	Thomas Mackereth.
Falmouth, Observatory	29.75	755.6	29.98	761.5	48.7	9.3	.....	W	.....	.....	4	.....	3	.....	.....	.....	.....	D. clouds.....	The Staff.
Fort Napier, (Natal)	27.52	699.0	29.72	754.9	83.4	28.6	.....	NE	.....	.....	2	.....	1	.....	.....	.....	.....	D. clouds.....	Pvt. G. Salmon, A. H. C.
Free Town, (Sierra Leone)	.....	.....	29.83	757.7	87	30.6	.....	Calm?	.....	.....	1?	.....	4	.....	.....	.....	.....	D. clouds.....	
Galway, Queen's College	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	30.24	768.1	30.30	769.6	62.0	16.7	.....	E	.....	.....	5	.....	7	.....	.....	.....	.....	D. clouds	Corpl. C. Aitken, A. H. C.
Glasgow, Observatory	29.28	743.7	29.48	748.8	39.9	4.4	.....	NNW	.....	.....	4	.....	9	.....	.....	.....	.....	Raining.....	D. G. Maclean.
Great Yarmouth	29.68	753.9	29.68	753.9	49	9.4	.....	WSW	.....	.....	5	.....	6	.....	.....	.....	.....	D. clouds.....	G. T. Watson.
Greenwich, Royal Obs'y	29.64	752.8	29.81	757.2	48.3	9.1	.....	W	.....	.....	4	.....	8	.....	.....	.....	.....	D. clouds.....	The Staff, for G. B. Airy.
Guernsey	29.74	755.4	29.96	761.0	50.5	10.3	.....	WNW	.....	.....	4	.....	8	.....	.....	.....	.....	D. clouds.....	Dr. S. E. Hoskins, F.R.S.
Helston	.....	.....	29.97	761.2	49	9.4	.....	NW	.....	.....	2	.....	8	.....	.....	.....	.....	.....	
Holyhead	29.70	754.4	29.75	755.6	44	6.7	.....	WNW	.....	.....	6	.....	4?	.....	.....	0.28	7.1	Overcast?....	M. P. Moyle.
Jersey	29.72	754.9	30.01	762.2	50.0	10.0	.....	W	.....	.....	6	.....	3	.....	.....	.....	.....	D. clouds.....	John Tilston.
Kew, Observatory	.....	.....	29.82	757.4	48.2	9.0	.....	W	17	7.6	.....	.....	10	.....	.....	Blank	Blank	Overcast.....	J. Fisher.
Kingstown	29.74	755.4	29.77	756.1	42	5.6	.....	W	.....	.....	5	.....	7	.....	.....	.....	.....	D. clouds.....	The Staff.
Leicester, Museum	.....	.....	29.72	754.9	45.5	7.7	.....	W	.....	.....	5	.....	3	.....	.....	.....	.....	Blue sky.....	George Mitchell.
Malta, (Mediterranean)	30.13	765.3	30.21	767.3	64.5	18.2	.....	SE	.....	.....	4	.....	6	.....	.....	.....	.....	D. clouds.....	Wm. J. Harrison, F.G.S.
Nairn	29.35	745.5	29.44	747.8	38	3.3	.....	SW	.....	.....	1	.....	.....	.....	.....	.....	.....	D. clouds.....	Sgt. Fred. Travis, A. H.
Nassau, (Bahamas)	.....	.....	30.28	769.1	72.8	22.7	.....	NE	.....	.....	4	.....	10	.....	.....	.....	.....	Overcast.....	W. D. Penny. [O.
Nottingham, Observatory	29.54	750.3	29.73	755.1	46.6	8.1	.....	WNW	.....	.....	3	.....	5	.....	.....	.....	.....	D. clouds.....	C. S. Duncombe.
Oscott, St. Mary's College	29.21	741.9	29.74	755.4	45.3	7.4	.....	W	.....	.....	6	.....	5k,ks.d.	.....	WNW	0.136	3.46	D. clouds.....	E. J. Lowe, F. R. S.
Oxford, Radcliffe Obs'y	.....	.....	29.81	757.2	47	8.3	.....	W	.....	.....	2	.....	2	.....	.....	.....	.....	D. clouds.....	Rev. Stephen Whitty
Plymouth	29.86	758.4	29.94	760.5	48.0	8.9	.....	NW	.....	.....	3	.....	2	.....	.....	.....	.....	Blue sky.....	Mr. Lucas.
Roche's Point	29.84	757.9	29.88	758.9	43	6.1	.....	NW	.....	.....	3	.....	2	.....	.....	.....	.....	D. clouds.....	D. clouds. John Merrifield.
Saint Ann's Head	29.70	754.4	29.86	758.4	46	7.8	.....	WNW	.....	.....	6	.....	5	.....	.....	.....	.....	Fine.....	W. Kennedy.
Sandwick Manse, (Orkneys.)	.....	.....	29.25	742.9	42.1	5.6	.....	W	5	2.2	.....	.....	10	.....	.....	.....	.....	D. clouds.....	John C. Walker.
Scutari, Cemetery, (Turkey)	.....	.....	30.25	765.3	44.4	6.9	.....	NE	.....	.....	1	.....	8	.....	.....	.....	.....	Overcast	Rev. C. Clouston, LL. D
Sheffield	29.38	746.2	29.66	753.4	44.0	6.7	.....	WNW	.....	.....	6	.....	6	.....	.....	.....	.....	D. clouds.. ..	Sergt. W. H. Lyne.
Silloth Rectory	29.56	750.8	29.59	751.6	43.9	6.6	85	NW	.....	.....	6	.....	2	.....	.....	0.03	0.8	D. clouds.....	W. F. Cooper.
Stonyhurst, Observatory	.....	.....	.....	.....	42.9	6.1	.....	W	.....	.....	6	.....	10	.....	.....	0.120	3.05	D. clouds.....	Rev. F. Redford, M. A.
Stornoway, Lewis C. (Hebr.)	.....	.....	29.33	745.0	37	2.8	.....	W	.....	.....	2	.....	8	.....	.....	.....	.....	Raining.....	Rev. S. J. Perry.
Stratfield Turgiss	29.60	751.8	29.82	757.4	47.0	8.3	.....	W	.....	.....	2	.....	1	.....	.....	.....	.....	D. clouds.....	John Smith.
Thurso	.....	.....	29.24	742.7	41	5.0	.....	WNW	.....	.....	4	.....	8	.....	.....	.....	.....	Squally.....	Rev. C. H. Griffith, F. M. S
Truro, Royal Institution	.....	.....	30.01	762.2	51	10.6	.....	W	.....	.....	4	.....	5	.....	.....	.....	.....	Gloomy.....	John Trotter.
Valencia, Observatory	.....	.....	29.90	759.4	44.6	7.0	.....	W	31	13.9	.....	.....	7	.....	.....	.....	.....	D. clouds.....	W. Newcombe.
Sub-Series.																		D. clouds.....	The Staff.
Calf of Man, (Isle of Man)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Henry Mercer.
Cape Good Hope, Obs'y	30.04	763.0	30.08	764.0	75.5	24.2	70	WNW	12	5.4	.....	1	3	.....	.....	.....	.....	.....	The Staff, for E. J. Stone.
Hobart Town, (Tasmania)	.....	.....	29.26	743.2	64.0	17.8	88	Calm	.....	.....	0	.....	10k	.....	.....	0	0	Cloudy.....	Francis Abbott, F.R.A.S.
Leith, Restalrig Park	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Andrew Gibb.
Mauritius, Observatory	29.79	756.7	29.98	761.5	80.0	26.7	63	ESE	10.0	4.5	.....	1	3	S	E	0	0	Fine.....	C. Meldrum.
Melbourne, Observatory	29.78	756.4	29.87	758.7	77.2	25.1	39	NE	8	3.6	.....	.....	3	.....	.....	0	0	Fine.....	R. L. J. Ellery.
Monach L't-house, (Hebrides)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Youngclause.
North Unst, (Shetland Is.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Robert Burnet.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m.

Marine Series. Vessels.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea or swell. Height scale 0—9	Sea or swell. Direction from—	Weather.	Observer.
S. S. Algeria, N. 40° 35′, W. 69° 10′	.....	.....	30.10	764.5	46	7.8	.....	NNW	.....	.....	6	.....	8	.....	.....	15*	NW	D. clouds.....	Capt. W. Watson.
S. S. Batavia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. J. E. Mouland.
Ship Camperdo	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. A. T. Miller.
Brig Catherine	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. Adam Smith.
Barque Celeste	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. D. F. McKechnie.
S. S. Hibernia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. W. R. Cato
Barque Maroon	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. A. T. Brown.
Ship Mikado	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. C. C. Prehn.
S. S. Seine	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. H. Manning.
Barque Sor t	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. Jas. J. Price.
Schooner Traveller	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. Alex Simpson
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
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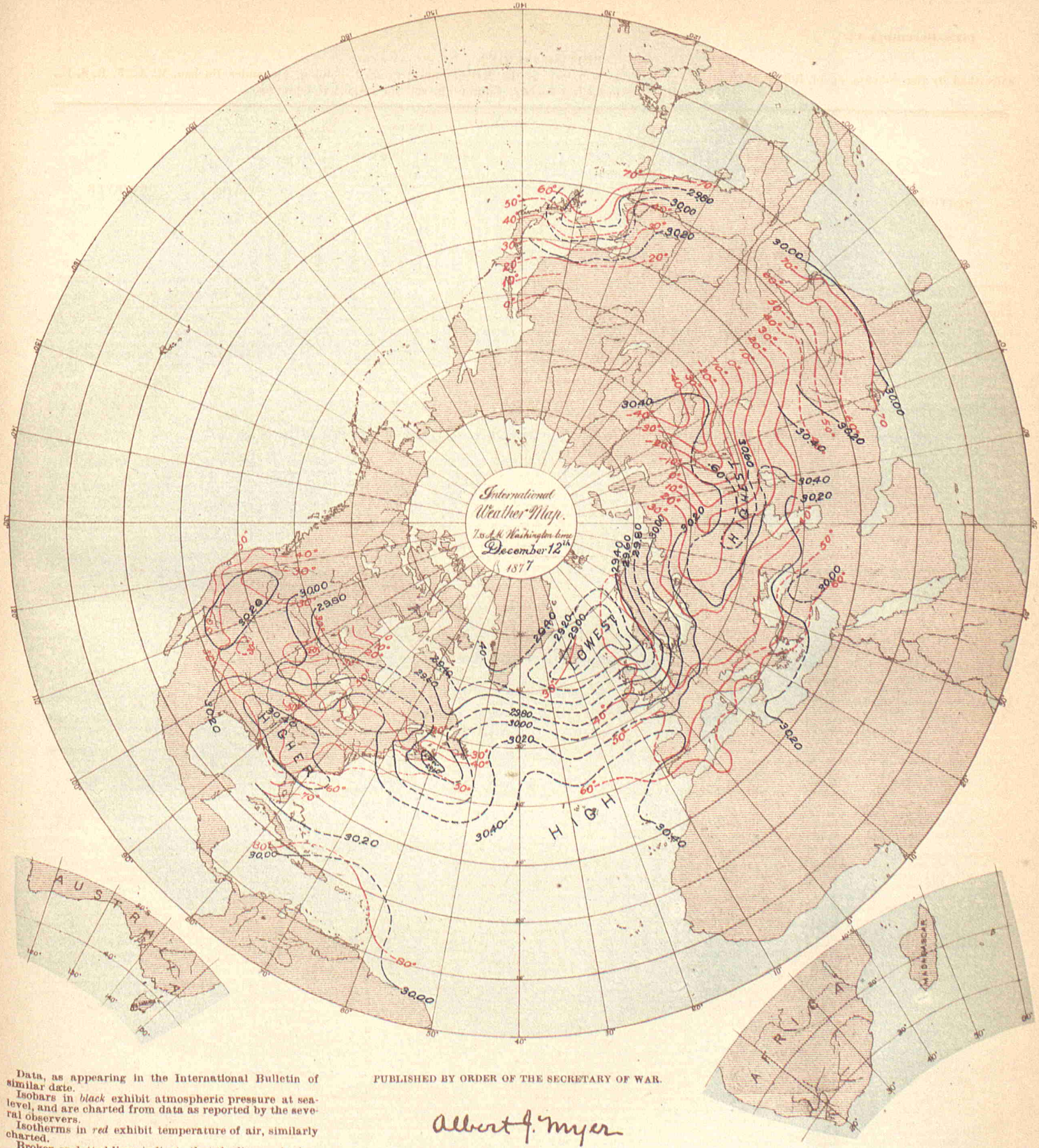
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. *Feet



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	BAROMETER. Corrected for instrum'tal error and temperature. Inches.	BAROMETER. Corrected for instrum'tal error and temperature. Millimeters.	BAROMETER. Reduced to sea-level. Inches.	BAROMETER. Reduced to sea-level. Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Upper. From—	CLOUDS. Direction. Lower. From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	WEATHER.	OBSERVER.
San José	26.21	665.7	.....	.....	67.6	19.8	83	SE	.....	.....	2	0s;kd	2d	.....	NE	0	0	.....	Federico Maison.
.....																			
.....																			

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.87	758.7	29.92	759.9	34.3	1.3	98	SSW	.....	.....	4	.....	10	.....	.....	.....	.....	.....	
Fanöe	29.67	753.5	29.69	754.0	37.2	2.9	100	S	.....	.....	6	.....	10	.....	.....	.....	.....	Raining	
Godthaab, (Greenland)	29.41	746.9	29.45	748.0	24.4	— 4.2	.....	SSE	.....	.....	6	.....	10	.....	.....	.....	.....	Snowing	
Stykkisholm, (Iceland)	28.97	735.8	29.01	736.9	28.6	— 1.9	96	NE	.....	.....	4	.....	5	.....	.....	.....	.....	.....	
Thorshavn, (Farõe)	29.10	739.1	29.13	740.0	39 7	4.3	66	W	.....	.....	4	.....	6	.....	.....	.....	.....	.....	
Vestervig	29.42	747.3	29.59	751.6	33.8	1.0	89	SE	.....	.....	7	.....	10	.....	.....	.....	.....	.....	
.....																			
.....																			
.....																			
.....																			

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

Alengon, Normal School	29.54	750.3	30.09	764.3	44.6	7	37	SW	.....	.....	1	.....	10	.....	.....	0	0	Covered	Collignon, Director.
Amiens, Normal School	29.82	757.5	29.93	760.3	42.8	6.0	94	WSW	.....	.....	2	.....	10	.....	.....	0	0	Covered	Bonvarne, Director.
Avignon, Normal School	30.24	768.0	30.32	770.0	41.0	5	97	N	.....	.....	1	.....	Fog	.....	.....	0	0	Dense fog	Mr. Girand, Director
Bar-sur-Seine	29.58	751.4	30.17	766.3	40.3	4.6	80	S	.....	.....	1	.....	10	.....	.....	0.177	4.5	Covered	C. Saillard.
Beaumette Obs'y (Angers)	29.90	759.4	30.07	763.7	46.8	8.2	97	S	17.4	7.8	.....	.....	10	.....	SW	0.236	6.0	Raining	Albert Cheux.
Beauvais	29.72	755.0	30.02	762.4	41.5	5.3	94	SSW	.....	.....	3	.....	10	.....	SW	0	0	Covered	Normal School.
Beauvais	29.37	745.9	30.29	769.3	42.4	5.8	75	S	.....	.....	2	.....	8	.....	SW	0	0	Very cloudy	Normal School.
Besançon	29.42	747.3	30.35	770.8	42.8	6	82	S	.....	.....	2	.....	5n	.....	W	0	0	Cloudy	Normal School.
Bourg-en-Bresse	29.66	753.3	30.23	767.8	41.7	5.4	93	S	.....	.....	2	.....	10	.....	S	0	0	Covered	A. Wagner, Director.
Bourges, Normal School	29.78	756.4	30.09	764.9	48.4	9.1	81	W	.....	.....	4	.....	10	.....	W	0.256	6.50	.....	The Staff.
Carcassonne, Normal School	29.88	758.9	30.30	769.7	50.4	10.2	80	N	.....	.....	4	.....	5	.....	NW	0	0	Cloudy	Vateau, Director.
Caen	29.92	759.9	29.99	761.8	49.6	9.8	79	WSW	.....	.....	4	.....	10	.....	SSW	0.016	0.4	Covered	Normal School.
Chartres, Normal School	29.39	746 6	29.98	761.4	39.7	4.3	.....	S	.....	.....	6	.....	10	.....	.....	0	0	Covered	Lequin, Director.
Châlons-sur-Marne, N. Sch'l	29.82	757.3	30.15	765.8	37.9	3.3	89	S	.....	.....	3	.....	10n	.....	.....	0	0	Covered	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.85	732.8	30.26	768.6	41.9	5.5	66	S	.....	.....	2	.....	10	.....	SW	0	0	Covered	Allnard, Director.
Commercy, Normal School	29.20	744.0	30.21	767.4	37.0	2.8	97	SW	.....	.....	4	.....	10	.....	SW	0	0	Covered	Dr. Goulet, Director.
Commune de Grésque*	29.21	742.0	30.35	771.0	46.9	8.3	65	NW	.....	.....	2	.....	2	.....	NW	0	0	¼ Covered	M. Kina.
Grenoble	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Normal School.
La Roche-sur-Yon, N. School	29.89	759.2	30.11	764.8	50.7	10.4	86	W	.....	.....	1	.....	10	.....	.....	0	0	Covered	Mouillot, Director.
Le Mans, Normal School	29.78	756.5	30.11	764.7	42.4	5.8	97	SW	.....	.....	4	.....	10	.....	.....	0.028	0.7	Covered	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.35	745.5	30.30	769.5	42.1	5.6	85	SW	.....	.....	•2	.....	10	.....	.....	0	0	Covered	Voudez, Director.
Lorient, Naval Observatory	29.98	761.6	30.08	764.1	51.1	10.6	95	W	.....	.....	3	.....	10	.....	.....	0.213	5.4	Covered	T. Carré, Director.
Mâcon, Normal School	29.57	751.1	30.25	768.4	41.2	5.1	90	Calm	.....	.....	0	.....	10	.....	.....	0	0	Covered	M. Marchal, Director.
Metz	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. A. Schuster, Dir.
Mirecourt	29.10	739.1	30.19	766.9	36.0	2.2	89	W	.....	.....	6	.....	10	.....	E	0	0	Covered	Normal School.
Nismes, Normal School	30.10	764.4	30.38	771.7	48.6	9.2	76	SE	.....	.....	1	.....	10	.....	S	0	0	Covered	Boyer, Director.
Orleans, Normal School	29.71	754.6	30.10	764.5	43.9	6.6	91	SSW	.....	.....	2	.....	8	.....	.....	0.24	6.	Very cloudy	Bernard, Director.
Paris, Observatory	29.81	757.2	30.06	763.5	40.3	4.6	92	S	.....	.....	2	.....	10n	.....	SW	.....	.....	Raining	National Observatory.
Privas	29.17	741.0	30.27	768.9	45.5	7.5	64	SE	.....	.....	1	.....	0	.....	.....	0	0	Clear	Normal School
Rochefort, Naval Obs'y	30.17	766.3	30.20	767.1	47.1	8.4	94	S	.....	.....	2	.....	10	.....	N	0.47	12.	Covered	Lt. Decante, Director.
Rouen, Normal School	29.90	759.4	29.98	761.6	46.9	8.3	83	SSW	.....	.....	3	.....	10	.....	.....	0	0	Covered	F. Lucard, Director.
Tarbes, Normal School	29.11	739.4	30.23	767.8	42.8	6	85	W	.....	.....	1	.....	10	.....	E	.....	.....	Raining	T. Hugues, Director.
Villefranche	29.56	750.9	30.30	769.7	40 5	4.7	100	ESE	.....	.....	1	.....	10	.....	Calm	0	0	Covered	Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.85	758.1	29.87	758.8	36.9	2.7	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.35	9.	.....	L'Abbé Marchési.
Marseilles, Observatory	.....	.....	30.30	769.6	54.1	12.3	71	SW	.....	.....	1	.....	9	.....	.....	0	0	Very cloudy	The Staff.
Mont-Louis	25.03	635.8	30.35	770.8	39.4	4.1	58	WNW	16.8	7.50	.....	.....	10	.....	SW	0.012	0.3	.....	Mr. Falguère.
Nice	.....	.....	30.25	768.4	53.8	12.1	67	SE	.....	.....	4	.....	9	.....	.....	0	0	Covered	Dr. A. Niepce.
Paris, Montsouris Obs'y	29.76	756.0	30.04	763.0	39.2	4.0	93	SSW	.....	.....	4	.....	10	.....	SSW	0.059	1.5	Raining	Marié Davy, Director.
Perpignan	.....	.....	30.29	769.3	54.5	12.5	61	SE	3.7	1.67	.....	.....	2	.....	NW	0	0	.....	Dr. Fines.
Pic du Midi, (Summit,) H. P.	21.35	542.2	.....	.....	29.1	— 1.6	.....	SW	.....	.....	3	.....	8	.....	.....	.....	.....	Fair	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.63	574.9	.....	.....	38.3	3.5	.....	SW	.....	.....	3	.....	8	.....	.....	0	0	Fair	Gen'l de Nansouty.
Saint Maur, (near Paris)	29.90	759.4	30.07	763.6	39.7	4.3	92	SSW	.....	.....	2	.....	10	.....	SW	0.165	4.2	Raining	E. Renou.
Toulouse, Observatory	29.58	751.3	30.30	769 7	45.9	7.7	72	SE	.....	.....	2	.....	2	.....	.....	0.012	0.30	.....	The Staff.
Tours	29.93	760.2	30.13	765.2	43.0	6.1	95	SW	.....	.....	1	.....	10	.....	.....	.....	.....	Rainy	C. Marquet.
Versailles, (near Paris)	.....	.....	30.04	762.9	40.6	4.8	90	SW	.....	.....	3	.....	10	.....	.....	0.054	1.38	Raining	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	29.88	759.0	29.91	759.7	46.4	8.0	88	WNW	26.4	11.8	.....	.....	10k	.....	.....	0.843	21.4	Storm	Marc Dechevrens, S. J.
.....																			
.....																			
.....																			
.....																			

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7. S or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published. At Mirecourt and Rochefort the cloud directions are apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Grèsque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,580.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg																			Prof. Dr. Hoh.
Berlin	29.93	760.2	30.11	764.8	39.2	4.0	76	S			1		5						Prof. Arndt.
Breslau	29.67	753.6	30.21	767.2	34.3	1.3	88	SE			2		10			0	0		Prof. Arndt.
Carlsruhe	29.74	755.5	30.19	766.8	40.6	4.8	82	SW			2		10			0	0	Foggy	Royal University Obs'y.
Cassel	29.52	749.7	30.13	765.2	35.2	1.8	90	SW			2		10			0	0		Albert Senz.
Crefeld	29.83	757.7	29.99	761.8	38.1	3.4	89	S			5		10	SW		0.073	1.86		Dr. H. Möhl.
Emden	29.86	758.4	29.89	759.3	36.7	2.6	96	SW			6		10					Raining	Director Lose.
Frankfort on the Main	29.81	757.1	30.19	766.8	37.0	2.8		SSW			2		10			0	0		Prof. Prestel.
Friedrichshafen	28.78	730.9	30.26	768.5	42.1	5.6	75	WSW			2		9			0	0	Foggy	Physical Society.
Hamburg	29.88	758.9	29.95	760.7	37.2	2.9	80	S			4		9ks	SW		0.185	4.7		M. Wilhelm.
Kiel	29.85	758.2	29.87	758.6	36.0	2.2	87	SSW			4		10			0.004	0.1		Captain F. Hegemann.
Königsberg, (Prussia)	30.11	764.8	30.19	766.8	30.6	— 0.8	86	SE								0	0		Prof. G. Karsten.
Köslin			30.08	764.0	32.0	0.0		S			4		4			0	0	Covered	Prof. E. Luther.
Leipsic, Observatory	29.74	755.4	30.18	766.6	34.5	1.4	82	SW			4		2			0	0		H. Müller.
Memel, Naval School	30.17	766.2	30.21	767.4	27.5	— 2.5	92	SSE			3		10cs;ks						Prof. Bruhns.
Neufahrwasser	30.17	766.4	30.19	766.8	31.5	— 0.3	90	SSW			2		10			0	0		Reinbrech von Skalweit.
Posen	29.92	760.0	30.22	767.6	34.2	1.2	79	SSE			6–7		10			0	0	Cloudy	A. Lothes.
Strassburg Obs., (in Alsace	29.67	753.5	30.24	768.0	41.4	5.2	79	SW			2		10			0	0		Dr. Magener.
Stuttgart	29.21	741.9	30.18	766.6	41.7	5.4	74	W			1		10			0.394	10.0		Dr. Schur.
Treves, (Trier)	29.50	749.2	30.02	762.5	38.3	3.5	81	SW			3		10			0.071	1.80	Foggy	Prof. Schoder.
Weissenburg, (Bavaria)	28.65	727.7	30.20	767.0	41.2	5.1	74	Calm	0	0			7ck	W	W	0	0		Prof. Flesch.
Wustrow, Naval School	30.02	762.5	30.06	763.5	32.2	0.1	90	S			5		4s			0	0		Dr. Von Bebber.
German Naval Series.																			E. F. Schütz.

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet: Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4. Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines, Königsberg, Posen and Wustrow in cubic zolls. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.88	759.0	30.28	769.0	57.7	14.3		W			1							¾ Clear	Dr. J. F. J. Schmidt.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and wind-force; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	30.03	762.6	30.08	764.0	69.5	20.8	61	SW	6.0?	2.7?		0			0	0	Blue sky		
Deesa	29.59	751.6	30.08	764.1	68.8	20.4	24	NW				0			0	0	Blue sky		
Bombay	29.87	758.7	29.91	759.6	77.3	25.2	75	NNW	19.0	8.5		4	SSW		0	0	D. clouds		
Poona	27.90	708.5	29.91	759.6	77.0	25.0	58	E				9	NNE		0	0	D. clouds		
Lahore	29.36	745.8	30.16	765.9	52.5	11.4	80	Calm	2.7	1.2		0			0	0	Blue sky		
Belgaum	27.39	695.6	29.94	760.4	74.9	23.8	82	SE	3.0	1.3		10		SE	0	0	Threatening		
Bangalore																			
Roorkee	29.16	740.7	30.11	764.9	56.4	13.6	84	NW	2.5	1.1		1			0	0			
Agra	29.54	750.2	30.14	765.4	56.3	13.5	66	W							0	0			
Trichinopoly																			
Nagpur	28.96	735.6	30.03	762.8	68.1	20.1	82	Calm	2.6	1.2		9		NE	0	0	D. clouds		
Madras																			
Lucknow	29.71	754.7	30.11	764.8	54.4	12.4	86	Calm	1.4	0.6		0			0	0	Blue sky		
Allahabad	29.77	756.2	30.10	764.6	55.8	13.2	74	Calm	1.6	0.7		0			0	0	Blue sky		
Patna	29.91	759.8	30.10	764.7	60.4	15.8	49	W	1.4	0.6		2	SW	SW	0	0			
Hazaribagh	28.00	711.1	30.10	764.6	57.6	14.2	65	NW	5.8	2.6		9		SW	0	0	Foggy		
Cuttack	29.95	760.8	30.03	762.8	76.2	24.6	80	E	0.8	0.4		4			0	0	D. clouds		
Calcutta (Alipore)	30.04	763.6	30.06	763.5	68.0	20.0	74	N	9.0	4.0		0			0	0	Blue sky		
Goalpara	29.61	752.0	30.01	762.3	65.7	18.7	66	Calm	0.2	0.1		0			0	0	Blue sky		
Chittagong	29.97	761.2	30.06	763.6	73.0	22.8	48	NNE	4.3	1.9		0			0	0	Blue sky		
Sibsagar	29.72	754.8	30.07	763.7	64.5	18.1	89	NE	1.5	0.7		10			0	0	D. clouds		
Rangoon																			
Jubbulpore	28.71	729.2	30.13	765.4	63.0	17.2	48	NW	4.7	2.1					0	0	Blue sky		

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	22.20	563.8	30.23	767.9	23.5	— 4.7	65	SW			2		6	NW		0	0		Ab. Dom. Mongini.
Stelvio	22.19	563.5	30.32	770.2	17.2	— 8.2		SSW	0	0			2	N		0	0		Signora Ernesta Manfredi.
Udine	29.84	758.0	30.27	768.9	42.6	5.9	56	Calm	0	0			0			0	0		Prof. Giovanni Clodig.
Padua	30.16	766 1	30.28	769.0	40.6	4.8	72	SSW	1.8	0.8			0			0	0		Prof. Dott. Lorenzoni.
Vicenza	30.08	763.9	30.28	769.0	41.7	5.4	69	E	0.7	0.3			0			0	0		Conte Alm. Da Schio.
Verona	30.05	763.2	30.28	769.1	44.2	6.8	75	SW	0	0			0			0	0		Dott. B. Bertoncelli.
Bergamo	28.92	734.6	30.31	769.8	41.0	5.0	63	SW			1		0			0	0		Prof. Trionfini Carlo.
Domodossola																			Prof. Giuseppe Calza.
Milan	29.77	756.1	30.32	770.0	39.6	4.2		SSW			2		6	SSW		0.028	0.7		Ab. Gio. Capelli.
Pavia	29.95	760.8	30.32	770.1	37.6	3.1	80	SW			2		9	SW		0	0		Prof. Gio. Cantoni.
Moncalieri	29.37	745.9	30.32	770.1	37.8	3.2	81	ENE	1.3	0.6			7			0	0		Prof. P. F. Denza.
Mondovi	28.32	719.3	30.32	770.1	38.3	3.5	62	NNE			2		6	N		0	0		Prof. D. C. Bruno.
Porto Maurizio	29.98	761.6	30.29	769.4	40.1	4.5	56	ENE			2		9	SW		0	0		Prof. L. Vassallo.
Genoa	30.10	764.6	30.28	769.1	40.5	9.7	56	Calm	0	0			10			0	0		Prof. G. M. Garibaldi.
Piacenza	30.05	763.3	30.32	770.1	38.5	3.6	83	W	3.1	1.4			3	SW		0	0		Dott. G Manzi.
Parma	30.04	762.9	30.37?	771.3?	42.1	5.6	67	NNW			4		4			0	0		Prof. P. Pigorini.
Florence	30.06	763.5	30.33	770.3	43.7	6.5	81	S			2		3			0	0		Cav. F Meucci.
Leghorn	30.21	767.4	30.30	769.6	46.4	8.0	75	NE	4.3	1.9			10			0	0		Prof. P. Monte.
Siena	29.06	738.0	30.31	769.8	43.2	6.2	87	E	0.7	0.3			7	W		0	0		Prof. L. Toscani.
Urbino	28.70	729.0	30.33	770.3	39.4	4.1	80	N			2		5			0.097	5.0		Prof. P. Serpieri.
Pesaro	30.28	769.0	30.33	770.3	43.5	6.4	76	NW	6.3	2.8			10			0	0		Prof. Luigi Guidi.
Ancona	30.20	767.0	30.31	769.8	44.6	7.0	79	W			2		10			0.035	0.9		Prof. F. DeBosis.
Grosseto	30.19	766.9	30.31	769.8	50.7	10.4	66	NNE			2		5	NE		0	0		Avv. P. Ponticelli.
Rome	30.11	764.9	30.30	769.5	55.8	13.2	81	Calm	0	0			10			0	0		Prof. P. A Secchi.
Naples, O. U	30.10	764.4	30.30	769.6	59.7	15.4	79	SSE			1		10	SW		0.138	3.5		Prof. L. Palmieri.
Lecce	30.04	763.0	30.26	768.6	57.6	14.2	73	ENE	2.5	1.1			8			0	0		Prof. C. De Giorgi.
Cosenza	29.40	746.7	30.31	769.8	56.8	13.8	73	SW	0	0			5			0.028	0.7		Prof. F. D. Conti.
Cagliari	30.06	763.5	30.26	768.5	59.0	15.0	74	Calm			0		0			0	0		Prof. A. Pacinotti.
Riposto, (Sicily)	30.23	767.8	30.28	769.0	60.4	15.8	46	Calm			0		0			0	0		Prof. F. Caffero.
Palermo	29.97	761.1	30.23	767.7	60.8	16.0	61	ENE	3.1	1.4			1			0	0		Prof. G. Cacciatore.
Caltanissetta	28.26	717.8	30.24	768.0	56.1	13.4	72	WNW			2		0			0	0		Prof. A. Pagani.
Syracuse	30.19	766.8	30.26	768.7	58.6	14.8	74	E			2		10	NW		0	0		Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.75	755.6	30.30	769.7	55.6	13.1	83	NW	0	0			10			0	0		Prof. F. Brioschi.

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,533.6 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo 379.6 m., or 1,245.3 ft.; Moudovi, 556 m., or 1,824.2 ft.; Siena, 348.6 m., or 1,143.3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Tokei (Yeddo)																			The Observatory.
Tokei (Yeddo) University	29.98	761.5	30.08	763.9	41.3	5.2	88					10n						Raining	Prof. P. V. Veeder.

MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Aguascallentes																			I. N. Marin, M. D.
Córdoba																			C. Peña, M. D.
Cuernavaca																			L. Castillo, A. E.
Guadalajara																			Prof. L. Perez.
Guanajuato																			Prof. V. Fernandez.
Leon																			Prof. M. Leal.
Mexico	29.20	589.4	30.35	770.9	49.6	9.8	89	Calm	0	0			10k			0	0	Covered	Central Observatory.
Orizaba																			N. N.
Orizaba																			I. Orozco, M. D.
Pabellon, (Aguascalts)																			M. V. de Leon, M. E.
Puebla																			Prof. B. Gonzalez.
Toluca																			Prof. C. Velazquez.
Tlacotalpam																			Prof. F. R. Bayly.
San Luis Potosi																			G. Barroeta, M. D.
Vera-Cruz																			Prof. J. Rossell.
Zacatecas																			J. A. Bonilla, M. E.
Puebla, (Catholic Institute)																			P. Spina. [M. M. D. D.
Morelia																			M. Tena, F. L. Páramo

Note.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,771 m., or 5,810 ft; Mexico, 2,290 m., or 7,512.9 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m,, or 8,611.8 ft.; San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	29.85	758 1	29.85	758.1	41.0	5.0		S			5					0.010	0.4		
Groningen	29.75	755.7	29.81	757.1	37.4	3.0		S			5					0.047	1.2		
Helder	29.73	755.1	29.73	755.1	42.8	6.0		SSW			6					0.094	2.4		
Hellevoetsluis			29.84	757.9	39.7	4.3	95	SSW			5								
Utrecht	29.81	757.2	29.80	758.4	38.3	3.5	95	SSW			5		10			0.142	3.6	Dull	H. v d Brnk.

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	29.21	742.0	29.27	743.4	45.0	7.2	77	SSE	27.1	12.1	.....	.....	5	.....	.....	0.819	20.8	.....	
Brönö	29.41	747.0	29.45	748.0	35.6	2.0	51	SE	25	11	.....	.....	5	.....	.....	0	0	.....	
Christiania	29.57	751.1	29.72	755.0	33.3	0.7	90	SSE	9	4	.....	.....	10	.....	.....	0.020	0.5	Snowing	
Tromsö	29.43	747.5	29.47	748.6	40.3	4.6	56	Calm	0	0	.....	.....	4	.....	.....	0	0	.....	
.....																			

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	30.15	765.7	30.34	770.6	62.6	17.0	92	SW	8.1	3.6	.....	.....	7	.....	.....	0	0	.....	Dr. J. A. Sampaio.
Campo Major	29.33	745.0	30.37	771.4	54.5	12.5	61	ENE	4.9	2.2	.....	.....	3	.....	.....	0	0	.....	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.26	768.6	30.33	770.4	68.4	20.2	50	WSW	7.4	3.3	.....	.....	0	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	30.06	762.0	30.37	771.3	54.3	12.4	63	NNE	12.5	5.6	.....	.....	1	.....	.....	0	0	.....	The Staff.
Ponta Delgada, (Azores)	30.35	770.8	30.42	772.6	64.9	18.3	82	SW	10.5	4.7	.....	.....	10	.....	.....	0	0	.....	
.....																			
.....																			

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

Naval Series. Vessels.	Sea or swell. Height scale 0–9	Sea or swell. Direction from—		
S. S. Bartholomew Dias	.....	.....	.....	
S. S. India	.....	.....	.....	R, A. T. Pinha, Com'd't.
S. S. Mindello	.....	.....	.....	A. D. Pedroso, Com'd't.
S. S. Sado	.....	.....	.....	J. F. R. R. Bastos, Com'd't.
S. S. Sá da Bandeira	.....	.....	.....	A. N. P. Sampaio, Com'd't.
S. S. Tejo	.....	.....	.....	F. Texeira da Silva, Com'd't.
.....	.....	.....	.....	F. J. Ferreira, dos Anas, Com'd't

Note.—The originals, except for S. S. Tejo, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.79	756.7	30.24	768.0	32.4	0.2	85	SSE	4	2	.....	.....	10ks;ck	.....	.....	.....	Astronomical Obs.
Wilna	29.87	758.6	30.31	769.9	29.7	— 1.3	86	S	2	1	.....	.....	10	.....	.....	Heavy clouds	Astronomical Obs.
Dorpat	30.00	762.1	30.27	768.7	23.9	— 4.5	94	SE	4	2	.....	.....	10n	.....	.....	.....	Prof. Dr. Weihrauch
St. Petersburg	30.28	769.2	30.30	769.6	19.8	— 6.8	97	SSW	7	3	.....	.....	6ks;s	.....	.....	Light clouds	Central Physical Obs.
Kuopio	29.80	757.0	30.14	765.6	29.3	— 1.5	100	S	27	12	.....	.....	10	.....	.....	.....	Ch. Forsten.
Kieff	29.61	752.2	30.28	769.2	30.4	— 0.9	82	NNE	4	2	.....	.....	10	.....	.....	.....	Physical Cabinet.
Nikolaiev	30.20	767.1	30.27	768.9	33.8	1.0	96	NE	9	4	.....	.....	10n	.....	.....	.....	Kurdakof.
Kertch	30.19	766.8	30.21	767.3	39.7	4.3	92	NE	4	2	.....	.....	10	.....	.....	.....	Lagorio.
Moscow	29.88	759.0	30.49	774.4	15.6	— 9.1	94	S	7	3	.....	.....	8s	.....	.....	.....	Meteorological Obs.
Lugan	30.08	764.0	30.29	769.4	34.2	1.2	65	E	9	4	.....	.....	4c	.....	.....	.....	Meteorological Obs.
Archangel	30.11	764.9	30.13	765.4	32.7	0.4	100	S	13	6	.....	.....	10	.....	.....	.....	Ogorodnikof.
Tiflis	28.79	731.2	30.25	768.4	43.5	6.4	83	Calm	0	0	.....	.....	10	.....	.....	.....	Physical Observatory.
Astrakhan	30.46	773.6	30.37	771.5	27.7	— 2.4	96	NE	2	1	.....	.....	10	.....	.....	.....	Sebastianof.
Kasan	29.99	761.7	30.28	769.1	18.5	— 7.5	92	W	4	2	.....	.....	10	.....	.....	.....	Physical Cabinet.
Orenburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Tschernischet.
Ekaterinburg	29.29	743.9	30.37	771.3	— 8.5	—22.5	79	ENE	7	3	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Nukuss	30.01	762.3	30.26	768.7	23.5	— 4.7	100	WNW	0	0	.....	.....	10	.....	.....	.....	
Kasaly	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	.....	.....	.....	
Tashkend	28.62	726.9	30.42	772.7	33.3	0.7	94	Calm	0	0	.....	.....	.....	.....	.....	.....	Bobrof.
Barnaul	29.68	753.9	30.31	769.9	—33.7	—36.5	80	Calm	0	0	.....	.....	9k	.....	.....	.....	Michelson.
Yeniseisk	30.01	762.2	30.40	772.2	—48.8	—44.9	81	Calm	0	0	.....	.....	0	.....	.....	.....	Meteorological Obs.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	.....	.....	.....	Marks.
Oorga	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Usolzef.
Krotkowo*	30.18	766.5	30.68	779.2	25.6	— 3.9	88	NW	4	2	.....	.....	.....	.....	.....	.....	Mossin.
Peking, (China)	30.07	763.6	30.21	767.2	22.8	— 5.1	59	Calm	0	0	.....	.....	10ks	.....	.....	.....	Cand. Fatjanow.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3k	.....	.....	.....	Physical Observatory
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Nikolaievsk, on the Amoor	30.18	766.6	30.22	767.6	20.1	— 6.6	60	NW	7	3	.....	.....	1c	.....	.....	Lunar halo	
.....	.....	.....	.....	.....	— 8.0	—22.2	69	W	2	1	.....	.....	2k	.....	.....	.....	

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall; for Krotkowo, the barometer reduced to freezing but not to sea-level. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 582.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft. * N. 53° 47′, E. 48° 34′.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Rave, Director.
Bilbao, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Manuel de Naveran
Burgos, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Domingo Martin y Perez.
Madrid, Royal Observatory	28.10	713.6	30.40	772.1	46.9	8.3	81	NE	3.0	1.33	.....	1	0	N	.....	0	0	Light clouds	The Staff.
Murcia, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Olayo Diaz, Director.
Santiago, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	30.18	766.6	30.25	768.3	69.8	21.0	81	Calm	0	0	.....	1c	4k	.....	E	0	0	Fair	Benito Vines, S. J.
San Fernando, Naval Obs'y	30.22	767.7	30.32	770.2	61.5	16.4	73	NNE	2.1	0.9	.....	0	2	.....	NE	0	0	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de PortoRico, W. I.	.....	.....	29.99	761.8	79.9	26.6	84	NE	10.1	4.53	.....	5c	3kn	NE	NE	0	0	Cloudy	Leonardo do Tejeda, Chief of Engineers.

Note.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the cöoperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.91	759.7	29.95	760.7	34.2	1.2		SW			6		10			0	0		
Umea	29.87	758.6	29.92	759.9	33.8	1.0	100	SW			6		10			0	0		
Hernosand	29.82	757.3	29.87	758.6	32.7	0.4	96	SW			4		10			0	0		
Stockholm	29.78	756.3	29.95	760.8	33.4	0.8	85	WSW			4		10			0	0		
Wisby	29.99	761.7	30.05	763.2	34.2	1.2	85	SSW			7		10			0	0		
Sub-Series.																			
Upsala	29.86	758.5	29.94	760.4	30.6	— 0.8	84	SSW	12.3	5.5			10		SW	0.071	1.80		Dr. Hildebrandsson.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the cooperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.81	731.7	30.26	768.7	44.4	6.9	67	S			1		10			0.012	0.3	Covered	The Observatory.
Zurich	28.58	726.0	30.27	768.8	40.3	4.6	81	NW			1		8			0.087	2.2	Cloudy	The Observatory.

Note.—For Geneva the corresponding departures from the normal values are: Barometer, +4.3 mm; Thermometer, +4.7 cent.; Relative Humidity, —13 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople			30.30	769.6	44.2	6.8	69	N	3	1.5			9		SW	0	0		The Observatory.
Fao, (Persian Gulf)																			
Salonica																			B. Stefanidès.
Valona			30.26	768.7	60.1	15.6		SW			1		10			0	0	Covered	A. Bertrand.
Varna																			Imperial Observatory.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.95	760.7	30.07	763.7	64.0	17.8	70	W			1		6ks		W	0.55	14.0	D. clouds	Prof. C. V. A. Van Dyck

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	29.94	760.5	30.01	762.2	22.7	— 5.2	86	NW	5.0	2.2		0							Hon. J. Ferguson.
Brockville, Ontario	29.99	761.7	30.31	769.9	34	1.1		N	1	0.4			10s		N	0	0	Cloudy	W. R. Rigg.
*Chatham, N. B	29.89	759.2	29.95	760.7	23	— 5.0	93	N	14	6.3			2k	5ks	NE	NE	0.09	2.3	Cloudy	G. A. Blair.
Charlottetown, P. E. Island	29.76	755.9	29.80	756.9	31	— 0.6	95	NE	16	7.2			10n		Calm	Calm	1.150	29.21	Light snow	H. J. Cundall, C. E.
Cornwall, Ontario	30.03	762.7	30.23	767.8	33.2	0.7	82	NW				1	10s			0.130	3.30	Cloudy	James Smith, M. A.
Dalhousie, N. B	30.05	763.3	30.08	764.0	19	— 7.2	84	W				1				0.10	2.5	Gloomy	H. A. Johnson.
Esquimault, B. C	30.02	762.5	30.07	763.8	46.3	7.9	100	N					10			0	0	Cloudy	W. H. Bevis.
*Father Point, Quebec	30.06	763.5	30.08	764.0	20	— 6.7	96	S	4	1.8			10n		S	0.10	2.5	Light snow	J. McWilliams.
Fredericton, N. B	29.93	760.2	30.00	762.0	26.2	— 3.2	85	W	4.0	1.8			10es			0.23	5.8	Cloudy	Prof. Harrison.
*Fort Garry, Manitoba	28.93	734.8	29.79	756.7	22	— 5.6	96	S	12	5.4			0	2s		S	0	0	Fair	James Stewart.
Goderich, Ontario																			H. J. Strang, M. A.
Granton, Ontario	29.14	740.1	30.31	769.9	27.2	— 2.7	100	SE			1		0			0	0	Clear	James Grant.
*Halifax, N. S	29.49	749.0	29.63	752.6	34	1.1	96	NW	8	3.6			10n			0.955	24.26	Light snow	F. Allison, M. A.
Hamilton, Ontario	29.70	754.4	30.09	764.3	33.1	0.6	80	SW				1	4c			0	0		Geo. Dickson, M. A
Heart's Content, N. F	30.10	764.5	30.12	765.0	27	— 2.8	100	NW				2		10		0	0	Overcast	E. Weedon.
*Kingston, Ontario	29.96	761.0	30.31	769.9	30	— 1.1	91	NW	1	0.4			0	0		Inap.	Inap.	Clear	S. Woods, M. A.
Little Glace Bay, N. S	29.83	757.7	29.87	758.7	33.0	0.6		NE	20	8.9								Rain & snow	C. H. Rigby.
*Montreal, Quebec	29.99	761.7	30.20	767.1	32	0.0	80	W	13	5.8			5k	5s	NW	0.27	6.9	Cloudy	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.56	750.8	30.29	769.4	30	— 1.1	94	N	1	0.4			2ck	5ks	NW	NW	0	0	Fair	Rev. R. Mosley.
Peterboro, Ontario	29.52	749.8	30.31	769.9	31.8	— 0.1	86	NW			1		10n			1.00	25.4	Foggy	J. F. Jeffers, B. A.
Port Dover, Ontario	29.60	751.8	30.33	770.4	28	— 2.2	88	N	4	1.8			5ck	0	W		0	0	Fair	H. Morgan.
Port Hastings, N. S	29.62	752.3	29.68	753.9	29.5	— 1.4		SE	3	1.3						0.50	12.7	Snowing	Peter Grant.
Port Stanley, Ontario	29.63	752.6	30.32	770.1	26	— 3.3	97	E	2	0.9			2k	0	W		0	0	Clear	M. Payne.
*Quebec, Quebec	29.77	756.1	30.12	765.0	25	— 3.9	87	W	10	4.5				10m		NW	0.21	5.3	Cloudy	Capt. Ashe, R. N
*Rockliffe, Ontario	29.79	756.7	30.28	769.1	30	— 1.1	89	Calm	0	0				8s		NW	0.08	2.0	Fair	W. H. McIntyre.
St. John, N. B	29.73	755.1	29.91	759.7	27	— 2.8	88	NW	11	4.9			10k	0			0.06	1.5	Cloudy	G. Murdock, C. E.
*Saugeen, Ontario	29.59	751.6	30.33	770.4	30	— 1.1	98	N	3	1.3			8k	0	W		0	0	Cloudy	K. Stewart.
Stayner, Ontario	29.49	749.0	30.31	769.9	30	— 1.1	47	Calm	0	0			5c	0	NW		0	0	Fair	R. J. Cole.
Stratford, Ontario	28.06	735.6	30.33	770.4	24.3	— 4.8	99	Calm	0	0				Fog			0	0	Foggy	C. J. MacGregor, M. A.
*Sydney, C. B	29.76	755.9	29.79	756.7	33	0.6	97	NE	11	4.9				10n			0.33	8.4	Heavy snow	T. C. Hill.
*Toronto, Ontario	29.93	760.2	30.34	770.6	29	— 1.7	94	W	2	0.9			5cs	0	W		0	0	Fair	Magnetic Observatory.
Windsor, N. S	29.59?	751.6?	29.64?	752.8?	32.5	0.3	94	N	10	4.5								Snowing	Prof. John E. Oram.
Woodstock, Ontario																			J. Montgomery.
Sub-Series.																			
St. Johns, Newfoundland					29.0	— 1.7		SE					10ks	10s;n			0.02	0.5	Cloudy	John Delany.

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.99	761.7	30.23	767.8	37	2.8	80	W	9	4.0	.....	0	2ks	.....	Calm	0	0	Fair	
Alpena, Michigan	29.54	750.3	30.23	767.8	26	— 3.3	88	Calm	0	0	.....	5c	0	Calm	.....	0	0	Fair	
Atlantic City, New Jersey	30.28	769.1	30.30	769.6	33	0.6	89	NW	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Augusta, Georgia	30.22	767.6	30.42	772.7	34	1.1	89	Calm	0	0	.....	2c	Sm'e	SW	NW	0	0	Smoky	
Baltimore, Maryland	30.30	769.6	30.35	770.9	42	5.6	65	NW	4	1.8	.....	Haze	Sm'e	Calm	Calm	0	0	Smoky	
Barnegat, New Jersey	30.27	768.8	30.29	769.4	37	2.8	80	NW	11	4.9	.....	2ck	0	W	.....	0	0	Fair	
Bismarck, Dakota	28.16	715.3	29.86	758.4	36	2.2	62	W	14	6.3	.....	0	1s	.....	Calm	0	0	Aurora	
Boise City, Idaho	27.45	697.2	30.23	767.8	26	— 3.3	76	S	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Boston, Massachusetts	29.98	761.5	30.11	765.5	36	2.2	63	NW	12	5.4	.....	1cs	Haze	.....	.....	Inap.	Inap.	Clear	
Brackettville, Texas	29.12	739.6	30.17	766.3	54	12.2	73	Calm	0	0	.....	.....	10s	.....	Calm	0	0	Cloudy	
Breckenridge, Minnesota	28.87	733.3	29.92	760.0	19	— 7.2	90	S	6	2.7	.....	5cs	0	Calm	.....	0	0	Fair	
Brownsville, Texas	30.19	766.8	30.26	768.6	59	15.0	94	N	6	2.7	.....	.....	10s	.....	Calm	0.72	18.3	Cloudy	
Buffalo, New York	29.57	751.1	30.31	769.9	32	0.0	100	Calm	0	0	.....	0	Sm'e	.....	Calm	0	0	Clear	
Burkes, Arizona	.....	.....	.....	.....	55	12.8	50	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Burlington, Vermont	29.92	760.0	30.19	766.8	37	2.8	71	NW	9	4.0	.....	.....	10s	.....	Calm	0.06	1.5	Cloudy	
Cairo, Illinois	29.95	760.7	30.35	770.9	48	8.9	49	S	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Camp Grant, Arizona	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Camp Verde, Arizona	26.98	685.3	30.46	773.7	32	0.0	79	NW	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Campo, California	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Cape Hatteras, N. Carolina	30.31	769.9	30.32	770.1	48	8.9	71	N	9	4.0	.....	0	0	.....	.....	0	0	Clear	
Cape Henry, Virginia	30.29	769.4	30.32	770.1	47	8.3	70	NW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Cape Lookout, N. Carolina	30.31	769.9	30.33	770.4	48	8.9	69	NW	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Cape May, New Jersey	30.27	768.8	30.30	769.6	41	5.0	74	NW	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Charleston, South Carolina	30.33	770.4	30.40	772.1	47	8.3	62	W	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Cheyenne, Wyoming	24.19	614.4	30.13	765.3	37	2.8	31	NW	16	7.2	.....	0	5s	.....	NW	0	0	Fair	
Chicago, Illinois	29.40	746.7	30.10	764.5	40	4.4	82	S	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Cincinnati, Ohio	29.61	752.1	30.28	769.1	38	3.3	81	S	2	0.9	.....	2cs	Fg;sn'	Calm	S	0	0	Foggy	
Cleveland, Ohio	29.56	750.8	30.33	770.4	30	— 1.1	68	SE	8	3.6	.....	5cs	Sm'e	Calm	Calm	0	0	Fair	
Concho, Texas	28.34	719.8	30.10	764.5	42	5.6	83	Calm	0	0	.....	8cs	0	E	.....	0	0	Cloudy	
Corsicana, Texas	29.87	758.7	30.36	771.1	47	8.3	85	SE	1	0.4	.....	.....	10s	.....	Calm	0	0	Cloudy	
Davenport, Iowa	29.43	747.5	30.08	764.0	44	6.7	84	SW	1	0.4	.....	Haze	4s	Calm	Calm	0	0	Fair	
Denison, Texas	29.52	749.8	30.36	771.1	41	5.0	74	S	8	3.6	.....	0	1s	.....	Calm	0	0	Clear	
Denver, Colorado	24.95	633.7	30.17	766.3	32	0.0	69	SW	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Detroit, Michigan	29.54	750.3	30.24	768.1	34	1.1	90	E	1	0.4	.....	Haze	5s;fg	Calm	Calm	0	0	Fair	
Dodge City, Kansas	27.47	697.7	29.83	757.7	37	2.8	90	W	8	3.6	.....	0	Haze	.....	Calm	0	0	Clear	
Dubuque, Iowa	29.55	750.6	30.01	762.2	39	3.9	82	S	4	1.8	.....	.....	10s	.....	Calm	0	0	Cloudy	
Duluth, Minnesota	29.21	741.9	29.90	759.4	36	2.2	80	NE	3	1.3	.....	.....	10s	.....	NE	0	0	Cloudy	
Eagle Pass, Texas	29.58	751.3	30.35	770.9	57	13.9	72	Calm	0	0	.....	.....	10s	.....	Calm	0	0	Cloudy	
Eastport, Maine	29.84	757.9	29.91	759.7	27	— 2.8	88	N	22	9.8	.....	.....	10s	.....	N	0.50	12.7	Cloudy	
Erie, Pennsylvania	29.57	751.1	30.32	770.1	34	1.1	79	S	6	2.7	.....	5c	Fog	.....	.....	0	0	Fair	
Escanaba, Michigan	29.44	747.8	30.12	765.0	33	0.6	80	S	1	0.4	.....	5c	0	S	.....	0	0	Fair	
Florence, Arizona	28.44	722.4	30.04	763.0	54	12.2	43	E	.....	.....	.....	0	0	.....	.....	0	0	Clear	
FortBayard, New Mexico	24.24	615.7	30.24	768.1	40	4.4	82	Calm	0	0	.....	.....	10s	.....	Calm	0	0	Cloudy	
Fort Craig, New Mexico	25.77	654.6	.....	.....	42	5.6	83	NW	4	1.8	.....	.....	10s	.....	Calm	0	0	Threatening	
Fort Gibson, Indian Ter	29.74	755.4	30.30	769.6	44	6.7	52	SE	7	3.1	.....	0	0	.....	.....	0	0	Clear	
Fort Griffin, Texas	29.01	736.8	30.34	770.6	38	3.3	91	Calm	0	0	.....	0	8s	.....	Calm	0	0	Cloudy	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	29.03	737.3	30.19	766.8	37	2.8	90	S	4	1.8	.....	1cs	0	SW	.....	0	0	Clear	
Galveston, Texas	30.29	769.4	30.33	770.4	55	12.8	97	E	7	3.1	.....	5ck	2s	S	Calm	0	0	Cloudy	
Grand Haven, Michigan	29.48	748.8	30.15	765.8	38	3.3	72	E	6	2.7	.....	0	2s	.....	Calm	0	0	Fair	
Indianapolis, Indiana	29.43	747.5	30.22	767.6	44	6.7	67	S	6	2.7	.....	1cs	Sm'e	Calm	.....	0	0	Clear	
Indianola, Texas	30.28	769.1	30.31	769.9	56	13.3	100	NE	16	7.2	.....	.....	10n	.....	E	0.17	4.3	Light rain	
Jacksboro, Texas	29.14	740.1	30.31	769.9	44	6.7	60	S	8	3.6	.....	1c	0	Calm	.....	0	0	Clear	
Jacksonville, Florida	30.42	772.7	30.45	773.4	45	7.2	84	Calm	0	0	.....	0	Fog	.....	Calm	0	0	Foggy	
Keokuk, Iowa	29.47	748.5	30.06	763.5	47	8.3	69	SW	12	5.4	.....	0	Haze	.....	Calm	0	0	Clear	
Key West, Florida	30.25	768.3	30.28	769.1	66.5	19.2	87	NE	11	4.9	.....	0	5ks	.....	E	Inap.	Inap.	Fair	
Kittyhawk, North Carolina	30.31	769.9	30.33	770.4	46	7.8	76	NW	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Knoxville, Tennessee	29.42	747.3	30.49	774.4	36	2.2	70	Calm	0	0	.....	0	Sm'e	.....	.....	0	0	Smoky	
La Crosse, Wisconsin	29.22	742.2	29.97	761.2	39	3.9	73	S	4	1.8	.....	0	0	.....	.....	0	0	Clear	
La Mesilla, New Mexico	26.26	667.0	30.42	772.7	38	3.3	86	Calm	0	0	.....	.....	10s	.....	Calm	0	0	Cloudy	
Laredo, Texas	.....	.....	.....	.....	54	12.2	100	NW	6	2.7	.....	.....	10n	.....	Calm	0.07	1.8	Light rain	
Leavenworth, Kansas	29.22	742.2	30.07	763.8	45	7.2	84	SE	4	1.8	.....	2c	0	W	.....	0	0	Clear	
Los Angeles, California	29.72	754.9	30.06	763.5	55	12.8	45	N	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Louisville, Kentucky	29.73	755.1	30.31	769.9	48	8.9	55	S	7	3.1	.....	2c	Fog	SW	Calm	0	0	Fair	
Lynchburg, Virginia	29.62	752.3	30.33	770.4	45	7.2	61	Calm	0	0	.....	0	Haze	.....	Calm	0	0	Hazy	
Maricopa Wells, Arizona	.....	.....	.....	.....	42	5.6	50	N	.....	.....	.....	0	0	.....	Calm	0	0	Clear	
Marquette, Michigan	29.30	744.2	30.02	762.5	38	3.3	71	SE	8	3.6	.....	.....	10s	.....	Calm	0	0	Cloudy	
Mason, Texas	28.67	728.2	30.48	774.2	49	9.4	65	Calm	0	0	.....	.....	10n	.....	.....	Inap.	Inap.	Cloudy	
Memphis, Tennessee	30.07	763.8	30.41	772.4	41	5.0	63	S	4	1.8	.....	0	Sm'e	.....	N	0	0	Clear	
Milwaukee, Wisconsin	29.39	746.5	30.10	764.5	36	2.2	100	S	4	1.8	.....	.....	Fog	.....	Calm	0.02	0.5	Dense fog	
Mobile, Alabama	30.41	772.4	30.46	773.7	43	6.1	95	N	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Montgomery, Alabama	30.23	767.8	30.48	774.2	40.5	4.7	86	Calm	0	0	.....	Haze	Fg;sn'	.....	Calm	0	0	Foggy	
Morgantown, West Virginia	29.26	743.2	30.37	771.4	34	1.1	69	Calm	0	0	.....	0	Sm'e	.....	.....	0	0	Clear	
Mt. Washington, N. H.	23.51	597.1	29.87	758.7	10	—12.2	100	NW	90	40.2	.....	.....	Fog	.....	NW	0.54	13.7	Foggy	
Nashville, Tennessee	29.85	758.2	30.42	772.7	35	1.7	80	E	2	0.9	.....	1cs	Sm'e	Calm	Calm	0	0	Smoky	
New Haven, Connecticut	30.11	764.8	30.23	767.8	41	5.0	63	N	6	2.7	.....	0	0	.....	.....	0	0	Clear	
New London, Connecticut	30.15	765.8	30.20	767.1	39	3.9	73	W	7	3.1	.....	0	0	.....	.....	0	0	Clear	
New Orleans, Louisiana	30.32	770.1	30.38	771.6	50	10.0	86	NE	4	1.8	.....	.....	Fog	.....	Calm	0	0	Foggy	
Newport, Rhode Island	30.11	764.8	30.16	766.1	39	3.9	73	W	9	4.0	.....	0	0	.....	.....	0	0	Clear	
New York, New York	30.05	764.0	30.27	768.8	41	5.0	57	NW	11	4.9	.....	0	0	.....	.....	0	0	Clear	
Norfolk, Virginia	30.27	768.8	30.33	770.4	45	7.2	84	N	1	0.4	.....	.....	Fog	.....	Calm	0	0	Foggy	
North Platte, Nebraska	27.13	689.1	29.80	756.9	39	— 1.1	59	W	16	7.2	.....	0	0	.....	.....	0	0	Clear	
Olympia, Washington Ter.	30.00	762.0	30.04	763.0	46	7.8	100	W	4	1.8	.....	10n	Fog	Calm	Calm	0.61	15.5	Light rain	
Omaha, Nebraska	28.82	732.0	29.99	759.4	43	6.1	83	S	4	1.8	.....	0	2s	.....	Calm	0	0	Clear	
Oswego, New York	29.98	761.5	30.31	769.9	39	3.9	71	NW	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Pembina, Dakota	28.95	735.3	29.80	756.9	28	— 2.2	88	W	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Philadelphia, Pennsylvania	30.28	769.1	30.33	770.4	40	4.4	64	NW	16	7.2	.....	1cs	Sm'e	W	Calm	0	0	Clear	
Phœnix, Arizona	.....	.....	.....	.....	40	4.4	73	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Pike's Peak, Colorado	17.90	454.6	30.11	764.8	13	—10.6	44	S	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Pioche, Nevada	24.23	615.4	30.00	762.0	33	0.6	51	NW	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Pittsburg, Pennsylvania	29.49	749.0	30.35	770.9	34	1.1	100	N	2	0.9	.....	.....	Fog	.....	Calm	0	0	Foggy	
Port Huron, Michigan	29.56	750.8	30.26	768.6	32	0.0	79	SW	3	1.3	.....	0	Fog	.....	.....	0	0	Foggy	
Portland, Maine	30.02	762.5	30.08	764.0	36	2.2	61	NW	16	7.2	.....	1k	0	Calm	.....	0.06	1.5	Clear	
Portland, Oregon	30.05	763.3	30.15	765.8	46	7.8	92	N	3	1.3	.....	.....	Fog	.....	Calm	0.29	7.4	Foggy	
Prescott, Arizona	24.93	633.2	30.29	769.4	27	— 2.8	53	NE	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Punta Rassa, Florida	30.35	770.9	30.37	771.4	59	15.0	81	NE	8	3.6	.....	1k	0	SW	.....	0	0	Clear	
Red Bluff, California	29.79	756.7	30.16	766.1	44	6.7	92	N	5	2.2	.....	0	Haze	.....	Calm	0.23	5.8	Clear	
Rochester, New York	29.66	753.4	30.31	769.9	33	0.6	69	W	6	2.7	.....	0	Haze	.....	Calm	0	0	Clear	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Roseburg, Oregon	29.53	750.0	30.12	765.0	37.5	3.1	100	Calm	0	0	.....	Haze	0	.....	.....	0	0	Fair	
Sacramento, California	30.07	763.8	30.16	766.1	41	5.0	100	N	4	1.8	.....	0	Fog	.....	Calm	0	0	Foggy	
St. Louis, Missouri	29.64	752.8	30.22	767.6	51	10.6	52	S	12	5.4	.....	0	Sm'e	.....	.....	0	0	Clear	
St. Marks, Florida	30.43	772.9	30.44	773.2	39	3.9	91	N	1	0.4	.....	0	0	.....	.....	0	0	Clear	
St. Paul, Minnesota	28.98	736.1	29.83	757.7	36	2.2	90	SE	2	0.9	.....	.....	Fog	.....	Calm	0	0	Foggy	
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salt Lake City, Utah	25.92	658.4	30.25	768.3	31	— 0.6	69	S	4	1.8	.....	0	0	.....	.....	0	0	Clear	
San Antonio, Texas	29.62	752.3	30.22	767.6	56	13.3	75	N	3	1.3	.....	.....	10s	.....	Calm	0	0	Threatening	
San Diego, California	30.00	762.0	30.07	763.8	54	12.2	55	NE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Sandusky, Ohio	29.68	751.3	30.29	769.4	37	2.8	90	Calm	0	0	.....	7cs	Fog	.....	Calm	0	0	Fair	
Sandy Hook, New Jersey	30.25	768.3	30.27	768 8	40	4.4	82	NW	17	7.6	.....	0	0	.....	.....	0	0	Clear	
San Francisco, California	30.06	763.5	30.13	765.3	50	10.0	86	SE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Santa Fé, New Mexico	23.41	594.6	29.95	760.7	22	— 5.6	93	N	8	3.6	.....	.....	Fog	.....	Calm	0	0	Threatening	
Savannah, Georgia	30.32	770.1	30.41	772.4	48	8.9	77	W	8	3.6	.....	Sm'e	Fog	.....	.....	0	0	Clear	
Shreveport, Louisiana	30.19	766.8	30.42	772.7	40	4.4	82	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Smithville, North Carolina	30.34	770.6	30.37	771.4	44	6.7	60	W	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Springfield, Massachusetts	30.00	762.0	30.13	765.3	40	4.4	56	NW	1	0.4	.....	2k	0	W	.....	0	0	Fair	
Stockton, Texas	27.17	690.1	30.17	766 3	47	8.3	85	S	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Thatcher's Island, Mass	30.05	763.3	30.11	764.8	36	2.2	70	NW	24	10.7	.....	0	0	.....	.....	0	0	Clear	
Toledo, Ohio	29.56	750.8	30.27	768.8	37	2.8	80	Calm	0	0	.....	5cs	0	Calm	.....	0	0	Fair	
Tucson, Arizona	27.68	703.1	30.23	767.8	40	4.4	32	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Tybee Island, Georgia	30.37	771.4	30.41	772.4	45	7.2	85	W	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Umatilla, Oregon	29.86	758.4	.....	.....	33	0.6	87	SE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Vicksburg, Mississippi	30.19	766.8	30.47	773.9	48	8.9	85	SE	3	1.3	.....	0	Fog	.....	Calm	0	0	Clear	
Virginia City, Montana	24.44	620.8	29.92	760.0	25	— 3.9	75	SE	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Visalia, California	29.79	756.7	30.18	766.6	36	2.2	90	S	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Washington, D. C.	30.23	767.8	30.35	770.9	38.5	3.6	87	NW	4	1.8	.....	0	Sm'e	.....	NW	0	0	Dense smoke	
Wickenburg, Arizona	.....	.....	.....	.....	32	0.0	69	SE	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Wilmington, N. Carolina	30.26	768.6	30.35	770 9	46	7.8	47	W	4	1.8	.....	0	Sm'e	.....	Calm	0	0	Clear	
Winnemucca, Nevada	28.84	656.3	30.20	767.1	24	— 4.4	74	NE	14	6.3	.....	0	0	.....	.....	0	0	Clear	
Wood's Holl, Mass	30.10	764.5	30.16	766.1	40	4.4	73	NW	15	6.7	.....	Haze	0	Calm	.....	0	0	Clear	
Yankton, Dakota	28.68	728.5	30.02	762.5	20	— 1.7	83	NW	12	5.4	.....	5c	0	NW	.....	0	0	Fair	
Yuma, Arizona	29.96	761.0	30.13	765.3	54	12.2	48	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Sub-Series.																			
York Factory, B. A.	29.54	750.3	29.60	751.8	— 7.0	—21.7	80	W	5	2.2	.....	0	0	.....	.....	0	0	Clear	J. Fortescue, W. Wood.
Havana, Cuba, W. I.	30.15	765.8	30.17	766.3	72	22.2	81	SE	1.2	0.5	.....	4c	4ks	W	E	0	0	Fair	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.18	766.6	30.19	766.8	78	25.6	90	Calm	0	0	.....	5c	8n	Calm	N	0.40	10.2	.....	James Gall.
Navassa, W. I.	29.95	760.7	30.03	762.7	80	26.7	.....	NE	3	1.3	.....	.....	.....	.....	.....	0.25	6.3	Fair	F. M Everett.
St. Thomas, W. I.	.....	.....	.....	.....	78	25.6	73	E	4	1.8	.....	2c	4ks	NE	.....	0	0	.....	G. O. Gellich.
Paramaribo, D. Guiana, S. A.	.....	.....	30.01	762.2	83	28.3	79	E	.....	.....	2	4c	5k	E	.....	0	0	Fair	C. J. Hering.
Batavia, Dutch Guiana, S. A	30.03	762.7	30.04	762.9	85.1	29.5	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0	Cloudy	Dr. H. Groot.
Medellin, Colombia, S. A.	25.21	640.3	.....	.....	67.8	19.9	80	Calm	.....	.....	0	7cs	2s;ks	.....	.....	0	0	Cloudy	Thomas Herran.
Honolulu, Oahu, H. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Daniel Smith.
Makawao, Maui, H. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo; for Batavia, the barometer reduced to freezing but not to sea-level. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,488 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 780 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,265 ft., or 672.1 m.; Mason, 1,600 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,870 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Plocho, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft. or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.. Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in; Plocho, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard Mare Island, Cal.	30.21	767.3	47	8.3	46	7.8	100	E	17	7.6	.....	.....	0	.....	.....	0	0	.....	.....	Clear.....	
Navy Yard, Pensacola, Fla.	30.49	774.4	.....	.....	49	9.4	85	NNE	13	5 8	.....	.....	2	.....	.....	0	0	.....	.....	D. clouds....	
Navy Yard, Portsmouth, N.H	30.14	765.5	65	18.3	33	0.6	80	NW	1	0.4	.....	.....	.....	.....	.....	0	0	.....	.....	Clear	
Naval Hospital, Yokohama, Japan.....	30.07	763.8	51	10.6	43	6.1	83	N	.....	.....	3	.....	10n	.....	SW	Slight	Slight	.....	.....	Raining.....	
Adams. S. 37° 40′, W. 75° 14′.....	30.05	763.3	64	17.8	58	14.4	82	S	.....	.....	1	.....	10	.....	S	0	0	Long	SW	D. clouds....	
Alert, Yokohama, Japan.....	30.14	765.5	.....	.....	51	10.6	71	NNE	.....	.....	1	.....	10	.....	N&E	.....	.....	Smooth	.....	Raining.....	
Alliance, Mitylene, Mitylene Island.	30.38	771.6	73	22.8	53	11.7	67	ENE	.....	.....	0–1	.....	2	.....	ENE	.....	.....	.....	.....	Pleasant.....	
Ashuelot. Shanghai, China.....	29.95	760.7	57	13.9	47	8.3	92	WSW	.....	.....	4–6	.....	10	.....	W	.....	.....	.....	.....	Showery.....	
Canonicus, New Orleans, La.....	30.33	770.4	41	5.0	49	9.4	100	SE	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	Foggy	
Colorado, New York, N. Y.....	30.27	768.8	41	5.0	40	4.4	73	WNW	8	3.6	.....	.....	4	.....	WNW	0	0	.....	.....	Foggy	
Despatch, Constantinople, Turkey.	30.50	774.7	85	29.4	46	7.8	69	NW	.....	.....	1	.....	9	.....	N	.....	.....	.....	.....	Cloudy.....	
Essex, St. Paul de Loanda, Lower Guinea.	29.88	758.9	83	28.3	85	29.4	92	W	.....	.	2	.....	4	.....	.....	.....	.....	.....	SW	D. clouds.....	
Franklin, Norfolk, Va.....	30.41	772.4	46	7.8	44	6.7	76	Calm	0	0	.....	.....	0	.....	.....	0	0	.....	.....	Blue sky.....	
Guard, Lisbon, Portugal.....	30.30	769.6	59	15.0	57	13.9	69	NNE	.....	.....	1–2	.....	2	.....	N&E	.....	.....	.....	.....	Hazy.....	
Lackawana, Mare Island, Cal....	30.17	766.3	.....	.....	49	9.4	100	E	.....	.....	3	.....	2	.....	W	.....	.....	.....	.....	D. clouds.....	
Marion, Villefranche, France.....	30.23	767.8	58	14.4	55	12.8	68	SE	.....	.....	1	.....	8	.....	Calm	0	0	Smooth	.....	D. clouds.....	
Michigan, Erie, Pa.....	29.80	756.9	65	18.3	33	0.6	61	S	.....	.....	1	.....	0	.....	.....	.....	.....	.....	.....	Clear.....	
Monocacy, En route from Shanghai to Amoy, China	29.81	757.2	68	20.0	64	17.8	100	SW	.....	.....	3–4	.....	2	.....	E	0	0	Smooth	.....	D. clouds.....	
Monongahela, N. 14° 03′, E. 42° 40′.	30.05	763.3	86	30.0	86	30.0	96	S	.....	.....	4	.....	cs	.....	.....	.....	.....	Smooth	.....	Squally.....	
New Hampshire, Port Royal, S.C.....	30.63	778.0	.....	.....	47	8.3	85	SW	3	1.3	.....	.....	.....	.....	.....	0	0	.....	.....	Blue sky.....	
Omaha, S. 23° 20′, W. 70° 59′.....	30.08	764.0	68	20.0	66	18.9	79	Calm	0	0	.....	.....	9	.....	Calm	0	0	Slight	S	Cloudy.....	
Onward, Callao, Peru.....	30.02†	762.5†	74	23.3	72	22.2	85	SE	.....	.....	3	.....	7	.....	.....	.....	.....	Long	W	D. clouds.....	
Ossipee, Norfolk, Va.....	30.39	771.9	70	21.1	43	6 1	92	Calm	.....	.....	0	.....	0	.....	.....	.....	.....	.....	.....	Misty.....	
Palos, Shanghai, China	29.88	758.9	56	13.3	46	7.8	92	WSW	.....	.... .	6	.....	10	.....	W	.....	.....	.....	.....	H'y squalls.	
Plymouth. San Juan, Porto Rico.....	30.15	765.8	88	31.1	80	26.7	100	ENE	.....	.....	2	.....	6	.....	ENE	.....	.....	Smooth	.....	Cloudy.....	
Powhatan, Norfolk, Va.....	.....	.....	.....	.....	47	8.3	100	Calm	.....	.....	0	.....	1	.....	.....	0	0	.....	.....	Clear.....	
Ranger, Shanghai, China.....	29.99	761.7	.....	.....	48.5	9.2	??	WNW	.....	.....	2–4	.....	10	.....	Calm	.....	.....	.....	.....	Rainy.....	
Rio Bravo, Brownsville, Texas.....	30.14	765.5	.....	.....	59	15.0	100	NW	.....	.....	2	.....	10	.....	NW	.....	.....	.....	.....	Drizzling.....	
Santee, Annapolis, Md.....	30.40	772.1	66	18.9	40	4.4	82	NW	.....	.....	2	.....	1	.....	.....	0	0	.....	.....	Hazy.....	
Saratoga, Norfolk, Va.....	.....	.....	.....	.....	42	5.6	100	Calm	.....	.....	0	.....	.....	.....	.....	0	0	.....	.....	Clear	
St. Louis, League Island, Pa	30.17	766.3	36	2.2	37	2.8	81	W	3	1.3	.....	.....	1	.....	W	0	0	.....	.....	Clear.....	
Swatara, Norfolk, Va.....	30.40	772.1	.....	.....	49	9.4	85	NNE	.....	.....	1	.....	2	.....	E	.....	.....	.....	.....	Misty.....	
Tennessee, Nagasaki, Japan.....	29.67	753.6	74	23.3	64	17.8	94	SW	.....	.....	1	.....	10	.....	Calm	1.93	49.0	Smooth	.....	Overcast.....	
Trenton, Villefranche, France.....	30.30	769.6	.....	.....	56	13.3	81	SE	8	3.6	.....	.....	5	.....	S&E	0	0	.....	.....	D. clouds	
Vandalia, Villefranche, France.....	30.26	768.6	55	12.8	54	12.2	74	ESE	.....	.....	1	.....	5	.....	.....	.....	.....	.....	.....	D. clouds.....	
Wabash, Boston, Mass.....	30.16	766.1	46	7.8	39	3.9	64	NW	.....	.....	7	.....	0	.....	.....	0	0	.....	.....	Blue sky.....	
Wyoming, Washington, D. C.....	30.58†	776.7†	.....	.....	38	3.3	.....	Calm	.....	.....	0	.....	0	.....	.....	.....	.....	.....	.....	Hazy.....	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the hourly [illegible]. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. The position given for the Plymouth is that at noon, local time, instead of that at 7:35 a. m., Washington time.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.	Character.	Direction from—		
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—				
PACIFIC MAIL S. S. CO. MARINE SERIES. Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			Capt. Howard.
S. S. City of Peking, N. 29° 19′, W. 153° 39′			30.12*	765.0*	61	16.1	82	N			6		8		N	Heavy	N	D. clouds	Lt. Z. L. Tanner, U.S.N.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio, Hong-Kong, China			29.88	758.9	79	26.1							10					Overcast	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

NOTE.—The originals give the wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. *Aneroid.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.

S. S. Belgic, N. 27° 57′, E. 125° 24′			30.10*	764.5*				Var.			5		Heavy		Var.	Mod'ate	SW	Squally	Capt. John Metcalf.
S. S. Gaelic, Yokohama, Japan			29.92†	760.0†	65?	18.3?	??	N			3		N					Raining	Capt. W. H. Kidley
S. S. Oceanic																			Capt. H. Parsell.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. * Corrected for temperature and elevation; instrumental error not known. †Aneroid.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig, N. 40° 36′, W. 60° 18′			29.83	757.7	54.5	12.5	65	W			6		10		W	High	W	Squally	Capt. Undütsch.
S. S. Nürnberg, N. 24° 17′, W. 80° 55′			30.28	769.1	75.5	24.2	75	NE			6		k		ENE	Smooth	ENE	D. clouds	Capt. A. Jaeger.
S. S. Ohio, N. 49° 52′, W. 5° 29′			30.05	763.3	55.0	12.8	54	WNW			6		ks		W	Rough	WSW	Squally	Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds.

UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Lo'wr	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second	0—10.	0—10.	0—10.	From—	From—	Character	Direction From—		
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, Philadelphia, Pa			30.34*	770.6*	38	3.3	??	SW			4		0					Fine	Captain Sargent.
S. S. Ohio, N. 44° 00′, W. 57° 47′			29.77	756.1	46	7.8	92	E			4		10		Calm	Mod'ate	E	Misty	Captain Morrison.
S. S. Pennsylvania, Liverpool			29.76†	755.9†	48	8.9	92	NW			6		4		NW			Clear	Captain Harris.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. * Aneroid † Corrected for temperature and elevation, instrumental error not known.

RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

S. S. Nederland																			Capt. Randle.
S. S. Switzerland, N. 44°, W. 54° 58′			29.82*	757.4*				SE	40	17.9			10		SE	Confused.	ESE	Heavy rain	Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

*Aneroid: regulated to standard at Antwerp.

ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

S. S. Hibernian																			
S. S. Scandinavian, N. 39° 25′, W. 68° 50′			30.06	763.5	44	6.7		N			6		3		N	High	N	D. clouds	Capt. W. Richardson.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, Kennebunk, Maine			30.06	763.5	36	2.2	70	NW	2	0.9			0					Clear	Capt. James Jorgensen.

NOTE.—The originals for the schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^{d},) Chief Signal Officer. U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON DECEMBER 13, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.

1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.

1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer, corrected for instrumental error and temperature. Inches.	Barometer, corrected for instrumental error and temperature. Millimeters.	Barometer, reduced to sea-level. Inches.	Barometer, reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours	.....	.....	30.18	766.6	64.4	18.0	67	N	.....	.....	1	.....	3	.....	.....	0	0	Pretty fair..	Michel.
Algiers	.....	.....	30.11	764.8	60.8	16.0	85	NE	.....	.....	1	.....	0	.....	.....	0	0	Clear.....	Peter.
La Calle	.....	.....	30.10	764.6	65.1	18.4	69	W	.....	.....	1	.....	3	.....	.....	0	0	Pretty fair..	Fleury.
Tunis	.....	.....	30.29	769.4	60.8	15.9	81	WSW	.....	.....	2	.....	5	.....	.....	0	0	Cloudy.....	Jacques.
Sfax	.....	.....	30.24	768.0	62.8	17.1	.....	NNE	.....	.....	2	.....	6	.....	.....	0	0	Cloudy.....	Husson.
Saida	.....	.....	30.10	764.6	60.1	15.6	41	ESE	.....	.....	1	.....	1	.....	.....	0	0	Very fair....	Millot.
Tebessa	.....	.....	30.18	766.6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Bassières.
Geriville	.....	.....	30.11	764.8	48.9	9.4	92	S	.....	.....	3	.....	3	.....	.....	0	0	Pretty fair .	Lemaillot.
Laghouat	.....	.....	30.17	766.4	59.0	15.0	58	E	.....	.....	3	.....	3	.....	.....	0	0	Pretty fair..	Guyot.
Biskra	.....	.....	30.12	765.0	70.5	21.4	45	NE	.....	.....	1	.....	6	.....	.....	0	0	Cloudy.....	Kuntz.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m.; or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

STATIONS.	Barometer, corrected for instrumental error and temperature. Inches.	Barometer, corrected for instrumental error and temperature. Millimeters.	Barometer, reduced to sea-level. Inches.	Barometer, reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Agram	29.61	752.0	30.19	766.8	32.0	0.0	98	Calm	.....	.....	0	.....	10	.....	.....	0	0	Dense fog....	Prof. Ivan Stozir
Cracow, I. R. Observatory	29.34	745.3	30.15	765.7	34.2	1.2	96	W	.....	.....	1	.....	10	.....	.....	0.020	0.5	.....	Dr. Wierzbiski.
Eperies	29.25	743.0	30.18	766.5	33.4	0.8	87	Calm	.....	.....	0	.....	10	.....	.....	0	0	.....	Julius Mikolik.
Gratz	28.90	734.1	30.22	767.6	32.4	0.2	89	S	.....	.....	2	.....	5	.....	.....	0	0	.....	Andreas Rospini.
Hermannstadt	28.74	729.9	30.22	767.5	37.2	2.9	86	ESE	.....	.....	1	.....	5	.....	.....	0	0	.....	Prof. Reissenberger.
Kremsmünster	28.74	730.1	30.13	765.3	39.6	4.2	93	Calm	.....	.....	0	.....	10	.....	.....	0.244	6.2	.....	Prof. C. Wagner.
Lemberg	29.10	739.2	30.14	765.5	34.7	1.5	72	SW	.....	.....	1	.....	10	.....	.....	0	0	.....	Dr. T. Stanecki.
Pola	30.08	763.9	30.19	766.8	48.2	9.0	71	Calm	.....	.....	0	.....	10s	.....	.....	0	0	.....	I.R.Hydrographic Office
Szathmar	29.81	757.2	30.29	769.4	36.0	2.2	89	SW	.....	.....	2	.....	10	.....	.....	0	0	.....	Johann Tamas, S. J.
Szegedin	29.90	759.4	30.19	766.8	37.4	3.0	90	Calm	.....	.....	0	.....	10	.....	.....	0	0	.....	Karl Stancel.
Trieste	30.11	764.8	30.21	767.4	47.8	8.8	62	Calm	.....	.....	0	.....	10	.....	.....	0.417	10.6	Raining...	P. Busin.
Vienna	29.44	747.8	30.18	766.5	33.6	0.9	96	Calm	.....	.....	0	.....	10	.....	.....	0.110	2.8	.....	I. R. Central Met. Obs'y
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or 1,124.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

STATIONS.	Barometer, corrected for instrumental error and temperature. Inches.	Barometer, corrected for instrumental error and temperature. Millimeters.	Barometer, reduced to sea-level. Inches.	Barometer, reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Arlon	28.53	724.6	30.08	764.1	37.6	3.1	95	SW	.....	.....	2	.....	10	.....	.....	0.122	3.1	.....	Prof. M. Passau.
Brussels	29.75	755.7	29.96	760.9	40.5	4.7	86	SW	.....	.....	4	.....	10	.....	WSW	0	0	.....	Royal Observatory.
Furnes	29.92	759.9	29.94	760.5	43.9	6.6	85	SW	.....	.....	2	.....	3	.....	.....	0.008	0 2	.....	M. E. de Cae.
Maeseyck	29.84	757.8	29.97	761.1	40.8	4.9	88	SSW	.....	.....	6	.....	10	.....	.....	0	0	.....	M. Pierrot.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Aberdeen	29.42	747.3	29.62	749.8	35.9	2.2	.....	S	9	4.0	.....	.....	6	.....	.....	0	0	Misty	W. Boswell.
Ardrossan	29.60	751.8	29.62	752.3	41	5.0	.....	W	.....	.....	4	.....	10	.....	.....	.....	.....	Raining	William McNeil.
Armagh, Observatory	.....	.....	29.79	756.7	37.2	2.9	.....	SW	13	5.8	.....	.....	7	.....	.....	.....	.....	D. c'ouds	S. Call, for Dr. Robinson
Bidston, (Liverpool Obs.)	.....	.....	29.77	756.1	40.3	4.6	.....	W	29	13.0	.....	.....	8	.....	.....	.....	.....	Overcast	John Hartnup.
Birr Castle, (Parsonstown)	.....	.....	29.91	759.7	39.8	4.3	.....	WSW	.....	.....	1	.....	0	.....	.....	.....	.....	Blue sky	J. Dreyer.
Bradford, Yorkshire	29.33	745.0	29.73	755.1	37.7	3.2	.....	N	.....	.....	4	.....	6	.....	.....	0.25	6.3	D. clouds	J. McLandsborough.
Bridgetown, (Barbados)	29.90	759.4	29.93	760.2	79.8	26.6	.....	NE	.....	.....	1	.....	4	.....	.....	.....	.....	D. clouds	Pvt. G. W. Roberts, A.
Cambridge, Observatory	.....	.....	29.85	758.2	41.0	5.0	.....	SW	.....	.....	2	.....	10	.....	.....	.....	.....	Overcast	H. Todd. [H. C.
Cardington	.....	.....	29.86	758.4	42.0	5.6	.....	SW	.....	.....	1	.....	6	.....	.....	.....	.....	D. clouds	John McLaren.
Chatham, School M. E.	29.76	755.9	29.90	759.4	45.7	7.6	.....	W	.....	.....	1	.....	6	.....	.....	.....	.....	Blue sky	Lt. W. G. Morris, R. E.
Dartmoor	28.50	723.9	30.01	762.2	37.4	3.0	.....	NW	.....	.....	4	.....	5	.....	.....	.....	.....	Hailing	Alexander Watt.
Davos Platz (Switzerland)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Francis Redford, M. A.
Donaghadee	29.70	754.4	29.73	755.1	38	3.3	.....	W	.....	.....	4	.....	5	.....	.....	.....	.....	D. clouds	J. Mac Gowan.
Dover	29.90	759.4	29.92	760.0	44	6.7	.....	W	.....	.....	4	.....	5	.....	.....	.....	.....	½ clouded	J. Costello.
Eccles, (near Manchester)	.....	.....	29.77	756.1	38.1	3.4	.....	W	3.8	1.7	.....	.....	10	.....	.....	.....	.....	Raining	Thomas Mackereth.
Falmouth, Observatory	29.78	756.4	30.02	762.5	44.0	6.7	.....	W	.....	.....	3	.....	7	.....	.....	.....	.....	Overcast	The Staff.
Fort Napier, (Natal)	27.51	698.7	29.72	754.9	78.8	26.0	.....	E	.....	.....	2	.....	1	.....	.....	.....	.....	D. clouds	Pvt. G. Salmon, A. H. C.
Free Town, (Sierra Leone)	.....	.....	29.96	761.0	85	29.4	.....	W	.....	.....	1	.....	3	.....	.....	.....	.....	D. clouds	
Galway, Queen's College	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	30.16	766.1	30.22	767.6	62.5	16.9	.....	E	.....	.....	3	.....	7	.....	.....	.....	.....	D. clouds	Corpl. C. Aitken, A. H. C.
Glasgow, Observatory	29.40	746.7	29.61	752.1	38.0	3.3	.....	W	.....	.....	2	.....	9	.....	.....	.....	.....	Gloomy	D. G. Maclean.
Great Yarmouth	29.83	757.7	29.84	757.9	41	5.0	.....	W	.....	.....	2	.....	8	.....	.....	.....	.....	Foggy	G. T. Watson.
Greenwich, Royal Obs'y	29.74	755.4	29.91	759.7	43.1	6.2	.....	WSW	.....	.....	4	.....	8	.....	.....	.....	.....	Thin clouds	The Staff, for G. B. Airy.
Guernsey	29.81	757.2	30.04	763.0	48	8.9	.....	WSW	.....	.....	4	.....	5	.....	.....	.....	.....	D. clouds	Dr. S. E. Hoskins, F.R.S.
Helston	.....	.....	30.00	762.0	44	6.7	.....	NW	.....	.....	4	.....	4	.....	.....	0.10	2.5	D. clouds	M. P. Moyle.
Holyhead	29.78	756.4	29.83	757.7	43	6.1	.....	W	.....	.....	4	.....	3	.....	.....	.....	.....	D. clouds	John Tilston.
Jersey	29.77	756.1	30.07	763.8	48.5	9.2	.....	W	.....	.....	5	.....	3	.....	.....	Blank	Blank	D. clouds	J. Fisher.
Kew, Observatory	.....	.....	29.91	759.7	42.6	5.9	.....	SW	11	4.9	.....	.....	9	.....	.....	.....	.....	Threatening	The Staff.
Kingstown	29.82	757.4	29.85	758.2	40	4.4	.....	W	.....	.....	5	.....	1	.....	.....	.....	.....	Blue sky	George Mitchell.
Leicester, Museum	.....	.....	29.81	757.2	40.7	4.8	.....	SW	.....	.....	2	.....	7	.....	.....	.....	.....	D. clouds	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	30.12	765.0	30.19	766.8	62.2	16.8	.....	SE	.....	.....	2	.....	4	.....	.....	.....	.....	D. clouds	Sgt. Fred. Travis, A. H.
Nairn	29.38	746.2	29.48	748.8	36	2.2	.....	W	.....	.....	1	.....	5	.....	.....	.....	.....	½ clouded	W. D. Penny. [C.
Nassau, (Bahamas)	.....	.....	30.26	768.6	71.2	21.8	.....	NE	.....	.....	3	.....	8	.....	.....	.....	.....	D. clouds	C. S. Duncombe.
Nottingham, Observatory	29.61	752.1	29.80	756.9	40.9	4.9	.....	SW	.....	.....	3	.....	6c;ck;k	.....	SW;W	0.043	1.09	D. clouds	E. J. Lowe, F. R. S
Oscott, St. Mary's College	29.28	743.7	29.82	757.4	39.0	3.9	.....	WSW	.....	.....	4	.....	10	.....	.....	.....	.....	Raining	Rev. Stephen Whitty
Oxford, Radcliffe Obs'y	.....	.....	29.88	758.9	43	6.1	.....	SW	.....	.....	1	.....	7	.....	.....	.....	.....	D. clouds	Mr. Lucas.
Plymouth	29.90	759.4	29.98	761.5	44.5	6.9	.....	W	.....	.....	2	.....	1	.....	.....	.....	.....	D. clouds	John Merrifield.
Roche's Point	29.92	760.0	29.96	761.0	42	5.6	.....	WNW	.....	.....	4	.....	5	.....	.....	.....	.....	Showery	W. Kennedy.
Saint Ann's Head	29.73	755.1	29.89	759.2	45	7.2	.....	WNW	.....	.....	5	.....	7	.....	.....	.....	.....	D. clouds	John C. Walker.
Sandwick Manse, (Orkneys.)	.....	.....	29.35	745.5	39.5	4.2	.....	WSW	22	9.8	.....	.....	8	.....	.....	.....	.....	Showery	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey	.....	.....	30.14	765.5	43.6	6.4	.....	NE	.....	.....	1	.....	9	.....	.....	Blank	Blank	Gloomy	Sergt. W. H. Lyne.
Sheffield	29.48	748.8	29.76	755.9	39.3	4.1	.....	SW	.....	.....	5	.....	6	.....	.....	0.04	1.0	Squally	W. F. Cooper.
Silloth Rectory	29.65	753.1	29.68	753.9	42.2	5.7	79	SW	.....	.....	3	.....	8	.....	.....	0.140	3.56	D. clouds	Rev. F. Redford, M. A.
Stonyhurst, Observatory	.....	.....	.....	.....	39.4	4.1	.....	W	.....	.....	2	.....	10	.....	.....	.....	.....	Overcast	Rev. S. J. Perry.
Stornoway, Lewis C. (Hebr.)	.....	.....	29.44	747.8	37	2.8	.....	W	.....	.....	3	.....	10	.....	.....	.....	.....	Hailing	John Smith.
Stratfield Turgiss	29.70	754.4	29.92	760.0	41.4	5.2	.....	NW	.....	.....	1	.....	7	.....	.....	.....	.....	D. clouds	Rev. C. H. Griffith, F.M.S.
Thurso	.....	.....	29.38	746.2	37	2.8	.....	SW	.....	.....	4	.....	8	.....	.....	.....	.....	Raining	John Trotter.
Truro, Royal Institution	.....	.....	30.02	762.5	48	8.9	.....	W	.....	.....	6	.....	4	.....	.....	.....	.....	D. clouds	W. Newcombe.
Valencia, Observatory	.....	.....	30.00	762.0	45.1	7.3	.....	WNW	25	11.2	.....	.....	4	.....	.....	.....	.....	D. clouds	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Henry Mercer.
Cape Good Hope, Obs'y	29.88	758.9	29.92	760.0	73.0	22.8	58	W	19	8.5	.....	9	2	.....	.....	.....	.....	.....	The Staff, for E. J. Stone.
Hobart Town, (Tasmania)	.....	.....	29.77	756.1	66.5	19.2	73	NW	.....	.....	3	.....	10k	.....	.....	0	0	Covered	Francis Abbott, F.R.A.S.
Leith, Restalrig Park	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Andrew Gibb.
Mauritius, Observatory	29.80	756.9	29.99	761.6	81.8	27.7	64	ENE	12.0	5.4	.....	2	4	.....	NE	0	0	Fine	C. Meldrum.
Melbourne, Observatory	29.85	758.2	29.94	760.5	60.4	15.8	80	S	5	2.2	.....	.....	4	.....	W	0	0	Lightning	R. L. J. Ellery.
Monach L't-house, (Hebrides)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Youngclause.
North Unst, (Shetland Is.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Robert Burnet.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series: 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m.

Marine Series. Vessels.	Sea or swell. Height scale 0—9	Sea or swell. Direction from—	Weather	Observer.
S. S. Algeria	.....	.....	.....	Capt. W. Watson.
S. S. Batavia	.....	.....	.....	Capt. J. E. Mouland.
Ship Campe down	.....	.....	.....	Capt. A. T. Miller.
Brig Catherine	.....	.....	.....	Capt. Adam Smith.
Barque Celeste	.....	.....	.....	Capt. D. F. McKechnie.
S. S. Hibernia	.....	.....	.....	Capt. W. R. Cato
Barque Maroon	.....	.....	.....	Capt. A. T. Brown.
Ship Mikado	.....	.....	.....	Capt. C. C. Prehn.
S. S. Seine	.....	.....	.....	Capt. H. Manning.
Barque Sorsta	.....	.....	.....	Capt. Jas. J. Price.
Schooner Traveller	.....	.....	.....	Capt. Alex Simpson
.....	.....	.....	.....	
.....	.....	.....	.....	
.....	.....	.....	.....	
.....	.....	.....	.....	
.....	.....	.....	.....	
.....	.....	.....	.....	

Note.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	OBSERVER.
San José	26.60	665.5	.....	.....	69.4	20.8	75	SE	.....	.....	6	1c	2s	.....	E	0	0	.....	Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.77	756.2	29.82	757.4	39.2	4.0	98	SW	.....	.....	2	.....	0	.....	.....	.....	.....	.....	.....
Fanöe	29.73	755.2	29.75	755.7	40.8	4.9	81	SW	.....	.....	4	.....	6	.....	.....	.....	.....	.....	.....
Godthaab, (Greenland)	29.59	751.6	29.63	752.7	24.1	— 4.4	98	SSE	.....	.....	2	.....	10	.....	.....	.....	.....	.....	.....
Stykkisholm, (Iceland)	29.44	747.8	29.48	748.9	24.6	— 4.1	96	S	.....	.....	1	.....	5	.....	.....	.....	.....	.....	.....
Thorshavn, (Faröe)	29.42	747.3	29.46	748.2	36.7	2.6	69	NNE	.....	.....	2	.....	3	.....	.....	.....	.....	.....	.....
Vestervig	29.51	749.6	29.68	753.9	39.4	4.1	88	SW	.....	.....	2	.....	6	.....	.....	.....	.....	.....	.....

NOTE.—The originals give the wind-force by the scale 0 to 8; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

Alençon, Normal School	29.60	751.7	30.15	765.7	46.4	8	29	SW	.....	.....	1	.....	5	.....	SW	0	0	Cloudy	Collignon, Director.
Amiens, Normal School	29.85	758.3	29.97	761.1	41.6	7.0	97	W	.....	.....	2	.....	10	.....	.....	0.039	1.0	Covered	Bonvarne, Director.
Avignon, Normal School	30.10	764.4	30.17	766.4	46.0	7.8	86	N	.....	.....	1	.....	.....	.....	.....	0	0	Misty	Mr. Giraud, Director
Bar-sur-Seine	29.54	750.4	30.13	765.2	43.9	6.6	82	SW	.....	.....	1	.....	5cn	.....	SW	0.008	0.2	Cloudy	C. Saillard.
Beaumette Obs'y (Angers)	29.95	760.8	30.12	765.0	43.9	6.6	85	WSW	4.0	1.8	.....	.....	.....	.....	SW	0	0	.....	Albert Cheux.
Beauvais	29.77	756.1	30.07	763.6	42.3	5.7	86	WSW	.....	.....	2	.....	5	.....	W	0.069	1.75	Cloudy	Normal School.
Besançon	29.27	743.5	30.19	766.9	42.1	5.6	96	SSW	.....	.....	2	.....	10	.....	.....	0.189	4.8	Covered	Normal School.
Bourg-en-Bresse	29.38	746.2	30.31	769.8	45.0	7.2	85	S	.....	.....	2	.....	5n	.....	W	0.08	2.	Cloudy	Normal School.
Bourges, Normal School	29.65	753.1	30.22	767.6	41.2	5.1	81	S	.....	.....	2	.....	5	.....	S	0.209	5.3	Cloudy	A. Wagner, Director.
Brest, Naval Observatory	29.84	757.9	30.06	763.4	50.2	10.1	74	W	.....	.....	4	.....	2n	.....	W	0.098	2.50	Hailing	The Staff.
Carcassonne, Normal School	29.80	756.9	30.22	767.6	50.4	10.2	76	N	.....	.....	2	.....	5	.....	N	0	0	Cloudy	Vateau, Director.
Caen	29.97	761.3	30.07	763.6	46.4	8	83	SSW	.....	.....	1	.....	2	.....	WNW	0.051	1.3	Slightly cl'dy	Normal School.
Chartres, Normal School	29.48	748.7	30.06	763.5	44.6	7	.....	W	.....	.....	2	.....	2	.....	NE	0.16	4.	.....	Lequin, Director.
Châlons-sur-Marne, N. Sch'l	29.77	756.2	30.10	764.6	43.7	6.5	91	NW	.....	.....	3	.....	10n	.....	.....	0.138	3.5	Covered	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.76	730.5	30.14	765.5	47.7	8.7	75	SW	.....	.....	2	.....	10	.....	SW	0.016	0.4	Covered	Alluard, Director.
Commercy, Normal School	29.24	742.6	30.15	765.8	42.1	5.6	91	W	.....	.....	4	.....	8	.....	W	0.12	3.	Very cloudy	Dr. Goulet, Director.
Commune de Gréasque*	29.06	738.2	30.21	767.2	47.7	8.7	67	NW	.....	.....	1	.....	10	.....	NW	0	0	Covered	... Kiné.
Grenoble	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Normal School.
La Roche-sur-Yon, N. School	30.01	762.2	30.23	767.8	48.0	8.9	84	W	.....	.....	1	.....	10	.....	.....	0.591	15.0	Covered	Moullot, Director.
Le Mans, Normal School	29.81	757.2	30.13	765.4	42.6	5.9	84	W	.....	.....	2	.....	2	.....	W	0.24	6.	Slightly cl'dy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.25	742.9	29.10	766.8	41.9	5.5	96	S	.....	.....	2	.....	10	.....	.....	0.162	3.85	Covered	Voudez, Director.
Lorient, Naval Observatory	30.07	763.8	30.17	766.3	49.3	9.6	66	W	.....	.....	2	.....	2	.....	W	0.205	5.2	¼ covered	T. Carré, Director.
Mâcon, Normal School	29.45	748.1	30.17	766.2	43.3	6.3	97	Calm	.....	.....	0	.....	10	.....	.....	0.071	1.8	Covered	M. Marchal, Director.
Metz	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. A. Schuster, Dir.
Mirecourt	29.03	737.4	30.11	764.8	41.9	5.5	97	S	.....	.....	2	.....	10	.....	N	0.24	6.	Covered	Normal School
Nismes, Normal School	29.98	761.4	30.19	766.7	48.6	9.2	73	S	.....	.....	2	.....	2	.....	S	0.020	0.50	Slightly cl'dy	Boyer, Director.
Orleans, Normal School	29.73	755.2	30.12	765.1	42.1	5.6	78	N	.....	.....	2	.....	0	.....	.....	0	0	Clear	Bernard, Director.
Paris, Observatory	29.83	757.7	30.08	764.0	41.5	5.3	86	SW	.....	.....	1	.....	8ck	.....	W	0.115	2.91	Slightly cl'dy	National Observatory.
Privas	29.13	739.9	30.21	767.3	53.6	12	85	NW	.....	.....	2	.....	10	.....	.....	0	0	Covered	Normal School
Rochefort, Naval Obs'y	30.17	766.4	30.21	767.2	48.6	9.2	97	SW	.....	.....	1	.....	10	.....	NE	0	0	Covered	Lt. Decante, Director.
Rouen, Normal School	29.95	760.8	30.04	763.0	46.8	8.2	71	SSW	.....	.....	2	.....	2	.....	W	0.134	3.4	Slightly cl'dy	F. Lucard, Director.
Tarbes, Normal School	29.11	739.5	30.24	768.0	41.5	5.3	81	SSW	.....	.....	2	.....	5	.....	W	0.453	11.5	Cloudy	T. Hugues, Director.
Villefranche	29.48	748.8	30.22	767.5	44.6	7	100	N	.....	.....	1	.....	10	.....	Calm	0	0	Covered	Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.86	758.4	29.89	759.1	77.0	25	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.83	21.	.....	L'Abbé Marchesi.
Marseilles, Observatory	.....	.....	30.20	767.0	50.5	10.3	78	W	.....	.....	1	.....	10	.....	.....	0.154	3.90	Raining	The Staff.
Mont-Louis	24.90	633.9	30.27	768.9	39.6	4.2	58	SW	7.4	3.33	.....	.....	10	.....	WSW	0	0	.....	Mr. Falguière.
Nice	.....	.....	30.12	765.0	54.0	12.2	65	SE	.....	.....	4	.....	10	.....	.....	0	0	Covered	Dr. A. Niepce.
Paris, Montsouris Obs'y	29.78	756.5	30.06	763.5	43.2	6.3	83	WSW	.....	.....	3	.....	2	.....	SW	0.075	1.9	.....	Marié Davy, Director.
Perpignan	.....	.....	30.20	767.0	53.2	11.8	62	SE	1.0	0.83	.....	.....	10	.....	SW	0	0	.....	Dr. Fines.
Pic du Midi, (Summit,) H. P.	21.25	539.8	.....	.....	28.4	— 2.0	.....	SW	.....	.....	2	.....	10	.....	.....	.....	.....	Snowy	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.51	572.5	.....	.....	32.4	0.2	.....	SW	.....	.....	4	.....	10	.....	.....	0.331	8.4	Snowy	Gen'l de Nansouty.
Saint Maur, (near Paris)	29.92	759.9	30.08	764.1	41.2	5.1	92	SSW	.....	.....	1	.....	9	.....	W	0	0	.....	E. Renou.
Toulouse, Observatory	29.48	748.7	30.21	767.2	47.3	8.5	100	SSW	.....	.....	1	.....	10	.....	.....	0.228	5.80	Foggy	The Staff.
Tours	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.236	6.0	.....	C. Marquet.
Versailles, (near Paris)	.....	.....	30.07	763.7	43.5	6.4	91	W	.....	.....	1	.....	3	.....	.....	0.063	1.59	Fair	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.19	766.7	30.21	767.3	44.6	7.0	74	NNE	4.9	2.2	.....	.....	10k	.....	.....	0.016	0.4	Covered	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the Collard series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published. At Mirecourt and Rochefort the cloud directions are apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg																			Prof. Dr. Hoh.
Berlin	29.89	759.2	30.06	763.5	41.7	5.4	79	S			1		3			0.095	2.42		Prof. Arndt.
Breslau	29.56	750.8	30.09	764.3	37.2	2.9	55	SW			2		10			0.067	1.69		Royal University Obs'y.
Carlsruhe	29.65	753.0	30.09	764.2	43.2	6.2	90	SW			2		6			0.067	1.7	Raining	Albert Senz.
Cassel	29.48	748.7	30.09	764.2	38.7	3.7	87	SW			4		8	SW		0.041	1.04	Snowing	Dr. H. Möhl.
Crefeld	29.78	756.4	29.94	760.5	43.3	6.3	78	S			4		10n			0.24	6.		Director Lose.
Emden	29.89	759.1	29.92	760.0	35.4	1.9	96	S			2		10			0.165	4.2		Prof. Prestel.
Frankfort on the Main	29.71	754.7	30.09	764.3	41.4	5.2		SW			1		10			0.213	5.4		Physical Society.
Friedrichshafen	28.67	728.2	30.15	765.7	43.2	6.2	85	NW			3		10	NNW				Drizzling	M. Wilhelm.
Hamburg	29.83	757.7	29.90	759.5	38.3	3.5	92	SW			2		4c	SW		0.118	3.0	Fair	Captain F. Hegemann.
Kiel	29.84	758.0	29.86	758.4	37.8	3.2	85	SW			3		1			0.204	5.19		Prof. G. Karsten.
Königsberg, (Prussia)	29.88	758.9	29.96	761.0	33.4	0.8	92	S								0	0	Covered	Prof. E. Luther.
Köslin			29.94	760.4	36.1	2.3		S			2		8			Blank	Blank		H. Müller.
Leipsic, Observatory	29.67	753.5	30.10	764.6	38.8	3.8	83	SW			3		6			0.106	2.7		Prof. Bruhns.
Memel, Naval School	29.92	760.0	29.97	761.2	32.5	0.3	89	S			5		10ks					Cloudy	Reinbrech von Skalweit.
Neufahrwasser	29.94	760.5	29.96	760.9	35.2	1.8	95	S			2		10			0.012	0 3		A. Lothes.
Posen	29.80	756.9	30.10	764.5	37.8	3.2	91	WNW			2					0.055	1.39	Covered	Dr. Magener.
Strassburg Obs., (in Alsace	29.56	750.8	30.12	765 1	43.7	6.5	90	S			2		9	SW		0.138	3.50		Dr. Schur.
Stuttgart	29.12	739.6	30.08	764.1	42.4	5.8	88	W			0		9	W		0.016	0.4		Prof. Schoder.
Treves, (Trier)	29.43	747.4	29.95	760.7	41.5	5.3	94	SW			4		9			0.122	3.09	Foggy	Prof. Flesch.
Weissenburg, (Bavaria)	28.56	725.3	30.11	764.7	40.1	4.5	84	Calm	0	0			10		WSW	0.157	4 0	Covered	Dr. Von Bebber.
Wustrow, Naval School	29.93	760.2	29.98	761.5	38.8	3.8	85	SW			5		10			0.059	1.50	Covered	E. F. Schütz.
German Naval Series.																			

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet: Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4. Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines, Königsberg, Posen and Wustrow in cubic zolls. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.73	755.1	30.12	765.0	60.8	16.0		W			1.5							½ Clear	Dr. J. F. J. Schmidt.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and wind-force; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	30.02	762.6	30.08	763.9	69.5	20.8	44	NE	31.0?	13.8?			0			0	0	Misty	
Deesa	29.58	751.3	30.07	763.7	73.1	22.8	27	NE					0			0	0	Blue sky	
Bombay	29.87	758.7	29.91	759.6	78.9	26.1	84	NNW	16.0	7.2			3	ESE	SE	0	0	D. clouds	
Poona	27.94	709.7	29.97	761.2	73.3	22.9	78	E					10	SE		0	0	Squally	
Lahore	29.39	746.5	30.18	766.5	56.2	13.4	78	Calm	1.3	0.6			2			0	0	Blue sky	
Belgaum	27.39	695.4	29.95	760.6	73.2	22.9	85	Calm					8	W		0.41	10.4	D. clouds	
Bangalore																			
Roorkee	29.18	741.1	30.13	765.2	57.2	14.0	84	NW	2.9	1.3						0	0	Foggy	
Agra	29.65	753.0	30.25	768.3	57.8	14.3	64	W								0	0		
Trichinopoly																			
Nagpur	28.98	736.2	30.06	763.4	68.6	20.3	71	Calm	3.6	1.6			9		NE	0	0	D. clouds	
Madras																			
Lucknow	29.73	755.2	30.13	765.3	56.4	13.6	84	NW	1.3	0.6			0			0	0	Blue sky	
Allahabad	29.78	756.5	30.11	764.9	57.5	14.2	71	Calm	1.4	0.6			0			0	0	Blue sky	
Patna	29.91	759.7	30.10	764.6	59.6	15.3	68	W	1.1	0.5			5	W	W	0	0	D. clouds	
Hazaribagh	28.01	711.5	30.12	765.1	57.8	14.3	49	NW	6.1	2.7			7		S	0	0		
Cuttack	29.98	761.4	30.06	763.5	75.0	23.9	57	NE	0.7	0.3			5			0	0	D. clouds	
Calcutta (Alipore)	30.05	763.3	30.07	763.8	66.8	19.3	43	NW	2.0	0.9			7		NW	0	0	D. clouds	
Goalpara	29.62	752.2	30.02	762.4	69.0	20.6	61	Calm	0.3	0.1			0			0	0	Blue sky	
Chittagong	29.94	760.6	30.04	763.0	69.8	21.0	95	Calm	4.4	2.0			0			0	0	Blue sky	
Sibsagar	29.72	754.9	30.07	763.8	63.9	17.7	86	NE	0.9	0.4			5			0	0	D. clouds	
Rangoon																			
Jubbulpore	28.71	729.1	30.13	765.2	63.0	17.2	66	NW	3.2	1.4			0			0	0	Blue sky	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	22.15	562.6	30.11	764.9	28.6	— 3.0	76	W	.....	.....	2	.....	9	NW	.....	0	0	.....	Ab. Dom. Morgini.
Stelvio	22.12	561.8	30.10	764.4	24.6	— 4.1	.....	WNW	.....	.....	1	.....	10	.....	.....	0	0	.....	Signora Ernesta Manfredi.
Udine	29.76	755.9	30.19	766.8	43.0	6.1	56	Calm	0	0	.....	.....	9	.....	.....	0	0	.....	Prof. Giovanni Clodig.
Padua	30.09	764.2	30.20	767.1	40.5	4.7	71	N	1.3	0.6	.....	.....	9	W	.....	0	0	.....	Prof. Dott. Lorenzoni.
Vicenza	30.00	762.0	30.20	767.1	41.7	5.4	72	SW	0	0	.....	.....	5	W	.....	0	0	.....	Conte Alm. Da Schio.
Verona	29.97	761.1	30.20	767.0	42.8	6.0	69	E	0	0	.....	.....	0	.....	.....	0	0	.....	Dott. B. Bertoncelli.
Bergamo	28.84	732.6	30.23	767.8	39.2	4.0	70	S	.....	.....	2	.....	9	.....	.....	0	0	.....	Prof. Trionfini Carlo.
Domodossola	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Giuseppe Calza.
Milan	29.69	754.0	30.23	767.8	39.6	4.2	.....	ENE	.....	.....	1	.....	10	NNW	.....	0	0	.....	Ab. Gio. Capelli.
Pavia	29.86	758.5	30.23	767.5	39.2	4.0	85	S	.....	.....	2	.....	10	.....	.....	0	0	.....	Prof. Gio. Cantoni.
Moncalieri	29.28	743.6	30.23	767.8	37.0	3.1	85	N	3.8	1.7	.....	.....	9	.....	.....	0	0	.....	Prof. P. F. Denza.
Mondovi	28.22	716.7	30.22	767.5	37.4	3.0	61	SE	.....	.....	2	.....	9	.....	.....	0	0	.....	Prof. D. C. Bruno.
Porto Maurizio	29.93	760.2	30.16	766.0	52.9	11.6	47	E	.....	.....	4	.....	10	.....	.....	0	0	.....	Prof. L. Vassallo.
Genoa	29.97	761.2	30.15	765.7	49.6	9.8	58	NE	7.4	3.3	.....	.....	10	SE	.....	0.031	0.8	.....	Prof. G. M. Garibaldi.
Piacenza	29.97	761.1	30.23	767.9	38.8	3.6	87	SW	0.7	0.3	.....	.....	10	.....	.....	0	0	.....	Dott. G. Manzi.
Parma	29.90	759.5	30.23	767.9	40.5	4.7	84	NNE	.....	.....	2	.....	10	.....	.....	0	0	.....	Prof. P. Pigorini.
Florence	29.95	760.6	30.21	767.4	43.7	6.5	98	W	.....	.....	2	.....	10	.....	.....	0.165	4.2	.....	Cav. F. Meucci.
Leghorn	30.07	763.7	30.15	765.0	48.2	9.0	93	NE	5.6	2.5	.....	.....	10	NE	.....	0.854	21.7	.....	Prof. P. Monte.
Siena	28.94	735.0	30.19	766.8	45.5	7.5	99	E	1.8	0.8	.....	.....	10	.....	.....	0.039	1.0	.....	Prof. L. Toscani.
Urbino	28.61	726 8	30.24	768.1	43.7	6.5	87	ESE	.....	.....	2	.....	10	.....	.....	0	0	.....	Prof. P. Serpieri.
Pesaro	30.15	765.8	30.20	767.1	44.1	6.7	90	SW	0	0	.....	.....	10	.....	.....	0	0	.....	Prof. Luigi Guidi.
Ancona	30.11	764.7	30.22	767.5	46.4	8.0	92	W	.....	.....	4	.....	10	.....	.....	0.012	0.3	.....	Prof. F. DeBosis.
Grosseto	30.08	764.0	30.19	766.9	54.9	12.7	80	S	.....	.....	2	.....	8	SE	.....	0	0	.....	Avv. P. Ponticelli.
Rome	30.04	763.0	30.22	767.6	55.4	13.0	78	N	0	0	.....	.....	10	.....	.....	0.087	2.2	.....	Prof. P. A Secchi.
Naples, O. U.	30.04	763.1	30.25	768.3	59.0	15.0	58	N	.....	.....	0	.....	9	NW	.....	0	0	.....	Prof. L. Palmieri.
Lecce	30.00	762.1	30.20	768.7	56.1	13.4	69	NW	4.9	2.2	.....	.....	4	N	.....	0.004	0.1	.....	Prof. C. De Giorgi.
Cosenza	29.36	745.7	30.27	768.8	56.3	13.5	70	NW	0.7	0.3	.....	.....	8	.....	.....	0.079	2.0	.....	Prof. F. D. Conti.
Cagliari	29.99	761.7	30.10	766.7	57.7	14.3	70	Calm	.....	.....	0	.....	0	.....	.....	0	0	.....	Prof. A. Pacinotti.
Riposto, (Sicily)	30.21	767.3	30.26	769.5	63.9	17.7	59	N	.....	.....	2	.....	5	S	.....	0	0	.....	Prof. F. Cafiero.
Palermo	29.95	760.7	30.21	767.3	58.3	14.6	72	E	1.3	0.6	.....	.....	2	.....	.....	0	0	.....	Prof. G. Cacciatore.
Caltanissetta	28.22	716.7	30.10	766.9	55.0	12.8	61	WNW	.....	.....	1	.....	0	.....	.....	0	0	.....	Prof. A. Pagani.
Syracuse	30.17	766.2	30.24	768.1	57.6	14.2	76	SW	.....	.....	1	.....	3	SW	.....	0	0	.....	Prof. V. Giuliano.
SUB-SERIES.																			
Naples, S. R.	29.68	753.9	30.24	768.0	55.9	13.3	69	SW	0	0	.....	.....	9	.....	.....	0.047	1.2	.....	Prof. F. Brioschi.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,543.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Siena, 348.5 m., or 1,143.3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Tokei (Yeddo)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	The Observatory.
Tokei (Yeddo) University	29.45	748.0	*29.45	750.6	47	8.3	92	N	1	0.4	.....	.....	10s	.....	.....	1.9	48.	Clearing	Prof. P. V. Veeder.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

* Probably 29.55 inches.

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the coöperation of Señor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Aguascallentes	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	I. N. Marin, M. D.
Córdoba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	C. Peña, M. D.
Cuernavaca	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	L. Castillo, A. E.
Guadalajara	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. L. Perez.
Guanajuato	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. V. Fernandez.
Leon	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. M. Leal.
Mexico	28.24	590.3	30.40	772.1	51.3	10.7	82	Calm	0	0	.....	.....	10k	.....	.....	0	0	Covered	Central Observatory.
Orizaba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	N. N.
Orizaba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	I. Orozco, M. D.
Pabellon, (Aguascalts)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. V. de Leon, M. E.
Puebla	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. B. Gonzalez.
Toluca	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. C. Velazquez.
Tlacotalpam	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. F. R. Bayly.
San Luis Potosi	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	G. Barroeta, M. D.
Vera-Cruz	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. J. Rossell.
Zacatecas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. A. Bonilla, M. E.
Puebla, (Catholic Institute)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	P. Spina. [M. M. D. D.
Morelia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Tena, F. L. Páramo

NOTE.—The elevation of Aguascallentes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,29.0 m., or 7,512.9 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabell m, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m,, or 8,611.8 ft.; San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,490 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	29.92	760.0	29.92	760.0	42.8	6.0	.....	WSW	.....	.....	4	.....	.....	.....	.....	0.110	2.8	.....	
Groningen	29.80	757.0	29.86	758.4	35.6	2.0	.....	S	.....	.....	2	.....	.....	.....	.....	0.098	2.5	.....	
Helder	29.81	757.2	29.81	757.2	39.2	4.0	.....	SW	.....	.....	1	.....	.....	.....	.....	0.287	7.3	.....	
Hellevoetsluis	.....	.....	29.88	759.0	41.9	5.5	86	W	.....	.....	5	.....	.....	.....	.....	.....	.....	.....	
Utrecht	29.84	758 0	29.89	759.2	39.6	4.2	88	SSW	.....	.....	4	.....	10	.....	.....	0.087	2.2	Dull	H. v d Brink.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	29.41	747.0	29.47	748.4	37.8	3.2	97	S	11.0	4.9			5			0.315	8.0	Light rain...	
Brönö	29.29	743.9	29.33	744.9	39.2	4.0	84	Calm	0	0			4			0	0		
Christiania	29.34	745.3	29.49	749.1	36.5	2.5	91	SW	7	3			3			0.126	3.2		
Tromsö	29.22	742.1	29.26	743.2	37.0	2.8	55	SSW	7	3			5			0	0		

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	30.12	765.0	30.31	769.8	63.9	17.7	92	NW	2.5	1.1			10			0.079	2.0		Dr. J. A. Sampaio
Campo Major	29.23	742.4	30.27	768.9	51.8	11.0	77	N	1.8	0.8			10	E		0	0		Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.28	769.2	30.55	776.0	65.7	18.7	57	SW	4.9	2.2			9			0	0		Capt. D. A. de Cunha.
Lisbon, Observatory	29.90	759.4	30.26	768.7	50.2	10.1	92	SW	2.5	1.1			10	WSW		0	0		The Staff.
Ponta Delgada, (Azores)	30.26	768.7	30.34	770.5	66.2	19.0	92	WSW	8.1	3.6			10			0.008	0.2		

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

Naval Series. Vessels.	Sea or swell. Height scale 0-9	Sea or swell. Direction from—		
S. S. Bartholomew Dias				R, A. T. Pinha, Com'd't.
S. S. India				A. D. Pedroso, Com'd't.
S. S. Mindello				J. F. R. R. Bastos, Com'd't.
S. S. Sado				A. N. P. Sampaio, Com'd't.
S. S. Sá da Bandeira				F. Texeira da Silva, Com'd't.
S. S. Tejo				F. J. Ferreina, dos Anjos, Com'd't

NOTE.—The originals, except for S. S. Tejo, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.63	752.6	30.07	763.8	32.4	0.2	94	S	4	2			10ks						Astronomical Obs.
Wilna	29.71	754.5	30.15	765.9	27.3	— 2.6	100	S	4	2			10					Heavy clouds	Astronomical Obs.
Dorpat	29.84	757.9	30.10	764.4	27.1	— 2.7	90	S	11	5			10n						Prof. Dr. Weihrauch
St. Petersburg	30.08	764.1	30.10	764.5	28.8	— 1.8	92	S	13	6			10n						Central Physical Obs.
Kuopio	29.57	751.1	29.91	759.6	29.3	— 1.5	100	SW	27	12			10						Ch. Forsten.
Kieff	29.52	749.8	30.19	766.8	30.9	— 0.6	94	ESE	4	2			10n					Snowing	Physical Cabinet.
Nikolaiev	30.15	765.7	30.22	767.5	35.1	1.7	90	NNE	4	2			10n						Kurdakof.
Kertch	30.12	765.1	30.14	765.6	39.2	4.0	97	NNE	4	2			10						Lagorio.
Moscow	29 87	758.7	30 48	774.1	12.6	—10.8	93	S	4	2			6s						Meteorological Obs.
Lugan	30.04	763.1	30.26	768.5	33.8	1.0	66	E	9	4			5c						Meteorological Obs.
Archangel	30.08	764.0	30.10	764.5	25.2	— 3.8	95	S	13	6			10						Ogorodnikof.
Tiflis	28.78	731.0	30.24	768.2	42.3	5.7	60	Calm	0	0			10						Physical Observatory.
Astrakhan	30.48	774.2	30.40	772.1	29.6	— 1.4	82	ENE	11	5			0						Sebastianof.
Kasan	30.28	769.2	30.58	776.8	15.6	— 9.1	97	SSE	7	3			10						Physical Cabinet.
Orenburg																			Tschernischet.
Ekaterinburg	29.74	755.4	30.87	784.1	—21.6	—29.8	79	Calm	0	0			0						Meteorological Obs.
Nukuss	30.05	763.2	30.29	769.4	31.3	— 0.4	89	ENE	11	5			10n						
Kasaly																			Bobrof.
Tashkend	28.63	727.3	30.43	772.9	35.6	2.0	85	NW	2	1			10n						Michelson.
Barnaul	29.73	755.1	30.39	771.8	—50.3	—45.7	75	Calm	0	0			0						Meteorological Obs.
Yeniseisk	30.20	767.1	30.60	777.2	—56.2	—49.0	81	Calm	0	0			0						Marks.
Irkutsk																			Usolzef.
Oorga																			Mossin.
Krotkowo*	30.01	762.9	30.54	775.7	24.1	— 4.4	89	E	4	2			10						Cand. Fatjanow.
Peking, (China)	30.02	762.6	30.17	766.2	26.1	— 3.3	63	Calm	0	0			3ck					Lunar corona	Physical Observatory
Nertchinsk																			Meteorological Obs.
Vladivostock	30.13	765.3	30.17	766.3	8.2	—13.2	80	NW	18	8			0						
Nikolaievsk, on the Amoor					— 4.0	—20.0	68	W	11	5			10s						

NOTE.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall; for Krotkowo, the barometer reduced to freezing but not to sea level. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 602.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft. * N. 53° 47′, E. 48° 34′.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y																			Antonio Rave, Director.
Bilbao, Met. Obs'y																			Prof. Manuel de Naveran
Burgos, Met. Obs'y																			Domingo Martin y Perez.
Madrid, Royal Observatory	27.99	710.9	30.29	769.4	44.8	7.1	91	E	0	0		0	10			0	0	Covered	The Staff.
Murcia, Met. Obs'y																			Olayo Diaz, Director.
Santiago, Met. Obs'y																			R. Gil Villanueva, Dir.
SUB-SERIES.																			
Havana, Cuba, W. I.	30.18	766.5	30.25	768.2	67.6	19.8	86	Calm	0	0		0	1k		E	0.020	0.5	Clear	Benito Vines, S. J.
San Fernando, Naval Obs'y	30.16	766.0	30.26	768.5	63.9	17.7	66	ESE	9.8	4.4		0	1		SE	0	0		Capt. C. Pujazon, R. N., Dir.
San Juan de PortoRico, W. I.			29.99	761.8	79.2	26.2	83	NE	14.1	6.30		5kn	4kn	NE	NE	0.148	3.75	Cloudy	Leonardo de Tejeda, Chief of Engineers.

NOTE.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

SWEDISH SERIES.

Furnished by the cöoperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Low'r 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.68	753.8	29.72	754.8	33.8	1.0	.....	S	.....	.....	6	.....	10	.....	.....	0	0	.....	
Umea	29.56	750.7	29.61	752.0	35.6	2.0	96	S	.....	.....	2	.....	10	.....	.....	0.106	2.7	.....	
Hernosand	29.46	748.3	29.51	749.6	36.0	2.2	89	SSW	.....	.....	2	.....	10	.....	.....	0.031	0.8	.....	
Stockholm	29.49	749.0	29.67	753.5	37.9	3.3	88	SSW	.....	.....	4	.....	10	.....	.....	0.012	0.3	.....	
Wisby	29.72	755.0	29.78	756.5	39.2	4.0	100	WSW	.....	.....	4	.....	10	.....	.....	0	0	.....	
Sub-Series.																			
Upsala	29.55	750.6	29.63	752.5	37.0	2.8	93	S	15.4	6.9	.....	.....	10	.....	SSW	0.063	1.61	.....	Dr. Hildebrandsson.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the cooperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.70	728.9	30.15	765.7	46.6	8.1	65	W	.....	.....	1	.....	10	.....	.....	0.008	0.2	Covered	The Observatory.
Zurich	28.46	722.9	30.14	765.6	41.5	5.3	93	SE	.....	.....	1	.....	9	.....	.....	0.039	1.0	Raining	The Observatory.

Note.—For Geneva the corresponding departures from the normal values are: Barometer, +1.5 mm; Thermometer, +5.5 cent.; Relative Humidity, —15 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	30.18	766.5	44.2	6.8	67	N	4	2.0	.....	.....	10	.....	W	0.146	3.7	.....	The Observatory.
Fao, (Persian Gulf)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salonica	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	B. Stefanidès.
Valona	.....	.....	30.19	766.8	55.6	13.1	.....	NW	.....	.....	1	.....	2	.....	.....	0.71	18.	Raining	A. Bertrand.
Varna	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Imperial Observatory.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.85	758.2	29.97	761.1	60.4	15.8	83	S	.....	.....	1	.....	8n	.....	SW	0.49	12.4	D. clouds	Prof. C. V. A. Van Dyck

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second); the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	29.82	757.4	29.90	759.4	14.6	— 9.7	91	Calm	0	0	.....	3	.....	.....	.....	.....	.....	.....	Hon. J. Ferguson.
Brockville, Ontario	29.28	743.7	29.59	751.6	39	3.9	.....	Calm	0	0	.....	.....	10s	.....	SW	0.03	0.8	Cloudy	W. R. Bigg.
*Chatham, N. B	29.85	758.2	29.92	760.0	16	— 8.9	95	Calm	0	0	.....	8ck	2ks	W	W	0	0	Fair	G. A. Blair.
Charlottetown, P. E. Island	29.91	759.7	29.95	760.7	24	— 4.4	94	W	7	3.1	.....	.....	10s	.....	Calm	0.200	5.08	Cloudy	H. J. Cundall, C. E.
Cornwall, Ontario	29.36	745.7	29.56	750.8	33.2	0.7	85	SE	.....	.....	1	.....	10s	.....	.....	0.227	5.77	Cloudy	James Smith, M. A.
Dalhousie, N. B	29.86	758.4	29.89	759.2	23.0	— 5.0	99	W	.....	.....	1	.....	.....	.....	.....	0	0	Threatening	H. A. Johnson.
Esquimault, B. C	29.74	755.4	29.78	756.4	46.3	7.9	100	NE	.....	.....	.....	4ck	0	.....	.....	0.37	9.4	Cloudy	W. H. Bevis.
*Father Point, Quebec	29.85	758.2	29.87	758.7	13	—10.6	87	W	8	3.6	.....	2cs	2s	SW	SW	0.01	0.3	Fair	J. McWilliams.
Fredericton, N. B	29.94	760.5	30.01	762.2	14.3	— 9.8	96	Calm	0	0	.....	.....	10s	.....	.....	Inap.	Inap.	Cloudy	Prof. Harrison.
*Fort Garry, Manitoba	29.47	748.5	30.37	771.4	18	— 7.8	92	W	3	1.3	.....	0	0	.....	.....	0	0	Clear	James Stewart.
Goderich, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	H. J. Strang, M. A.
Granton, Ontario	28.73	729.7	29.85	758.2	38.1	3.4	80	NW	.....	.....	3	.....	10n	.....	.....	0	0	Cloudy	James Grant.
*Halifax, N. S	29.83	757.7	29.97	761.2	26	— 3.3	82	NW	8	3.6	.....	.....	10ks	.....	.....	0.027	0.69	Cloudy	F. Allison, M. A.
Hamilton, Ontario	29.40	746.7	29.78	756.4	43.7	6.5	64	SW	.....	.....	2	0	.....	.....	.....	0	0	.....	Geo. Dickson, M. A
Heart's Content, N. F	29.29	744.0	29.33	745.0	34	1.1	100	SE	.....	.....	1	.....	10	.....	.....	0	0	Overcast	E. Weedon.
*Kingston, Ontario	29.28	743.7	29.61	752.1	43	6.1	85	SW	6	2.7	.....	.....	10s	.....	Calm	0	0	Cloudy	S. Woods, M. A.
Little Glace Bay, N. S	29.70	756.7	29.83	757.7	28.5	— 1.9	.....	N	6	2.7	.....	9k	.....	N	.....	1.05	26.7	Cloudy	C. H. Rigby.
*Montreal, Quebec	29.41	747.0	29.61	752.1	33	0.6	89	SE	16	7.2	.....	.....	10n	.....	.....	0.06	1.5	Light snow	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.07	738.8	29.07	753.6	39	3.9	95	W	22	9.8	.....	5k	5n	NW	NW	0.07	1.8	Light rain	Rev. R. Mosley.
Peterboro, Ontario	29.93	734.8	29.68	753.9	40.7	4.8	90	W	.....	.....	2	.....	10n	.....	.....	0	0	Cloudy	J. F. Jeffers, B. A.
Port Dover, Ontario	29.13	739.9	29.82	757.4	46	7.8	69	W	19	8.5	.....	10k	0	W	.....	0	0	Cloudy	H. Morgan.
Port Hastings, N. S	29.88	758.9	29.93	760.2	28.9	— 1.7	.....	N	5	2.2	.....	.....	.....	.....	.....	0	0	Fine	Peter Grant.
Port Stanley, Ontario	29.22	742.2	29.87	758.7	43	6.1	73	W	18	8.0	.....	.....	10n	.....	NW	0	0	Cloudy	M. Payne.
*Quebec, Quebec	29.48	748.8	29.82	757.4	19	— 7.2	86	N	4	1.8	.....	.....	10n	.....	.....	0	0	Cloudy	Capt. Ashe, R. N
*Rockliffe, Ontario	29.11	739.4	29.58	751.3	32	0.0	98	SE	5	2.2	.....	.....	10s	.....	SE	Inap.	Inap.	Heavy snow	W. H. McIntyre.
St. John, N. B	29.82	757.4	29.99	761.7	23	— 5.0	86	Calm	0	0	.....	.....	10s	.....	.....	0.25	6.3	Cloudy	G. Murdock, C. E.
*Saugeen, Ontario	29.08	738.6	29.79	756.7	39	3.9	100	NW	20	8.9	.....	.....	10k	.....	SW	0.01	0.3	Heavy rain	K. Stewart.
Stayner, Ontario	28.93	734.8	29.72	754.9	39	3.9	82	NW	10	4.5	.....	.....	10n	.....	NW	0.25	6.3	Threatening	R. J. Cole.
Stratford, Ontario	28.53	724.6	29.84	757.9	37.4	3.0	86	NW	15.0	6.7	.....	.....	10n	.....	.....	0	0	Cloudy	C. J. MacGregor, M. A.
*Sydney, C. B	29.33	757.7	29.86	758.4	28	— 2.2	83	NW	9	4.0	.....	.....	10s	.....	NW	1.02	25.9	Cloudy	T. C. Hill.
*Toronto, Ontario	29.34	745.2	29.73	755.1	44	6.7	70	W	17	7.6	.....	.....	10ks	.....	W	0.03	0.8	Cloudy	Magnetic Observatory.
Windsor, N. S	29.90?	759.4?	29.90?	759.4?	26.0	— 3.3	94	W	4	1.8	.....	0	10kn	.....	.....	0	0	Fair	Prof. John E. Oram.
Woodstock, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Montgomery.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	34.6	1.1	100	SE	.....	.....	.....	.....	10n	.....	.....	0.42	10.7	Sleeting	John Delany

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.54	750.3	29.77	756.1	39	3.9	72	SE	16	7.2			10ks		W	Inap.	Inap.	Cloudy	
Alpena, Michigan	29.18	741.2	29.84	757.9	38	3.3	71	NW	23	10.3			10s		NW	0	0	Cloudy.	
Atlantic City, New Jersey	29.93	760.2	29.95	760.7	47	8.3	92	SW	14	6.3		0	0			0	0	Clear.	
Augusta, Georgia	30.15	765.8	30.35	770.9	35	1.7	90	Calm	0	0			Fg;sm'		NW	0	0	Foggy	
Baltimore, Maryland	29.92	760.0	29.98	761.5	41	5.0	82	SE	2	0.9		Haze	Sm'e	Calm	Calm	0	0	Smoky	
Barnegat, New Jersey	29.90	759.4	29.92	760.0	45	7.2	84	SW	19	8.5		0	Haze		Calm	0	0	Clear.	
Bismarck, Dakota	28.52	724.4	30.33	770.4	23	— 5.0	86	NE	1	0.4		0	1s		Calm	0	0	Clear	
Boise City, Idaho	27.38	695.4	30.15	765.8	26	— 3.2	76	NW	2	0.9		0	0			0	0	Clear	
Boston, Massachusetts	29.76	755.9	29.92	760.0	35	1.7	70	SE	10	4.5			10n		SW	Inap.	Inap.	Light rain	
Bracketville, Texas	29.15	740.4	30.21	767.3	60	15.6	76	Calm	0	0			10s		Calm	0.08	2.0	Cloudy.	
Breckenridge, Minnesota	29.36	745.7	30.45	773.4	21	— 6.1	93	W	4	1.8		0	0			0	0	Clear.	
Brownsville, Texas	30.22	767.6	30.29	769.4	62	16.7	100	NW	3	1.3			10n		Calm	1.50	38.1	Light rain	
Buffalo, New York	29.02	737.1	29.72	754.9	44	6.7	92	SW	16	7.2			10s		SW	0	0	Cloudy.	
Burkes, Arizona					47	8.3	48	E				0	0			0	0	Clear	
Burlington, Vermont	29.48	748.8	29.75	755.6	36	2.2	70	S	14	6.3			10s		SW	0.02	0.5	Cloudy	
Cairo, Illinois	29.93	760.2	30.34	770.6	52	11.1	73	SW	4	1.8		10cs	0	SW		0	0	Cloudy	
Camp Grant, Arizona																			
Camp Verde, Arizona	26.99	685.5	30.48	774.2	33	0.6	79	NW				0	0			0	0	Clear	
Campo, California	27.46	697.5	30.03	762.7	45	7.2	54	SW	1	0.4		0	0			0	0	Clear.	
Cape Hatteras, N. Carolina	30.21	767.3	30.22	767.6	54	12.2	86	S	10	4.5		0	0			0	0	Clear	
Cape Henry, Virginia	30.08	764.0	30.10	764.5	52	11.1	54	SW	24	10.7		0	0			0	0	Clear	
Cape Lookout, N. Carolina	30.24	768.1	30.25	768.3	57	13.9	80	SW	11	4.9		0	0			0	0	Clear	
Cape May, New Jersey	29.94	760.5	29.97	761.2	47	8.3	77	S	22	9.8		0	0			0	0	Clear	
Charleston, South Carolina	30.23	768.6	30.33	770.4	49	9.4	71	SW	6	2.7		0	Sm'e			0	0	Clear	
Cheyenne, Wyoming	24.32	617.7	30.26	768.6	20	— 6.7	41	W	3	1.3		0	0			0	0	Clear	
Chicago, Illinois	29.43	747.5	30.15	765.8	38	3.3	72	W	11	4.9		0	Haze		Calm	0	0	Clear.	
Cincinnati, Ohio	29.46	748.3	30.11	764.8	49	9.4	57	W	4	1.8		4c	0	W		0	0	Fair	
Cleveland, Ohio	29.22	742.2	29.95	760.7	42	5.6	75	W	16	7.2		Haze	0			0	0	Clear	
Concho, Texas	28.41	721.6	30.14	765.5	53	11.7	79	Calm	0	0		8cs	0	E		0	0	Cloudy	
Corsicana, Texas	29.90	759.4	30.38	771.6	53	11.7	93	SE	2	0.9			10s		Calm	0.05	1.3	Cloudy	
Davenport, Iowa	29.63	752.5	30.30	769.6	37	2.8	80	NW	5	2.2		0	0			0	0	Clear	
Denison, Texas	29.55	750.6	30.36	771.1	54	12.2	87	S	4	1.8			10ks		W	0	0	Cloudy	
Denver, Colorado	25.08	637.0	30.30	769.6	29	— 1.7	59	S	4	1.8		0	0			0	0	Clear	
Detroit, Michigan	29.25	742.9	29.93	760.2	30	3.6	82	W	8	3.6		2k	5s	W	W	0	0	Fair	
Dodge City, Kansas	27.79	705.8	30.24	768.1	30	— 1.1	68	N	6	2.7		0	0			0	0	Clear	
Dubuque, Iowa	29.53	750.0	30.26	768.6	38	3.3	72	NW	10	4.5		0	0			0	0	Clear	
Duluth, Minnesota	29.53	750.0	30.24	768.1	32	0.0	74	NW	16	7.2		0	0			0	0	Clear	
Eagle Pass, Texas	29.52	749.8	30.28	769.1	59	15.0	100	NW	1	0.4			10s		Calm	0.10	2.5	Cloudy	
Eastport, Maine	29.90	759.4	29.97	761.2	27	— 2.8	77	Calm	0	0		8c;cs	2s	NW	NW	0	0	Cloudy	
Erie, Pennsylvania	29.12	739.6	29.84	757.9	45	7.2	76	W	18	8.0			10s		NW	0	0	Cloudy	
Escanaba, Michigan	29.38	746.2	30.05	763.3	37	2.8	62	NW	20	8.9			10s		NW	0	0	Cloudy	
Florence, Arizona	28.45	722.6	30.05	763.3	64	17.8	43	E				0	0			0	0	Clear	
FortBayard, New Mexico	24.30	617.2	30.30	769.6	44	6.7	67	NE	4	1.8		0	0			0	0	Clear.	
Fort Craig, New Mexico	25.80	655.3			44	6.7	84	NW	12	5.4			10s		Calm	0	0	Cloudy	
Fort Gibson, Indian Ter	29.76	755.9	30.32	770.1	48	8.9	85	Calm	0	0		0	5s		W	0	0	Fair	
Fort Griffin, Texas	29.07	738.4	30.37	771.4	54	12.2	87	SE	2	0.9			10s		Calm	0	0	Cloudy	
Fort St. Michael, Alaska																			
Fort Sill, Indian Territory	29.11	739.4	30.26	768.6	46	7.8	69	N	12	5.4		8cs	0	N		0	0	Fair	
Galveston, Texas	30.29	769.4	30.33	770.4	56	13.3	97	E	5	2.2			10s;n		E	Inap.	Inap.	Light rain	
Grand Haven, Michigan	29.40	746.7	30.06	763.5	41	5.6	74	N	24	10.7		8k	0	N		0	0	Fair	
Indianapolis, Indiana	29.36	745.7	30.16	766.1	45	7.2	60	W	4	1.8		5cs	Sm'e	W		0	0	Fair	
Indianola, Texas	30.30	769.6	30.32	770.1	58	14.4	100	NE	12	5.4			10s		Calm	0.48	12.2	Cloudy	
Jacksboro, Texas	29.20	741.7	30.35	770.9	55	12.8	81	SW	4	1.8			10s		SW	0	0	Cloudy	
Jacksonville, Florida	30.36	771.1	30.38	771.6	44	6.7	84	NW	2	0.9		0	Fog		Calm	0	0	Foggy	
Keokuk, Iowa	29.64	752.8	30.29	769.4	36	2.2	80	NW	4	1.8		0	1s		Calm	0	0	Clear	
Key West, Florida	30.25	768.3	30.28	769.1	66.0	18.9	90	NE	14	6.3		1c	Fog	W	Calm	0	0	Clear	
Kittyhawk, North Carolina	30.16	766.1	30.18	766.6	48	8.9	85	SW	10	4.5		0	0			0	0	Clear	
Knoxville, Tennessee	29.32	744.7	30.37	771.4	41	5.0	57	SW	8	3.6		5ck	0	W		0	0	Fair	
La Crosse, Wisconsin	29.50	749.3	30.26	768.6	37	2.8	62	NW	4	1.8		0	0			0	0	Clear	
La Mesilla, New Mexico	26.34	669.0	30.49	774.4	46	7.8	77	N	2	0.9		0	5s		Calm	0	0	Fair	
Laredo, Texas					60	15.6	100	NW	3	1.3			Fog		Calm	0.46	11.7	Light rain	
Leavenworth, Kansas	29.50	749.3	30.40	772.1	36	2.2	80	Calm	0	0		0	Fog			0	0	Clear	
Los Angeles, California	29.68	753.9	30.01	762.2	58	14.4	48	NE	14	6.3		0	2s		NE	0	0	Clear	
Louisville, Kentucky	29.62	752.3	30.19	766.8	51	10.6	65	SW	8	3.6		2c	2s	SW	SW	0	0	Fair	
Lynchburg, Virginia	29.38	746.2	30.07	763.8	48	8.9	43	SW	4	1.8		0	0			0	0	Clear	
Maricopa Wells, Arizona					43	6.1	16	N				0	0			0	0	Clear	
Marquette, Michigan	29.30	744.2	30.02	762.5	36	2.2	70	NW	20	8.9			10s		Calm	0	0	Cloudy	
Mason, Texas	28.71	729.2	30.51	774.9	54	12.2	87	Calm	0	0			10s			0.10	2.5	Cloudy	
Memphis, Tennessee	30.04	763.0	30.37	771.4	52	11.1	73	SW	3	1.3			8s;sm'		sw;calm	0	0	Cloudy	
Milwaukee, Wisconsin	29.45	748.0	30.16	766.1	36	2.2	80	NW	12	5.4		0	Haze			0	0	Clear	
Mobile, Alabama	30.35	770.9	30.40	772.1	50.5	10.3	93	S	2	0.9		5ck	5s	W	SW	0	0	Cloudy	
Montgomery, Alabama	30.18	766.6	30.43	772.9	43	6.1	87	Calm	0	0		10cs	Fg;sm'	SW	Calm	0	0	Cloudy	
Morgantown, West Virginia	28.94	735.1	30.00	762.0	50	10.0	51	SW	12	5.4		2c	0	SW		0	0	Fair	
Mt. Washington, N. H.	23.37	593.6	29.73	755.1	18	— 7.8	100	SW	57	25.5			Fog		SW	0	0	Foggy	
Nashville, Tennessee	29.78	756.4	30.34	770.6	42	5.6	83	SW	1	0.4		8cs	Sm'e	SW	Calm	0	0	Cloudy	
New Haven, Connecticut	29.76	755.9	29.87	758.7	48	8.9	77	SW	10	4.5		5ck	5s		W	Inap.	Inap.	Cloudy	
New London, Connecticut	29.84	757.9	29.90	759.4	47	8.3	77	S	15	6.7		5c;ck	2s	Calm; W	SW	Inap.	Inap.	Fair	
New Orleans, Louisiana	30.28	769.1	30.35	770.9	56	13.3	87	E	5	2.2		5ck	Fog	S	Calm	0	0	Fair	
Newport, Rhode Island	29.83	757.7	29.88	758.9	46	7.8	77	S	16	7.2			10ks		SW	0	0	Threatening	
New York, New York	29.72	754.9	29.90	759.4	42	5.6	83	W	10	4.5		2cs	2s	W	Calm	0	0	Fair	
Norfolk, Virginia	30.05	763.3	30.11	764.8	43	6.1	75	S	13	5.8		0	Haze		Calm	0	0	Clear	
North Platte, Nebraska	27.48	698.0	30.29	769.4	20	— 6.7	77	NW	6	2.7		0	0			0	0	Clear	
Olympia, Washington Ter.	29.58	758.9	29.92	760.0	44	6.7	100	S	4	1.8			Fog		Calm	0.03	0.8	Foggy	
Omaha, Nebraska	29.26	743.2	30.40	772.1	35	1.7	80	NW	3	1.3		0	0			0	0	Clear	
Oswego, New York	29.38	745.7	29.67	753.6	48	8.9	74	W	14	6.3			10s		W	0.01	0.3	Cloudy	
Pembina, Dakota	29.51	749.5	30.40	772.1	20	— 6.7	84	W	6	2.7		0	0			0	0	Clear	
Philadelphia, Pennsylvania	29.89	759.2	29.94	760.5	30	3.9	91	SW	12	5.4		2cs	Haze	Calm	Calm	0	0	Clear	
Phœnix, Arizona					46	7.8	69	Calm				0	0			0	0	Clear	
Pike's Peak, Colorado	17.94	454.8	30.16	766.1	10	—12.2	38	SW	10	4.5		0	0			0	0	Clear	
Pioche, Nevada	24.22	615.2	29.99	761.7	29	— 1.7	45	S	2	0.9		0	0			0	0	Clear	
Pittsburg, Pennsylvania	29.12	739.6	29.92	760.0	50	10.0	51	W	17	7.6		0	0			0	0	Clear	
Port Huron, Michigan	29.22	742.2	29.89	759.2	40	4.4	91	W	11	4.9			10ks		W	0	0	Cloudy	
Portland, Maine	29.85	758.2	29.90	759.4	31	— 0.6	89	W	4	1.8			10n		Calm	0.05	1.3	Light snow	
Portland, Oregon	29.96	761.0	30.06	763.5	40	4.4	100	S	3	1.3			Fog		Calm	0	0	Foggy	
Prescott, Arizona	24.95	633.7	30.31	769.9	29	— 1.7	78	SW				0	0			0	0	Clear	
Punta Rassa, Florida	30.32	770.1	30.33	770.4	57	13.9	87	NE	12	5.4			Fog		Calm	0	0	Foggy	
Red Bluff, California	29.69	754.1	30.06	763.5	41	5.0	91	NW	6	2.7		0	Haze		Calm	0	0	Clear	
Rochester, New York	29.06	738.1	29.66	753.4	49	9.4	85	W	12	5.4			10n		W	0.01	0.3	Light rain	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Roseburg, Oregon	29.48	748.8	30.07	763.8	34.5	1.4	95	Calm	0	0	.....	.....	Fog	.....	Calm	0	0	Foggy	
Sacramento, California	29.95	760.7	30.04	763.0	36	2.2	100	N	5	2.2	.....	0	Fog	.....	Calm	0	0	Foggy	
St. Louis, Missouri	29.73	755.1	30.32	770.1	45	7.2	61	W	8	3.6	.....	0	Sm'e	.....	.....	0	0	Clear.	
St. Marks, Florida	30.39	771.9	30.40	772.1	37	2.8	95	NW	3	1.3	.....	0	0	.....	.....	0	0	Clear.	
St. Paul, Minnesota	29.45	748.0	30.32	770.1	51	— 0.6	89	NW	4	1.8	.....	0	0	.....	.....	0	0	Clear.	
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salt Lake City, Utah	25.89	657.6	30.22	767.6	30	— 1.1	57	W	4	1.8	.....	0	0	.....	.....	0	0	Clear	
San Antonio, Texas	29.17	740.9	29.75	755.6	58	14.4	100	NE	6	2.7	.....	.....	10n	.....	Calm	1.49	37.8	Light rain	
San Diego, California	29.99	761.7	30.06	763.5	60	15.6	44	NE	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Sandusky, Ohio	29.31	744.5	29.99	761.7	43	6.1	75	W	16	7.2	.....	1c	Haze	Calm	.....	0	0	Clear	
Sandy Hook, New Jersey	29.88	758.9	29.90	759.4	46	7.8	76	SW	17	7.6	.....	8ck	0	W	.....	0	0	Cloudy	
San Francisco, California	29.90	759.4	29.97	761.2	52	11.1	73	NW	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Santa Fé, New Mexico	23.55	598.2	30.09	764.3	25.5	— 3.6	75	SE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Savannah, Georgia	30.26	768.6	30.36	771.1	48	8.9	63	W	2	0.9	.....	1c	Sm'e	W	.....	0	0	Clear	
Shreveport, Louisiana	30.20	767.1	30.42	772.7	51	10.6	93	Calm	0	0	.....	.....	10s	.....	N	0	0	Cloudy	
Smithville, North Carolina	30.27	768.8	30.30	769.6	52	11.1	100	SW	6	2.7	.....	0	Fog	.....	Calm	0	0	Clear	
Springfield, Massachusetts	29.64	752.8	29.77	756.1	38	3.3	71	S	1	0.4	.....	.....	10s	.....	S	Inap.	Inap.	Cloudy	
Stockton, Texas	27.25	692.1	30.25	768.3	49	9.4	93	Calm	0	0	.....	0	8n	.....	W	Inap.	Inap.	Light rain	
Thatcher's Island, Mass	29.85	758.2	29.91	759.7	40	4 4	82	S	20	8.9	.....	.....	10n	.....	S	0.05	1.3	L ght rain	
Toledo, Ohio	29.30	744.2	29.99	761.7	43	6.1	75	SW	16	7.2	.....	0	5s	.....	NW	0	0	Fair	
Tucson, Arizona	27.71	703.8	30.26	768.6	45	7.2	37	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Tybee Island, Georgia	30.33	770.4	30.36	771.1	43	6.1	91	W	6	2.7	.....	1c	0	Calm	.....	0	0	Clear	
Umatilla, Oregon	29.79	756.7	.....	.....	32	0.0	89	S	4	1.8	.....	.....	10s	.....	Calm	0	0	Cloudy	
Vicksburg, Mississippi	30.17	766.3	30.43	772.9	54	12.2	80	SE	1	0.4	.....	.....	10s	.....	SE	0	0	Cloudy	
Virginia City, Montana	24.46	621.3	29.94	760.5	26	— 3.3	63	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Visalia, California	29.70	754.4	30.09	764.3	35	1.7	100	Calm	0	0	.....	0	Fog	.....	Calm	0	0	Foggy	
Washington, D. C	29.87	758.7	29.99	761.7	42	5.6	83	SW	8	3.6	.....	0	Sm'e	.....	.....	0	0	Clear	
Wickenburg, Arizona	.....	.....	.....	.....	30	— 1.1	68	S	.....	.....	.....	2c	0	Calm	.....	0	0	Fair	
Wilmington, N. Carolina	30.10	766.8	30.27	768.8	46	7.8	92	SW	7	3.1	.....	0	Fog	.....	SW	0	0	Dense fog	
Winnemucca, Nevada	25.78	654.8	30.14	765.5	20	— 6.7	70	NE	9	4.0	.....	0	0	.....	.....	0	0	Clear	
Wood's Holl, Mass	29.93	760.2	29.99	761.7	46	7.8	76	S	14	6.3	.....	.....	10s	.....	SW	0.02	0.5	Cloudy	
Yankton, Dakota	29.14	740.1	30.53	775.4	28	— 2.2	82	W	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Yuma, Arizona	29.98	761.5	30.15	765.8	52	11.1	43	N	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Sub-Series.																			
York Factory, B. A.	30.00	762.5	30.12	765.0	—14.5	—25.8	72	NW	10	4.5	.....	0	0	.....	.....	0	0	Clear	J. Fortescue, W. Wood.
Havana, Cuba, W. I.	30.15	765.8	30.17	766.3	69	20.6	84	E	2.4	1.1	.....	0	4ks	.....	E	0.04	1.0	Fair	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.16	766.1	30.17	766.3	77	25.0	90	Calm	0	0	.....	2c	2s	Calm	NE	0.02	0.5	.....	James Gall.
Navassa, W. I.	29.96	760.7	30.03	762.7	79	26.1	.....	NE	3	1.3	.....	.....	.....	.....	.....	0	0	Fair	F. M Everett.
St. Thomas, W. I.	.....	.....	.....	.....	78	25.6	78	E	4	1.8	.....	2c	5ks	NE	.....	0	0	.....	G. O. Gellich.
Paramaribo, D. Guiana, S. A.	.....	.....	30.00	762.0	84	28.9	79	E	.....	.....	2	0	4k	.....	.....	0	0	Fair	C. J. Hering.
Batavia, Dutch Guiana, S. A	30.03	762.7	30.04	762.9	84.6	29.2	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.35	9.	Cloudy	Dr. H. Groot.
Medellin, Colombia, S. A.	25.20	640.1	.....	.....	66.0	18.9	80	Calm	.....	.....	0	2cs	0	.....	.....	0	0	Fair	Thomas Herran.
Honolulu, Oahu, H. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Daniel Smith.
Makawao, Maui, H. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo; for Batavia, the barometer reduced to freezing but not to sea-level. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.8 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.6 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,102 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,265 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.8 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft. or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m. Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft. or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.67 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	BAROMETER. As reported.* Inches.	BAROMETER. As reported.* Millimeters.	BAROMETER. Attached Thermometer. Fahrenheit.	BAROMETER. Attached Thermometer. Centigrade.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 1—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Up'er From—	CLOUDS. Direction. Low'r From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	SEA-SWELL. Character.	SEA-SWELL. Direction from—	WEATHER.	OBSERVER.
NavyYard Mare Island, Cal.	29.98	761.5	47	8.3	56	13.3	40	SE	6	2.7	.....	.....	3s	.....	Calm	0	0	.....	.....	.....	
Navy Yard, Pensacola, Fla.	30.48	774.2	.....	.....	50	10.0	93	N	2	0.9	.....	.....	4	.....	.....	0	0	.....	.....	D. clouds....	
NavyYard, Portsmouth, N.H	29.93	760.2	64	17.8	35	1.7	80	S	4	1.8	.....	.....	10	.....	.....	.....	.....	.....	.....	Rain & fog...	
Naval Hospital, Yokohama, Japan	29.55	750.6	54	12.2	47	8.3	92	NE	.....	.....	2	.....	8ks	.....	NE	2.41	61.2	.....	.....	Clearing... ..	
Adams. S. 35° 26', W. 74° 02'	29.94	760.5	65	18.3	64	17.8	68	S	.....	.....	3	.....	9	.....	S&W	0	0	Long	S	D. clouds.....	
Alert. Yokohama, Japan	29.58	751.3	.....	.....	52	11.1	93	N	.....	.....	1	.....	10	.....	N	.....	.....	Smooth	.....	D. clouds....	
Alliance, Smyrna, Turkey	30.21	767.3	65	18.3	52	11.1	73	N	.....	.....	0-1	.....	10	.....	N	.....	.....	.....	.....	Rainy.....	
Ashuelot. Shanghai, China	30.20	767.1	54	12.2	45	7.2	84	NE	.....	.....	2-3	.....	10	.....	Calm	.....	.....	.....	.....	D. clouds.....	
Canonicus, New Orleans, La	30.30	769.6	44	6.7	54	12.2	87	ESE	.....	.....	2	.....	10	.....	.....	.....	.....	.....	.....	Cloudy.....	
Colorado, New York, N. Y.	29.89	759.2	43	6.1	42	5.6	83	SW	5	2.2	.....	.....	4	.....	WSW	0	0	.....	.....	Foggy	
Despatch, Constantinople, Turkey.	30.32	770.1	75	23.9	46	7.8	69	NW	.....	.....	1	.....	8	.....	NW	.....	.....	.....	.....	Cloudy.....	
Essex, St. Paul de Loanda, Lower Guinea.	29.89	759.2	82	27.8	85	29.4	87	W	.....	.....	2	.....	4	.....	.....	....	.....	Smooth	.....	D. clouds.....	
Franklin, Norfolk, Va.	30.22	767.6	45	7.2	47	8.3	70	SSW	6	2.7	.....	.....	6	.....	SSW	0	0	.....	.....	Cloudy.....	
Guard, Lisbon, Portugal	30.20	767.1	58	14.4	52	11.1	86	Var.	.....	.....	0-1	.....	10	.....	Var.	.... ..	.....	.....	.....	Misty.	
Lackawana, Mare Island, Cal.	30.08	764.0	.....	.....	50	10.0	86	E	.....	.....	1-2	.....	9	.....	.....	.....	.....	.....	.....	D. clouds.....	
Marion, Villefranche, France	30.14	765.5	56	13.3	55	12.8	87	Calm	.....	.....	0	.....	10	.....	SE	0	0	Smooth	.....	D. clouds.....	
Michigan, Erie, Pa.	29.40	746.7	71	21.7	44	6.7	84	WNW	.....	.....	4	.....	10	.....	NW	.....	.....	.....	.....	Cloudy.....	
Monocacy, Amoy, China	29.94	760.5	69	20.6	61	16.1	94	N&E	.....	.....	3	.....	10	.....	E	0	0	Smooth	.....	D. clouds.....	
Monongahela, N. 12° 52', E. 43° 11'.	30.02	762.5	83	28.3	83	28.3	100	S	.....	.....	5	.....	ck	.....	.....	.....	.....	Mod'ate	S&E	D. clouds. ...	
New Hampshire, Port Royal, S.C.	30.47	773.9	.....	.....	46	7.8	58	Calm	0	0	.....	.....	1	.....	SE	0	0	.....	.....	D. clouds.....	
Omaha, Caldera, Chili	30.04	763.0	69	20.6	67	19.4	84	WNW	2	0.9	.....	.....	10	.....	Calm	0	0	Smooth	.....	Cloudy.....	
Onward, Callao, Peru	29.98†	761.5†	74	23.3	73	22.8	83	SE	.....	.....	4	.....	4	.....	.....	.....	.....	Long	W	D. clouds.....	
Ossipee, Norfolk, Va.	30.18	766.6	63	17.2	47	8.3	77	SSW	.....	.....	3	.....	6	.....	.....	.....	.....	.....	.....	Hazy.....	
Palos, Shanghai, China	30.16	766.1	52	11.1	45	7.2	76	N	.....	.....	2	.....	10	.....	.....	.....	.....	.....	.....	Cloudy.....	
Plymouth. N. 19° 13', W. 67° 54'	30.18	766.6	81	27.2	80	26.7	96	NNE	.....	.....	5	.....	7	.....	NE	.....	.....	Long	NE	Pleasant.....	
Powhatan, Norfolk, Va.	.....	.....	.....	.....	46	7.8	92	S	8.4	3.8	.....	.....	1	.....	.....	0	0	.....	.....	Clear	
Ranger, Shanghai, China	30.30	769.6	.....	.....	50	10.0	79	NE	.....	.....	2	.....	10	.....	Calm	.....	.....	.....	.....	Raining	
Rio Bravo, Brownsville, Texas	30.14	765.5	.....	.....	65	18.3	94	NW	.....	.....	2	.....	10	.....	NW	.....	.....	.....	.....	Raining.....	
Santee, Annapolis, Md.	30.06	763.5	69	20.6	48	8.9	70	WSW	.....	.....	3	.....	2	.....	.....	0	0	.....	.....	Hazy.....	
Saratoga, Norfolk, Va.	.....	.....	.....	.....	45	7.2	92	SSW	.....	.....	2	.....	.....	.....	.....	0	0	.....	.....	Clear	
St. Louis, League Island, Pa	29.85	758.2	36	2.2	34	1.1	100	SW	1	0.4	.....	.....	0	.....	.....	0	0	.....	.....	Clear	
Swatara, Norfolk, Va.	30.19	766.8	.....	.....	55	12.8	68	SSW	.....	.....	2	.....	2	.....	S&W	.....	.....	.....	.....	Hazy.....	
Tennessee, Nagasaki, Japan	30.06	763.5	68	20.0	53	11.7	73	NE	.....	.....	1	.....	8	.....	Calm	0.12	3.0	Smooth	.....	D. clouds.....	
Trenton, Villefranche, France	30.29	767.1	.....	.....	56	13.3	63	SE	3	1.3	.....	.....	9	.....	S&E	0	0	.....	.....	D. clouds....	
Vandalia, Villefranche, France	30.13	765.3	57	13.9	56	13.3	69	SE	.....	.....	2	.....	8	.....	.....	.....	.....	.....	.....	D. clouds....	
Wabash, Boston, Mass.	29.91	759.7	46	7.8	38	3.3	72	ESE	7	3.1	.....	.....	10	.....	SE	0.01	0.3	.....	.....	D clouds....	
Wyoming, Washington, D. C.	30.39†	771.9†	.....	.....	42	5.6	.....	SW	.....	.....	2	.....	0	.....	.....	.....	.....	.....	.....	Blue sky.....	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. The position given for the Plymouth is that at noon, local time, instead of that at 7:35 a. m., Washington time.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Character.	Direction from—		
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			Capt. Howard.
S. S. City of Peking, N. 29° 21′, W. 168° 00′			30.36*	771.1*	57	13.9	75	NW			1		0			Small	NW	Blue sky	Lt. Z. L. Tanner, U.S.N.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio, Hong-Kong, China			29.92	760.0	77	25.0		NE			3		3		NE			D. clouds	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

NOTE.—The originals give the wind-force by the scale 0 to 12, and weather by the Beaufort notation: not any distinction between upper and lower clouds. *Aneroid.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.

S. S. Belgic, N. 29° 29′, E. 120° 32′			30.08*	764.0*				NE			4		Heavy		NE	Mod'ate	NE	D. clouds	Capt. John Metcalf.
S. S. Gaelic, N. 31° 00′, E. 138° 42′			29.77†	756.1†	68	14.4	??	NW			5		h		SW	Head sea.	SW	Overcast	Capt. W. H. Kidley
S. S. Oceanic																			Capt. H. Parsell.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. * Corrected for temperature and elevation; instrumental error not known. †Aneroid.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig, N. 42° 10′, W. 53° 58′			29.82	757.4	42.5	5.8	??	WNW			7		8		WNW	High	WNW	Squally	Capt. Undütsch.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio, Near Dungeness			29.99	761.7	57.5	14.2	94	W			4		h		W	Smooth		Blue sky	Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds.

UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Lo'wr	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second	0—10.	0—10.	0—10.	From—	From—	Character	Direction From—		
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, Philadelphia, Pa			29.97*	761.2*	39	3.9	??	WSW			6		0					Fine	Captain Sargent.
S. S. Ohio, N. 45° 50′, W. 51° 41′			29.38	746.2	40.5	4.7	91	SSW			7		8?		SSW	Mod'ate	SW	Clear?	Captain Morrison.
S. S. Pennsylvania, Queenstown, Ireland			30.00†	762.0†	48	8.9	92	WNW			4		6?		NW	Light	W	Clear?	Captain Harris.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. * Aneroid † Corrected for temperature and elevation, instrumental error not known.

RED STAR LINE MARINE SERIES.																			
Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.																			
S. S. Nederland																			Capt. Randle.
S. S. Switzerland, N. 45° 18′, W. 50°			29.50*	749.3*				SSW	20	8.9			3		SSW	Heavy	SE	Fine	Capt. Jackson. Capt. Nichols.
S. S. Vaderland																			

* Aneroid: regulated to standard at Antwerp.

ALLAN LINE MARINE SERIES.																			
Furnished by the coöperation of A. Schumacher, & Co., Agents.																			
S. S. Hibernian																			
S. S. Scandinavian, N. 37° 24,′ W. 73° 40′			30.15	765.8	55	12.8		SSW			6		2		W	Mod'ate	SW	D. clouds	Capt. W. Richardson.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

MARINE SERIES. (Miscellaneous.)																			
Furnished by the coöperation of the Observer named.																			
Schooner Addie Fuller, Kennebunk, Maine			29.99	761.7	35	1.7	100	SW	8	3.6			10n		SW			Rain and fog	Capt. James Jorgensen.

NOTE.—The originals for the schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.,) Chief Signal Officer. U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON DECEMBER 14, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSÉ mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:48 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:28 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours	.....	.....	30.05	763.3	64.9	18.3	69	Calm	.....	.....	0	.....	7	.....	.....	0.098	2.5	Very cloudy	Michel.
Algiers	.....	.....	29.95	760.6	61.5	16.4	86	NNW	.....	.....	1	.....	10	.....	.....	1.173	29.8	Covered	Peter.
La Calle	.....	.....	29.89	759.3	57.6	14.2	61	S	.....	.....	4	.....	9	.....	.....	0.157	4.0	Covered	Fleury.
Tunis	.....	.....	30.06	763.4	59.5	15.3	76	SE	.....	.....	4	.....	10	.....	.....	0.138	3.5	Covered	Jacques.
Sfax	.....	.....	30.02	762.5	62.6	17.0	.....	E	.....	.....	1	.....	10	.....	.....	0.197	5.0	Covered	Husson.
Saida	.....	.....	29.95	760.8	49.3	9.6	76	SSW	.....	.....	1	.....	6	.....	.....	0	0	Cloudy	Millot.
Tebessa	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Bassières.
Geriville	.....	.....	29.95	760.6	47.1	8.4	94	WSW	.....	.....	3	.....	5	.....	.....	0	0	Cloudy	Lemaillot.
Laghouat	.....	.....	29.95	760.6	50.0	10.0	100	E	.....	.....	2	.....	10	.....	.....	0	0	Covered	Guyot.
Biskra	.....	.....	29.91	759.8	57.0	13.9	82	S	.....	.....	1	.....	8	.....	.....	0.965	24.5	Very cloudy	Kuntz.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890 ? meters, or 2,919.9 ? feet; Tebessa, 1,088 ? m., or 3,569.4 ? ft.; Geriville, 1,360 ? m.; or 4,461.7 ? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

Agram	29.58	751.4	30.12	765.1	34.2	1.2	94	Calm	.....	.....	0	.....	10	.....	.....	0.500	12.7	Snowing	Prof. Ivan Stozir
Cracow, I. R. Observatory	29.39	746.5	30.19	766.8	35.2	1.8	96	W	.....	.....	1	.....	10	.....	.....	0.197	5.0	.....	Dr. Wierzbiski.
Eperies	29.28	743.6	30.18	766.6	35.6	2.0	93	Calm	.....	.....	0	.....	10	.....	.....	0	0	.....	Julius Mikolik.
Gratz	28.88	733.6	30.20	767.0	33.1	0.6	90	S	.....	.....	2	.....	10	.....	.....	0	0	.....	Andreas Rœpini.
Hermannstadt	28.74	730.1	30.22	767.6	38.7	3.7	64	ESE	.....	.....	1	.....	3	.....	.....	0	0	.....	Prof. Reissenberger.
Kremsmünster	28.79	731.2	30.18	766.6	37.0	2.8	93	Calm	.....	.....	0	.....	10	.....	.....	0.094	2.4	.....	Prof. C. Wagner.
Lemberg	29.15	740.3	30.17	766.4	37.0	2.8	84	S	.....	.....	1	.....	10	.....	.....	Blank	Blank	.....	Dr. T. Stanecki.
Pola	29.92	759.9	30.03	762.8	47.7	8.7	99	W	.....	.....	1	.....	10cs	.....	.....	0.471	11.96	Foggy	I.R.HydrographicOffice
Szathmar	29.78	756.3	30.26	768.6	41.4	5.2	66	E	.....	.....	3	.....	9	.....	.....	0	0	.....	Johann Tamas, S. J.
Szegedin	29.88	759.0	30.17	766.4	39.2	4.0	84	Calm	.....	.....	0	.....	10	.....	.....	0	0	.....	Karl Stancel.
Trieste	29.97	761.1	30.07	763.7	44.2	6.8	80	E	.....	.....	1	.....	10	.....	.....	2.095	53.2	Raining	P. Busin.
Vienna	29.46	748 3	30.20	767.0	33.3	0.7	98	Calm	.....	.....	0	.....	10	.....	.....	0.240	6.1	Snowing	I. R. Central Met. Obs'y
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

Arlon	28.71	729.2	30.28	769.0	35.4	1.9	87	WSW	.....	.....	1	.....	9	.....	.....	0	0	.....	Prof. M. Passau.
Brussels	29.98	761.6	30.20	767.0	39.2	4.0	88	WSW	.....	.....	4	.....	3	.....	WNW	0	0	.....	Royal Observatory.
Furnes	30.21	767.2	30.27	767.8	44.4	6.9	77	WNW	.....	.....	4	.....	5	.....	.....	0	0	.....	M. E. de Cae.
Maeseyck	30.03	762.8	30.16	766.1	39.0	3.9	91	SW	.....	.....	4	.....	2	.....	.....	0.024	0.6	.....	M. Pierrot.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Aberdeen	30.00	762.0	30.10	764.5	39.5	4.2		W	10	4.5			2			0	0	Blue sky	W. Boswell.
Ardrossan	30.17	766.3	30.19	766.8	44	6.7		WNW			3		3					Blue sky	William McNeil.
Armagh, Observatory			30.32	770.1	39.7	4.3		SW	8	3.6			2					D. clouds	S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)			30.26	768.6	43.8	6.6		WNW	23	10.3			1					Blue sky	John Hartnup.
Birr Castle, (Parsonstown)			30.37	771.4	40.8	4.9		Calm			0		0					Blue sky	J. Dreyer.
Bradford, Yorkshire	29.81	757.2	30.20	767.1	40.3	4.6		N			1		0			0.15	3.8	Blue sky	J. McLandsborough.
Bridgetown, (Barbados)	29.94	760.5	29.97	761.2	80.0	26.7		NE			1		2					D. clouds	Pvt. G. W. Roberts, A.
Cambridge, Observatory			30.23	767.8	43.2	6.2		W			1		0?					D. clouds?	H. Todd. [H.C.
Cardington			30.25	768.3	41.0	5.0		NW			1		2					Blue sky	John McLaren.
Chatham, School M. E	30.10	764.5	30.24	768.1	41.2	5.1		W			1		0					Foggy	Lt. W. G. Morris, R. E.
Dartmoor	28.87	733.3	30.39	771.9	40.0	4.4		NW			2		5					D. clouds	Alexander Watt.
Davos Platz (Switzerland)																			Francis Redford, M. A.
Donaghadee	30.25	768.3	30.28	769.1	40	4.4		W			2		3					D. clouds	J. Mac Gowan.
Dover	30.21	767.3	30.24	768.1	41	5.0		WNW			3		4					⅘ clouded	J. Costello.
Eccles, (near Manchester)			30.25	768.3	40.2	4.6		NW	0.6	0.3			7					D. clouds	Thomas Mackereth.
Falmouth, Observatory	30.16	766.1	30.40	772.1	47.5	8.6		NW			2		2					D. clouds	The Staff.
Fort Napier, (Natal)	27.43	696.7	29.62	752.3	81.4	27.4		E			3		8					D. clouds	Pvt. G. Salmon, A. H. C.
Free Town, (Sierra Leone)			29.96	761.0	85	29.4		E			1		3					D. clouds	
Galway, Queen's College																			Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	29.78	756.4	29.84	757.9	56.8	13.8		W			6		10					Gloomy	Corpl. C. Aitken, A. H. C.
Glasgow, Observatory	29.98	761.5	30.18	766.6	38.9	3.8		WSW			2		9					Gloomy	D. G. Maclean.
Great Yarmouth	30.14	765.5	30.15	765.8	39	3.9		NW			3		2					Hazy	G. T. Watson.
Greenwich, Royal Obs'y	30.09	764.3	30.27	768.8	39.3	4.1		WNW			1		7					Thinclouds; misty	The Staff, for G. B. Airy.
Guernsey	30.16	766.1	30.36	771.6	46	7.8		NW			2		4					D. clouds	Dr. S. E. Hoskins, F.R.S.
Helston			30.35	770.9	48	8.9		N			2		3			0.16	4.1	D. clouds	M. P. Moyle.
Holyhead	29.96	761.0	30.01	762.2	45	7.2		WNW			3		2					Blue sky	John Tilston.
Jersey	30.08	764.0	30.39	771.9	47.4	8.6		NW			4		5			Blank	Blank	D. clouds	J. Fisher.
Kew, Observatory			30.07	763.8	42.1	5.6		W	7	3.1			3					D. clouds	The Staff.
Kingstown	30.30	769.6	30.33	770.4	41	5.0		W			4		1					Blue sky	George Mitchell.
Leicester, Museum			30.33	770.4	41.2	5.1		W			2		4					D. clouds	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.89	759.2	29.96	761.0	62.4	16.9		NW			3		6					D. clouds	Sgt. Fred. Travis, A. H.
Nairn	29.97	761.2	30.07	763.8	38	3.3		Calm			0		2					¼ clouded	W. D. Penny. [C.
Nassau, (Bahamas)			30.21	767.3	71.5	21.9		NE			4		4					D. clouds	C. S. Duncombe.
Nottingham, Observatory	30.05	763.3	30.25	768.3	43.1	6.2		NW			3		0			0	0	Blue sky	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.72	754.9	30.26	768.6	41.2	5.1		NW			3		5					D. clouds	Rev. Stephen Whitty
Oxford, Radcliffe Obs'y			30.27	768.8	42	5.6		W			1		0					Blue sky	Mr. Lucas.
Plymouth	30.29	769.4	30.37	771.4	44.8	7.1		WNW			3		3					D. clouds	John Merrifield.
Roche's Point	30.35	770.9	30.40	772.1	43	6.1		NW			3		2					Fine	W. Kennedy.
Saint Ann's Head	30.19	766.8	30.35	770.9	46	7.8		NW			3		4						John C. Walker.
Sandwick Manse, (Orkneys.)			29.96	761.0	41.2	5.1		W	22	9.8			2					Showery	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey			30.23	767.8	50.0	10.0		N			1		3					D. clouds	Sergt. W. H. Lyne.
Sheffield	29.96	761.0	30.25	768.3	41.7	5.4		NW			1		4			0	0	Hazy	W. F. Cooper.
Silloth Rectory	30.18	766.6	30.22	767.6	44.3	6.8	76	NW			1		0			0.010	0.26	Blue sky	Rev. F. Redford, M. A.
Stonyhurst, Observatory					39.0	3.9		W			0		10					Misty	Rev. S. J. Perry.
Stornoway, Lews C. (Hebr.)			30.04	763.0	38	3.3		WNW			1		2					Blue sky	John Smith.
Stratfield Turgiss	30.05	763 3	30.27	768.8	42.5	5.8		NW			1		5					D. clouds	Rev. C. H. Griffith, F.M.S.
Thurso			29.98	761.5	40	4.4		WSW			4		9					Raining	John Trotter.
Truro, Royal Institution			30.42	772.7	49	9.4		NW			4		6					D. clouds	W. Newcombe.
Valencia, Observatory			30.42	772.7	46.6	8.1		WSW	4	1.8			5					D. clouds	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)																			Henry Mercer.
Cape Good Hope, Obs'y	30.02	762.5	30.06	763.5	72.5	22.5	53	WSW	11	4.9		8	6						The Staff, for E. J. Stone.
Hobart Town, (Tasmania)			29.26	743.2	67.0	19.4	83	NW			3		10k			0	0		Francis Abbott, F.R.A.S.
Leith, Restalrig Park																			Andrew Gibb.
Mauritius, Observatory	29.87	758.7	30.06	763.4	81.7	27.6	66	E	17.5	7.8		0	4		E	0.26	6.6	Squally	C. Meldrum.
Melbourne, Observatory	29.85	758.2	29.94	760.5	57.1	13.9	75	ESE	5	2.2			0			0	0	Very fine	R. L. J. Ellery.
Monach L't-house, (Hebrides)																			J. Youngclause.
North Unst, (Shetland Is.)																			Robert Burnet.

Note.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m.

Marine Series.

Vessels.

	Sea or swell. Height scale 0—9	Sea or swell. Direction from—		
S. S. Algeria				Capt. W. Watson.
S. S. Batavia				Capt. J. E. Mouland.
Ship Camperdown				Capt. A. T. Miller.
Brig Catherine				Capt. Adam Smith.
Barque Celeste				Capt. D. F. McKechnie.
S. S. Hibernia				Capt. W. R. Cato
Barque Maroon				Capt. A. T. Brown.
Ship Mikado				Capt. C. C. Prehn.
S. S. Seine				Capt. H. Manning.
Barque Sorata				Capt. Jas. J. Price.
Schooner Traveller				Capt. Alex Simpson

Note.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	BAROMETER. Corrected for instrum'tal errdr and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	Low'r 0—10.	Direction. Upper. From—	Lower. From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	Millimeters.	WEATHER.	OBSERVER.
San José	26.18	665.0			67.1	19.5	81	SE			6		1ks		NE	0	0		Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.92	759.9	29.97	761.1	38.3	3.5	98	WSW			2		10					Foggy	
Fanöe	29.97	761.2	29.99	761.7	40.1	4.5	87	WSW			2		6						
Godthaab, (Greenland)	29.24	742.7	29.28	743.8	21.7	— 5.7	85	ENE			2		8						
Stykkisholm, (Iceland)	29.71	754.7	29.76	755.8	29.3	— 1.5	100	SW			4		5						
Thorshavn, (Farõe)	29.80	757.0	29.84	757.9	36.5	2.5	84	W			2		7					Raining	
Vestervig	29.78	756.3	29.95	760.6	34.7	1.5	94	Calm			0		2						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

Alençon, Normal School	29.81	757.2	30.36	771.2	44.6	7	59	NW			1		5		NW	0	0	Cloudy	Collignon, Director.
Amiens, Normal School	30.13	765.2	30.24	768.0	42.8	6	85	W			3		0			0.126	3.2	Clear.	Bonvarne, Director.
Avignon, Normal School	30.03	762.8	30.11	764.8	46.9	8.3	59	N			4		10			0.126	3.2	Misty	Mr. Giraud, Director
Bar-sur-Seine	29.73	755.2	30.32	770.2	38.7	3.7	90	N			1		8cn		W	0	0	Very cloudy	C. Saillard.
Beaumette Obs'y (Angers)	30.18	766.5	30.34	770.7	43.9	6.6	79	N	4.0	1.8						0	0		Albert Cheux.
Beauvais	30.00	762.0	30.30	769.5	41.9	5.5	75	NW			1		2		NW	0	0	Slightly cl'dy	Normal School.
Besançon	29.39	746.4	30.32	770.0	38.5	3.6	93	S			2		2		SW	0.110	2.8	Slightly cl'dy	Normal School.
Bourg-en-Bresse	29.38	746.3	30.31	769 8	39.4	4.1	90	N			2		5n		N	0	0	Cloudy	Normal School.
Bourges, Normal School	29.76	755.9	30.34	770.6	37.8	3.2	97	SW			4		5		SW	0.020	0.5	Cloudy	A. Wagner, Director.
Brest, Naval Observatory	30.11	764.9	30.33	770.4	48.4	9.1	65	NNW			2		5		N	0.108	2.75		The Staff.
Carcassonne, Normal School	29.80	756.8	30.22	767.6	46.0	7.8	91	W			2		5		NW	0	0	Cloudy	Vateau, Director.
Caen	30.26	768.6	30.34	770.6	46.0	7.8	75	W			1		2		NW	0.031	0.8	Slightly cl'dy	Normal School.
Chartres, Normal School	29.68	753.9	30.26	768.6	52.3	11.3		W			2		0			0	0	Clear	Lequin, Director.
Châlons-sur-Marne, N. Sch'l	29.94	760.5	30.27	768.9	39.2	4	93	NW			3		5kn		NW	0.368	9.1	Cloudy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.88	733.6	30.29	769.4	40.3	4.6	88	NW			2		10		NW	0.028	0.7	Covered	Alluard, Director.
Commercy, Normal School	29.37	746.1	30.29	769.4	37.9	3.3	80	NW			4		5		NW	0.142	3.6	Cloudy	Dr. Goulet, Director.
Commune de Gréasque*	28.94	735.1	30.08	764.1	44.4	6.9	85	NW			2		10		NW	0.283	7.2	Covered	M. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	30.17	766.2	30.39	771.8	44.6	7.0	85	N			1		0			0	0	Clear	Mouillot, Director.
Le Mans, Normal School	30.07	763.7	30.39	771.9	41.4	5.2	63	W			2		0			0	0	Clear	Poirrier, Director.
Lons-Le-Saulnier, N.School	29.85	745.6	30.30	769.6	39.0	3.9	90	N			2		10			0	0	Covered	Voudez, Director.
Lorient, Naval Observatory	30.31	769.8	30.41	772.4	46.8	8.2	61	NW			2		2		N	0	0	¾ covered	T. Carré, Director.
Mâcon, Normal School	29.53	750.1	30.26	768.5	41.0	5	93	NW			2		5		NE	0	0	Cloudy	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	29.17	740.9	30.26	768.5	39.2	4	97	S			2		5		NE	0	0	Partly cov'd	Normal School.
Nismes, Normal School	29.95	760.8	30.16	766.1	49.1	9.5	73	S			2		2		S	0.020	0.50	Slightly cl'dy	Boyer, Director.
Orleans, Normal School	29.93	760.2	30.32	770.0	41.0	5	79	N			2		0			0	0	Clear	Bernard, Director.
Paris, Observatory	30.05	763.3	30.30	769 7	42.8	6.0	70	NW			1		0			0	0	Clear	National Observatory.
Privas	29.16	740.7	30.26	768.5	47.3	8.5	53	N			2		5		N	0	0	Cloudy	Normal School
Rochefort, Naval Obs'y	30.34	770.6	30.37	771.4	45.3	7.4	85	NNE			3		0			0	0	Blue sky	Lt. Decante, Director.
Rouen, Normal School	30.21	767.3	30.30	769.5	41.2	5.1	73	W			2		2		W	0.311	7.9	Slightly cl'dy	F. Lucard, Director.
Tarbes, Normal School	29.91	736.8	30.10	764.6	51.4	10 8	71	W			2		0			0	0	Clear	T. Hugues, Director.
Villefranche	29.56	750.9	30.30	769.7	41.9	5.5	92	N			2		5		N	0	0	Cloudy	Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.82	757.5	29.85	758.2	77.0	25										0.12	3.		L'Abbé Marchési.
Marseilles, Observatory			30.07	763.8	48.2	9.0	57	NW			1-2		10			0.181	4.60	Raining	The Staff.
Mont-Louis	24.90	632.5	30.22	767.5	30.2	— 1.0	45		9.3	4.17			10		N	0.654	16.6		Mr. Falguère.
Nice			30.02	762.6	52.0	11.1	77	SE			2		10			0.079	2.0	Raining	Dr. A. Niepce.
Paris, Montsouris Obs'y	30.01	762.2	30.28	769.2	43.0	6.1	69	NW			2		0			0	0		Marié Davy, Director.
Perpignan			30.18	766.6	52.0	11.1	54	NW	22.4	10.00			5		NW	0.520	13.2		Dr. Fines.
Pic du Midi, (Summit,) H. P.	21.21	538.8			8.1	—13.3		N			6		10					Snowy	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.50	571.4			14.0	—10.0		N			4		10			0.413	10.5	Snowy	Gen'l de Nansouty.
Saint Maur, (near Paris)	30.12	765.0	30.28	769 2	42.6	5.9	74	NNW			1		0			0	0		E. Renou.
Toulouse, Observatory	29.59	751.5	30.32	770.0	44.6	7.0	70	NW			2		9			0	0		The Staff.
Tours	30.13	765.4	30.33	770.4	43.2	6.2	77	W			2		0			0	0	Clear	C. Marquet.
Versailles, (near Paris)			30.29	769.4	42.1	5.6	78	NW			1		0			0.010	0.25	Very clear	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.16	766.0	30.19	766.7	48.9	9.4	95	NE	2.9	1.3			10k			0	0	Covered	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published. At Mirecourt and Rochefort the cloud directions are apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instru-m't'al error and temperature. Inches.	Barometer. Corrected for instru-m't'al error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Dr. Hoh.
Berlin	29.93	760.2	30.11	764.8	37.8	3.2	87	S	.....	.....	1	.....	10	.....	.....	0.007	0.18	.....	Prof. Arndt.
Breslau	29.62	752.3	30.15	765.8	37.9	3.3	89	W	.....	.....	0	.....	4	.....	.....	0	0	.....	Royal University Obs'y.
Carlsruhe	29.78	756.4	30.23	767.7	38.3	3.5	92	SW	.....	.....	1	.....	10	.....	.....	0.130	3.3	Rain & snow	Albert Senz.
Cassel	29.59	751.5	30.20	767.0	38.8	3.8	80	SW	.....	.....	2	.....	8	WSW	.....	0.046	1.18	.....	Dr. H. Möhl.
Crefeld	29.97	761.1	30.13	765.2	39.7	4.3	88	W	.....	.....	2	.....	5	.....	.....	0.04	1.	.....	Director Lose.
Emden	30.15	765.6	30.19	766.7	37.9	3.3	91	WSW	.....	.....	2	.....	10	.....	.....	0.118	3.0	.....	Prof. Prestel.
Frankfort on the Main	29.83	757.7	30.21	767.4	40.3	4.6	.....	SSW	.....	.....	1	.....	4	.....	.....	0.020	0.5	.....	Physical Society.
Friedrichshafen	28.76	730.5	30.24	768.2	41.5	5.3	72	W	.....	.....	5	.....	10	WSW	.....	0.031	0.8	Rain,snow,gr'pel	M. Wilhelm.
Hamburg	29.96	760.9	30.03	762.7	38.1	3.4	93	WSW	.....	.....	2	.....	10	.....	.....	0.055	1.4	Cloudy	Captain F. Hegemann.
Kiel	29.97	761.1	29.98	761.6	38.1	3.4	90	SW	.....	.....	2	.....	10	.....	.....	0.056	1.42	.....	Prof. G. Karsten.
Königsberg, (Prussia)	30.04	763.0	30.12	765.0	34.2	1.2	88	S	.....	.....	.....	.....	.....	.....	.....	0.086	2.19	Cloudy	Prof. E. Luther.
Köslin	.....	.....	30.04	763.1	35.2	1.8	.....	S	.....	.....	2	.....	4	.....	.....	0	0	.....	H. Müller.
Leipsic, Observatory	29.73	755.1	30.17	766.3	36.7	2.6	89	WSW	.....	.....	2	.....	10	.....	.....	.....	.....	Rainy	Prof. Bruhns.
Memel, Naval School	30.07	763.6	30.11	764.8	32.0	0.0	90	SE	.....	.....	3	.....	10cs	.....	.....	.....	.....	Cloudy	Reinbrech von Skalweit.
Neufahrwasser	30.08	764.0	30.10	764.4	34.7	1.5	94	S	.....	.....	2	.....	10	.....	.....	0	0	Dust-haze	A. Lothes.
Posen	29.82	757.4	30.12	765.0	39.6	4.2	88	S	.....	.....	2	.....	10	.....	.....	0	0	Cloudy	Dr. Magener.
Strassburg Obs., (in Alsace	29.71	754.7	30.29	769.3	39.9	4.4	78	NW	.....	.....	3	.....	7	WNW	.....	0.032	0.82	.....	Dr. Schur.
Stuttgart	29.20	741.7	30.18	766.6	37.9	3.2	83	W	.....	.....	1	.....	10	.....	.....	0.051	1.3	Light rain	Prof. Schoder.
Treves, (Trier)	29.59	751.6	30.11	764.9	41.0	5.0	71	W	.....	.....	4	.....	8	.....	.....	0.007	0.18	Foggy	Prof. Flesch.
Weissenburg, (Bavaria)	28.62	727.0	30.19	766.9	35.6	2.0	89	SW	4	2	.....	.....	10	.....	W	.....	.....	Raining	Dr. Von Bebber.
Wustrow, Naval School	30.02	762.5	30.06	763.5	37.2	2.9	91	S	.....	.....	4	.....	10	.....	.....	0	0	Covered	E. F. Schütz.
German Naval Series.																			

NOTE.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet: Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4. Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines, Königsberg, Posen and Wustrow in cubic zolls. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.84	757.9	30.24	768.0	53.2	11.8	.....	NE	.....	.....	2	.....	.....	.....	.....	.....	.....	Clear	Dr. J. F. J. Schmidt.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and wind-force; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	30.01	762.2	30.06	763.6	71.9	22.2	49	NE	23.0?	10.3?	.....	.....	0	.....	.....	0	0	Blue sky	
Deesa	29.57	751.0	30.06	763.4	75.3	24.1	47	Calm	.....	.....	.....	.....	2	S	.....	0	0	D. clouds	
Bombay	29.90	759.5	29.94	760.5	81.7	27.6	80	NW	10.0	4.5	.....	.....	0	.....	.....	0	0	Misty	
Poona	27.97	710.5	29.99	761.8	76.4	24.7	73	NE	.....	.....	.....	.....	1	.....	.....	0	0	D. clouds	
Lahore	29.36	745.7	30.15	765.8	55.3	12.9	84	Calm	0.9	0.4	.....	.....	10	.....	.....	0	0	Cloudy	
Belgaum	27.42	696.6	29.98	761.6	73.9	23.3	83	Calm	.....	.....	.....	.....	8	W	W	0.05	1.3	Thunder;lightn'	
Bangalore	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Roorkee	29.18	741.1	30.14	765.4	53.8	12.1	94	Calm	1.7	0.8	.....	.....	.....	.....	.....	0	0	Foggy	
Agra	29.54	750.4	30.14	765.6	57.8	14.3	76	N	.....	.....	.....	.....	.....	.....	.....	0	0	.....	
Trichinopoly	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nagpur	29.01	736.8	30.08	764.1	69.8	21.0	85	Calm	2.6	1.2	.....	.....	10	.....	NE	Inap.	Inap.	Drizzling	
Madras	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Lucknow	29.73	755.2	30.13	765.2	57.9	14.4	85	WNW	0.6	0.3	.....	.....	0	.....	.....	0	0	Blue sky	
Allahabad	29.78	756.5	30.11	764.8	58.5	14.7	79	Calm	1.1	0.5	.....	.....	0	.....	.....	0	0	Blue sky	
Patna	29.90	759.5	30.09	764.3	61.8	16.6	71	W	1.3	0.6	.....	.....	4	W	W	0	0	D. clouds	
Hazaribagh	28.03	711.9	30.14	765.5	57.8	14.3	57	NW	5.7	2.6	.....	.....	0	.....	.....	0	0	Blue sky	
Cuttack	29.88	758.9	29.96	761.0	74.0	23.3	76	ENE	0.6	0.3	.....	.....	.....	.....	.....	0	0	Blue sky	
Calcutta (Alipore)	30.07	763.7	30.09	764.2	63.0	17.2	67	NNW	1.0	0.4	.....	.....	0	.....	.....	0	0	Blue sky	
Goalpara	29.63	752.7	30.04	762.9	69.8	21.0	63	Calm	0.5	0.2	.....	.....	0	.....	.....	0	0	Blue sky	
Chittagong	29.95	760.7	30.04	763.1	69.8	21.0	57	NE	2.4	1.1	.....	.....	1	.....	.....	0	0	Blue sky	
Sibsagar	29.73	755.2	30.08	764.1	63.0	17.2	89	Calm	0.5	0.2	.....	.....	2	.....	.....	0	0	Blue sky	
Rangoon	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Jubbulpore	28.71	729.2	30.12	765.1	64.9	18.3	61	NE	1.3	0.6	.....	.....	.....	.....	.....	0	0	Blue sky	

NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	22.07	560.6	30.11	764.8	20.8	— 6.2	80	W	.....	.....	4	.....	3	W	.....	0	0	.....	Ab. Dom. Morgini.
Stelvio	22.06	560.2	30.07	763.6	21.6	— 5.8	.....	WNW	.....	.....	1	.....	7	.....	.....	0	0	.....	Signora Ernesta Manfredi.
Udine	29.83	752.5	30.06	763.4	43.0	6.1	83	N	1.3	0.6	.....	.....	10	.....	.....	0.382	9.7	.....	Prof. Giovanni Clodig.
Padua	29.94	760.5	30.06	763.4	41.9	5.5	91	NW	11.2	5.0	.....	.....	8	SW	.....	0.138	3.5	.....	Prof. Dott. Lorenzoni.
Vicenza	29.88	759.0	30.08	764.1	42.4	5.8	91	W	3.8	1.7	.....	.....	10	E	.....	0.299	7.6	.....	Conte Alm. Da Schio.
Verona	29.93	760.3	30.17	766.2	43.5	6.4	82	NE	0	0	.....	.....	10	.....	.....	0.142	3.6	.....	Dott. B. Bertoncelli.
Bergamo	28.73	729.8	30.12	765.0	41.0	5.0	69	WSW	.....	.....	2	.....	5	.....	.....	0	0	.....	Prof. Trionfini Carlo.
Domodossola	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Giuseppe Calza.
Milan	29.58	751.3	30.12	765.0	41.4	5.2	.....	WNW	.....	.....	1	.....	6	WNW	.....	0	0	.....	Ab. Gio. Capelli.
Pavia	29.75	755 7	30.12	765.0	39.7	4.3	87	S	.....	.....	2	.....	10	.....	.....	0.059	1.5	.....	Prof. Gio. Cantoni.
Moncalleri	29.18	741.1	30.13	765.3	40.8	4.9	70	SSE	0.7	0.3	.....	.....	6	NW	.....	0	0	.....	Prof. P. F. Denza.
Mondovi	28.14	714.8	30.14	765.6	38.3	3.5	69	NW	.....	.....	2	.....	8	SW	.....	0	0	.....	Prof. D. C. Bruno.
Porto Maurizio	29.84	758.0	30.07	763.8	49.6	9.8	78	NNE	.....	.....	2	.....	10	.....	.....	0.071	1.8	.....	Prof. L. Vassallo.
Genoa	29.87	758.7	30.05	763.2	49.6	9.8	67	NE	7.4	3.3	.....	.....	2	N	.....	0.067	1.7	.....	Prof. G. M. Garibaldi.
Piacenza	29.85	758.3	30.12	765.0	39.9	4.4	84	NW	0.7	0.3	.....	.....	10	.....	.....	0.087	2.2	.....	Dott. G Manzi.
Parma	29.80	757.0	30.13	765.4	40.1	4.5	90	NW	.....	.....	2	.....	10	.....	.....	0.248	6.3	.....	Prof. P. Pigorini.
Florence	29.80	757.0	30.07	763.8	49.6	9.9	92	E	.....	.....	2	.....	10	.....	.....	0.488	12.4	.....	Cav. F Meucci.
Leghorn	29.94	760.4	30.02	762.6	51.4	10.8	94	SW	1.7	0.6	.....	.....	10	NE	.....	0.906	23.0	.....	Prof. P. Monte.
Siena	28.80	731.5	30.05	763.3	47.7	8.7	98	SE	2.5	1.1	.....	.....	10	NE	.....	0.532	13.5	.....	Prof. L. Toscani.
Urbino	28.50	723.9	30.13	765.2	39.6	4.2	95	NNE	.....	.....	2	.....	10	.....	.....	0.205	5.2	.....	Prof. P. Serpieri.
Pesaro	30.03	762.7	30.08	764.0	42.3	5.7	89	NW	23.0	10.3	.....	.....	10	NW	.....	0.252	6.4	.....	Prof. Luigi Guidi.
Ancona	29.96	760.9	30.07	763.7	45.3	7.4	88	NW	.....	.....	6	.....	10	.....	.....	0.118	3.0	.....	Prof. F. DeBosis.
Grosseto	29.91	759.6	30.02	762.5	58.3	14.6	81	SSE	.....	.....	2	.....	8	NW	.....	0.091	2.3	.....	Avv. P. Ponticelli.
Rome	29.91	759.6	30.09	764.2	59.2	15.1	73	SW	11.9	5.3	.....	.....	9	.....	.....	0.016	0.4	.....	Prof. P. A Secchi.
Naples, O. U	29.94	760.4	30.14	765.6	61.7	16.5	69	SSW	.....	.....	2	.....	6	SW	.....	0.051	1.3	.....	Prof. L. Palmieri.
Lecce	30.00	762.0	30.267	768.67	57.9	14.4	72	SSE	9.4	4.2	.....	.....	4	.....	.....	0.008	0.2	.....	Prof. C. De Giorgi.
Cosenza	29.27	743.5	30.18	766.6	56.1	13.4	73	SE	0	0	.....	.....	3	.....	.....	0.008	0.2	.....	Prof. F. D. Conti.
Cagliari	29.81	757.2	30.01	762.2	55.0	12.8	83	NW	.....	.....	2	.....	10	.....	.....	0	0	.....	Prof. A. Pacinotti.
Riposto, (Sicily)	30.13	765.3	30.18	766.5	59.5	15.3	75	S	.....	.....	2	.....	10	NE	.....	0	0	.....	Prof. F. Cafiero.
Palermo	29.81	757.1	30.07	763.7	57.2	14.0	73	NE	0	0	.....	.....	10	.....	.....	0.004	0.1	.....	Prof. G. Cacciatore.
Caltanissetta	28.15	715.1	30.13	765.3	51.6	10.9	85	S	.....	.....	2	.....	10	.....	.....	0	0	.....	Prof. A. Pagani.
Syracuse	30.06	763.5	30.13	765.4	57.6	14.2	78	NE	.....	.....	2	.....	7	SW	.....	0	0	.....	Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R	29.59	751.5	30.14	765.6	57.2	14.0	57	ESE	4.3	1.9	.....	.....	7	.....	.....	0	0	.....	Prof. F. Brioschi.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give the wind-force on the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,543.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Siena, 348.5 m., or 1,143.3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Tokei (Yeddo)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	The Observatory.
Tokei (Yeddo) University	30.07	763.8	30.17	766.4	44.6	6.9	88	.....	.....	.....	.....	.....	10ks	.....	.....	0	0	.....	Prof. P. V. Veeder.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the coöperation of Senor Mariano Barcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Aguascallentes	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	I. N. Marin, M. D.
Córdoba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	C. Peña, M. D.
Cuernavaca	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	L. Castillo, A. E.
Guadalajara	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. L. Perez.
Guanajuato	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. V. Fernandez.
Leon	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. M. Leal.
Mexico	29.22	589.8	30.37	771.5	50.0	10.0	87	Calm	0	0	.....	0	8ks	.....	.....	0	0	Cloudy	Central Observatory.
Orizaba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	N. N.
Orizaba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	I. Orozco, M. D.
Pabellon, (Aguascalts)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. V. de Leon, M. E.
Puebla	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. B. Gonzalez.
Toluca	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. C. Velazquez.
Tlacotalpam	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. F. R. Bayly.
San Luis Potosi	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	G. Barroeta, M. D.
Vera-Cruz	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. J. Rossell.
Zacatecas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. A. Bonilla, M. E.
Puebla, (Catholic Institute)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	P. Spina. [M. M. D. D.
Morelia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Tena, F. L. Páramo

NOTE.—The elevation of Aguascallentes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,290 m., or 7,512.9 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m,, or 8,611.8 ft.; San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	30.19	766.9	30.19	766.9	42.8	6.0	.....	WNW	.....	.....	4	.....	.....	.....	.....	0.038	2.5	.....	
Groningen	29.95	760.8	30.01	762.2	39.0	3.9	.....	WSW	.....	.....	2	.....	.....	.....	.....	0.122	3.1	.....	
Helder	30.03	762.7	30.03	762.7	44.4	6.9	.....	W	.....	.....	5	.....	.....	.....	.....	0 031	0.8	.....	
Hellevoetsluis	.....	.....	30.13	765.4	41.7	5.4	68	WNW	.....	.....	3	.....	.....	.....	.....	.....	.....	.....	
Utrecht	30.07	763.8	30.12	765.0	42.6	5.9	83	WSW	.....	.....	3	.....	8	.....	.....	0.071	1.8	Very cloudy	H. v d Brink.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	29.81	757.1	29.86	758.5	39.2	4.0	90	SSE	7.4	3.3	.....	.....	7	.....	.....	0.386	9.8	Rain & snow	
Brönö	29.79	756.6	29.83	757.6	34.5	1.4	74	W	9	4	.....	.....	8	.....	.....	0.001	2.3	.....	
Christiania	29.78	756.3	29.93	760.2	25.9	— 3.4	91	NNE	4	2	.....	.....	10	.....	.....	0.071	1.8	Light fog	
Tromsö	29.47	748.6	29.52	749.7	38.5	3.6	54	SSW	20	9	.....	.....	1	.....	.....	0	0	.....	

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	30.13	765.2	30.32	770.1	63.3	17.4	82	W	3.1	1.4	.....	.....	7	.....	.....	0.079	2.0	.....	Dr. J. A. Sampaio.
Campo Major	29.03	737.4	30.08	763.9	51.3	10.7	56	NNE	30.4	13.6	.....	.....	3	NNE	.....	0.602	15.3	.....	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.22	767.5	30.29	769.3	66.4	19.1	80	Calm	0	0	.....	.....	8	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.83	757.6	30.19	766.8	54.3	12.4	52	N	31.1	13.9	.....	.....	0	.....	.....	0.787	20.0	.....	The Staff.
Ponta Delgada, (Azores)	30.34	770.5	30.41	772.3	65.5	18.6	78	W	6.3	2.8	.....	.....	4	NE	.....	0.228	5.8	.....	

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

Naval Series. Vessels.	Sea or swell. Height scale 0–9	Sea or swell. Direction from—		
S. S. Bartholomew Dias	.....	.....	.....	R. A. T. Pinha, Com'd't.
S. S. India	.....	.....	.....	A. D. Pedroso, Com'd't.
S. S. Mindello	.....	.....	.....	J. F. R. R. Bastos, Com'd't.
S. S. Sado	.....	.....	.....	A. N. P. Sampaio, Com'd't.
S. S. Sá da Bandeira	.....	.....	.....	F. Texeira da Silva, Com'd't.
S. S. Tejo	.....	.....	.....	F. J. Ferreina,dos Amas,Com'd't

Note.—The originals, except for S. S. Tejo, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.72	754.9	30.17	766.2	34.7	1.5	93	SSE	7	3	.....	.....	9ks	.....	.....	.....	.....	.....	Astronomical Obs.
Wilna	29.79	756.6	30.23	767.8	33.1	0.6	100	Calm	0	0	.....	.....	10	.....	.....	.....	.....	Foggy	Astronomical Obs.
Dorpat	29.89	759.1	30.14	765.6	31.3	— 0.4	100	SW	4	2	.....	.....	10n	.....	.....	.....	.....	.....	Prof. Dr. Weihrauch.
St. Petersburg	30.12	765.0	30.13	765.4	30.7	— 0.7	93	SSE	16	7	.....	.....	10n	.....	.....	.....	.....	.....	Central Physical Obs.
Kuopio	29.64	752.8	29.97	761.3	31.3	— 0.4	100	SW	22	10	.....	.....	10	.....	.....	Blank	Blank	.....	Ch. Forsten.
Kieff	29.63	752.7	30.30	769.7	30.9	— 0.6	88	SE	4	2	.....	.....	10ks;n	.....	.....	.....	.....	.....	Physical Cabinet.
Nikolaiev	30.26	768.7	30.34	770.5	35.1	1.7	94	NE	4	2	.....	.....	10n	.....	.....	.....	.....	Light rain	Kurdakof.
Kertch	30.28	769.1	30.30	769.6	38.1	3.4	92	N	2	1	.....	.....	10	.....	.....	.....	.....	.....	Lagorio.
Moscow	30.00	761.9	30.60	777.3	17.1	— 8.3	94	SE	9	4	.....	.....	10s	.....	.....	.....	.....	.....	Meteorological Obs.
Lugan	30.18	766.5	30.39	772.0	27.3	— 2.6	83	E	31	14	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Archangel	30.21	767.3	30.23	767.8	26.6	— 3.0	96	S	13	6	.....	.....	6k	.....	.....	.....	.....	.....	Ogorodnikof.
Tiflis	28.88	733.5	30.35	770.8	42.6	5.9	87	SE	4	2	.....	.....	10	.....	.....	.....	.....	.....	Physical Observatory.
Astrakhan	30.77	781.6	30.69	779.5	23.2	— 4.9	71	E	25	11	.....	.....	10ks	.....	.....	Blank	Blank	.....	Sebastianof.
Kasan	30.63	778.0	30.93	785.7	14.7	— 9.6	87	SSE	11	5	.....	.....	10	.....	.....	.....	.....	.....	Physical Cabinet.
Orenburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Tschernischef.
Ekaterinburg	30.20	767.0	31.37	796.7	—31.4	—35.2	76	Calm	0	0	.....	.....	1s	.....	.....	.....	.....	.....	Meteorological Obs.
Nukuss	30.37	771.5	31.63	778.1	8.2	—13.2	52	NE	20	9	.....	.....	.0	.....	.....	.....	.....	.....	
Kasaly	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Bobrof.
Tashkend	28.71	729.1	30.53	775.5	28.8	— 1.8	90	NW	2	1	.....	.....	10n	.....	.....	.....	.....	.....	Michelson.
Barnaul	30.25	768.4	30.92	785.4	—47.6	—44.2	75	Calm	0	0	.....	.....	7	.....	.....	.....	.....	Light clouds	Meteorological Obs.
Yeniseisk	30.66	778.8	31.06	789.0	—47.0	—43.9	82	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Marks.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Usolzef.
Oorga	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Mossin.
Krotkowo*	30.43	773.0	30.95	786.1	11.7	—11.3	70	SE	7	3	.....	.....	9ks	.....	.....	.....	.....	.....	Cand. Fatjanow.
Peking, (China)	30.05	763.2	30.19	766.8	25.0	— 3.9	91	Calm	0	0	.....	.....	7n	.....	.....	.....	.....	.....	Physical Observatory.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Vladivostock	30.15	765.9	30.19	766.9	18.9	— 7.3	69	Calm	0	0	.....	.....	10n	.....	.....	.....	.....	.....	
Nikolaievsk, on the Amoor	.....	.....	.....	.....	—13.9	—25.5	.....	W	2	1	.....	.....	0	.....	.....	.....	.....	.....	

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall; for Krotkowo, the barometer reduced to freezing but not to sea level. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft. * N. 53° 47′, E. 48° 34′.

SPANISH SERIES.

Furnished by the cooperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Rave, Director.
Bilbao, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Manuel de Naveran
Burgos, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Domingo Martin y Perez.
Madrid, Royal Observatory	27.83	706.9	30.14	765.6	41.5	5.3	59	NE	29.8	13.33	.....	.....	10	.....	.....	0.744	18.9	Rainy	The Staff.
Murcia, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Olayo Diaz, Director.
Santiago, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	30.14	765.5	30.21	767.2	67.2	19.6	83	Calm	0	0	.....	0	4k	.....	E	0	0	Fair	Benito Vines, S. J.
San Fernando, Naval Obs'y	29.82	757.5	29.92	760.0	54.7	12.6	79	WNW	36.3	16.2	.....	0	10	.....	NW	0.164	4.2	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de PortoRico, W. I.	.....	.....	29.95	760.6	78.1	25.6	88	SE	0	0	.....	5kn	4kn	E	E	0.472	12.00	Cloudy	Leonardo de Tejeda, Chief of Engineers.

Note.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the cöoperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.78	756.5	29.83	757.6	34.9	1.6	.....	S	.....	.....	2	.....	10	.....	.....	0.157	4.0	.....	
Umea	29.75	755.7	29.80	757.0	34.9	1.6	100	Calm	.....	.....	0	.....	10	.....	.....	0.169	4.3	.....	
Hernosand	29.81	757.1	29.86	758.4	31.6	— 0.2	89	W	.....	.....	2	.....	2	.....	.....	0	0	.....	
Stockholm	29.75	755.7	29.93	760.2	34.2	1.2	89	Calm	.....	.....	0	.....	6	.....	.....	0	0	.....	
Wisby	29.90	759.5	29.96	761.0	38.1	3.4	93	S	.....	.....	4	.....	10	.....	.....	0.067	1.7	.....	
Sub-Series.																			
Upsala	29.87	758.7	29.95	760.6	32.9	0.5	92	SSW	3.4	1.5	.....	.....	3	.....	.....	0.013	0.32	.....	Dr. Hildebrandsson.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the cooperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.78	731.1	30.24	768.2	43.3	6.3	54	N	.....	.....	1	.....	2	.....	.....	0	0	Cloudy.....	The Observatory.
Zurich	28.67	725.7	30.26	768.5	40.3	4.6	70	W	.....	.....	2	.....	6	.....	.....	0	0	Cloudy.....	The Observatory.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—For Geneva the corresponding departures from the normal values are: Barometer, +3.7 mm; Thermometer, +3.8 cent.; Relative Humidity, —26 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	30.28	769.0	49.5	9.7	66	NE	2	1.0	.....	.....	3	.....	NE	0	0	.....	The Observatory.
Fao, (Persian Gulf)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salonica	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Valona	.....	.....	30.17	766.2	56.5	13.6	.....	SW	.....	.....	2	.....	2	.....	.....	0	0	Slightly cl'dy	B. Stefanidès.
Varna	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. Bertrand.
Sub-Series.																			Imperial Observatory.
Beirut, (Syria,) Lee Obs'y	29.89	759.2	30.00	762.1	59.5	15.3	59	NE	.....	.....	4	.....	4k;ks	.....	N	0.64	16.3	D. clouds	Prof. C. V. A. Van Dyck

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	29.44	747.8	29.51	749.5	22.7	— 5.2	80	NW	8	3.6	.....	10	.....	.....	.....	.....	.....	.....	Hon. J. Ferguson.
Brockville, Ontario	30.02	762.5	30.34	770.6	17	— 8.3	.....	W	1	0.4	.....	0	6s	.....	W	0.08	2.0	Fair	W. R. Bigg.
*Chatham, N. B	29.38	746.2	29.44	747.8	24	— 4.4	90	NW	14	6.3	.....	2k	8s	NW	NW	0.30	7.6	Cloudy	G. A. Blair.
Charlottetown, P. E. Island	29.21	741.9	29.25	742.9	29	— 1.7	97	N	20	8.9	.....	.....	10n	.....	Calm	0.950	24.13	Light snow.	H. J. Cundall, C. E.
Cornwall, Ontario	30.05	763.3	30.26	768.6	14.4	— 9.8	81	NW	.....	.....	4	.....	10s	.....	.....	0.026	0.66	Cloudy	James Smith, M. A.
Dalhousie, N. B	29.59	751.6	29.62	752.3	.....	.....	.....	W	.....	.....	2	.....	.....	.....	.....	0.20	5.1	Threatening	H. A. Johnson.
Esquimault, B. C	29.67	753.6	29.71	754.6	47.3	8.5	100	Calm	.....	.....	.....	.....	10n	.....	.....	0.35	8.9	Rainy	W. H. Bevis.
*Father Point, Quebec	29.84	757.9	29.86	758.4	8	—13.3	76	NE	40	17.9	.....	2cs	8n	N	N	0.16	4.1	Clearing	J. McWilliams.
Fredericton, N. B	29.53	750.0	29.60	751.8	24.5	— 4.2	68	NW	14.0	6.3	.....	.....	10n	.....	.....	0.36	9.1	Snowing	Prof. Harrison.
*Fort Garry, Manitoba	28.75	730.2	29.60	751.8	31	— 0.6	95	W	18	8.0	.....	5k	5n	W	W	0	0	Threatening	James Stewart.
Goderich, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	H. J. Strang, M. A.
Granton, Ontario	29.28	743.7	30.45	773.4	28.2	— 2.1	97	SW	.....	.....	2	1cs	0	NE	.....	0	0	Cloudy?	James Grant.
*Halifax, N. S	29.10	739.1	29.24	742.7	33	0.6	98	NW	15	6.7	.....	.....	10n	.....	.....	0.346	8.79	Light snow.	F. Allison, M. A.
Hamilton, Ontario	30.06	763.5	30.46	773.7	28.5	— 1.9	68	SW	.....	.....	3	0	.....	.....	.....	0	0	.....	Geo. Dickson, M. A
Heart's Content, N. F	29.33	745.0	30.36	771.1	30	— 1.1	100	SE	.....	.....	3	.....	10	.....	.....	0.18	4.6	Overcast	E. Weedon.
*Kingston, Ontario	30.01	762.2	30.37	771.4	19	— 7.2	85	W	6	2.7	.....	2c	0	Calm	.....	Inap.	Inap.	Clear	S. Woods, M. A.
Little Glace Bay, N. S	29.02	737.1	29.06	738.1	33.5	0.8	.....	SW	7	3.1	.....	.....	10n	.....	.....	0.35	8.9	Dull	C. H. Rigby.
*Montreal, Quebec	29.08	761.5	30.20	767.1	12	—11.1	73	W	20	8.9	.....	0	2s	.....	.....	0.12	3.0	Clear	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.64	752.8	30.40	772.1	12	—11.1	80	N	4	1.8	.....	0	0	.....	.....	0	0	Clear	Rev. R. Mosley.
Peterboro, Ontario	29.58	751.3	30.40	772.1	16.2	— 8.8	48	W	.....	.....	2	0	0	.....	.....	0	0	Clear	J. F. Jeffers, B. A.
Port Dover, Ontario	29.72	754.9	30.46	773.7	25	— 3.9	87	Calm	0	0	.....	5k	0	NW	.....	Inap.	Inap.	Fair	H. Morgan.
Port Hastings, N. S	29.06	738.1	29.10	739.1	35.1	1.7	.....	W	2	0.9	.....	.....	.....	.....	.....	0.10	2.5	Dark	Peter Grant.
Port Stanley, Ontario	29.78	756.4	30.47	773.9	27	— 2.8	87	W	8	3.6	.....	2k	0	NW	.....	0	0	Clear	M. Payne.
*Quebec, Quebec	29.08	753.9	30.03	762.7	7	—13.9	54	W	20	8.9	.....	0	0	.....	.....	0.30	7.6	Clear	Capt. Ashe, R. N
*Rockliffe, Ontario	29.84	757.9	30.35	770.9	5	—15.0	83	Calm	0	0	.....	0	0	.....	.....	0.04	1.0	Clear	W. H. McIntyre.
St. John, N. B	29.36	745.7	29.54	750.3	24	— 4.4	93	NW	15	6.7	.....	.....	10n	.....	.....	0.10	2.5	Light snow.	G. Murdock, C. E.
*Saugeen, Ontario	29.62	752.3	30.36	771.1	31	— 0.6	91	W	4	1.8	.....	5cs	0	.....	.....	0.05	1.3	Fair	K. Stewart.
Stayner, Ontario	29.56	750.8	30.39	771.9	25	— 3.9	76	Calm	0	0	.....	0	0	.....	.....	Inap.	Inap.	Clear	R. J. Cole.
Stratford, Ontario	29.07	738.4	30.43	772.9	28.0	— 2.2	87	NW	10.0	4.5	.....	1c	2s	NW	.....	0	0	Fine	C. J. MacGregor, M. A.
*Sydney, C. B	29.06	738.1	29.09	738.9	33	0.6	97	W	6	2.7	.....	.....	10n	.....	.....	0.26	6.6	Cloudy	T. C. Hill.
*Toronto, Ontario	30.03	762.7	30.44	773.2	24	— 4.4	84	W	8	3.6	.....	2ck	0	NW	.....	0.02	0.5	Clear	Magnetic Observatory.
Windsor, N. S	29.22	742.2	29.32	744.7	30.0	— 1.1	100	N	20	8.9	.....	.....	.....	.....	.....	.....	.....	Snowing	Prof. John E. Oram.
Woodstock, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Montgomery.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	31.0	— 0.6	.....	SE	.....	.....	.....	.....	10n	.....	.....	0.50	12.7	Snowing	John Delany
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

By authority of the SECRETARY OF WAR. UNITED STATES SERIES.

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.97	761.2	30.22	767.6	25	— 3.9	88	W	29	13.0	.....	2c	0	W	.....	0.13	3.3	Fair	
Alpena, Michigan	29.66	753.4	30.36	771.1	25	— 3.9	75	SW	2	0.9	.....	.....	10s	.....	SW	0.03	0.8	Cloudy	
Atlantic City, New Jersey	30.28	769.1	30.30	769.6	33	0.6	69	NW	7	3.1	.....	0	0	.....	.....	0	0	Clear	
Augusta, Georgia	30.25	768.3	30.44	773.2	44	6.7	76	Calm	0	0	.....	Haze	Sm'e	Calm	Calm	0	0	Smoky	
Baltimore, Maryland	30.32	770.1	30.37	771.4	39	3.9	47	NW	4	1.8	.....	0	Sm'e	.....	Calm	0	0	Clear	
Barnegat, New Jersey	30.24	768.1	30.26	768.6	33	0.6	61	NW	22	9.8	.....	0	0	.....	.....	0	0	Clear	
Bismarck, Dakota	27.95	709.9	29.67	753.6	33	0.6	69	SW	4	1.8	.....	Haze	8s	.....	Calm	0	0	Cloudy	
Boise City, Idaho	27.26	692.4	30.02	762.5	25	— 3.9	75	NE	1	0.4	.....	0	2s	.....	Calm	0	0	Fair	
Boston, Massachusetts	29.84	757.9	30.00	762.0	28	— 2.2	43	NW	24	10.7	.....	1k	0	NW	.....	0.01	0.3	Clear	
Brackettville, Texas	29.13	739.9	30.18	766.6	54	12.2	79	Calm	0	0	.....	0	5s	.....	Calm	0.07	1.8	Fair	
Breckenridge, Minnesota	28.84	732.5	29.85	758.2	34	1.1	79	S	21	9.4	.....	2cs	0	Calm	.....	0	0	Fair	
Brownsville, Texas	30.22	767.6	30.29	769.4	63	17.2	100	N	3	1.3	.....	.....	Fog	.....	Calm	0.37	9.4	Foggy	
Buffalo, New York	29.68	753.9	30.44	773.2	27	— 2.8	77	W	9	4.0	.....	2ck	0	W	.....	0	0	Fair	
Burkes, Arizona	.....	.....	.....	.....	50	10.0	45	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Burlington, Vermont	29.88	758.9	30.16	766.1	21	— 6.1	58	NW	16	7.2	.....	.....	10s	.....	N	0.03	0.8	Cloudy	
Cairo, Illinois	30.11	764.8	30.52	775.2	40	4.4	65	NE	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Camp Grant, Arizona	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Camp Verde, Arizona	26.83	681.5	30.32	770.1	46	7.8	77	Calm	.....	.....	.....	2k	0	Calm	.....	0	0	Fair	
Campo, California	27.36	694.9	29.89	759.2	51	10.6	100	Calm	0	0	.....	.....	10n	.....	Calm	0.15	3.8	Light rain	
Cape Hatteras, N. Carolina	30.34	770.6	30.35	770.9	45	7.2	54	NE	25	11.2	.....	0	0	.....	.....	0	0	Clear	
Cape Henry, Virginia	30.35	770.9	30.37	771.4	44	6.7	60	NW	40	17.9	.....	0	0	.....	.....	0	0	Clear	
Cape Lookout, N. Carolina	30.39	771.9	30.41	772.4	46	7.8	47	N	23	10.3	.....	0	0	.....	.....	0	0	Clear	
Cape May, New Jersey	30.29	769.4	30.32	770.1	38	3.3	63	NW	32	14.3	.....	0	0	.....	.....	0	0	Clear	
Charleston, South Carolina	30.34	770.6	30.41	772.4	54	12.2	43	NE	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Cheyenne, Wyoming	24.04	610.6	29.98	761.5	38	3.3	33	W	7	3.1	.....	0	2s	.....	W	0	0	Fair	
Chicago, Illinois	29.71	754.6	30.44	773.2	37	2.8	63	S	9	4.0	.....	0	Haze	.....	Calm	0	0	Clear	
Cincinnati, Ohio	29.80	756.9	30.49	774.4	34	1.1	79	Calm	0	0	.....	.....	Sm'e	.....	S	0	0	Dense smoke	
Cleveland, Ohio	29.72	754.9	30.50	774.7	32	0.0	79	SW	4	1.8	.....	0	Sm'e	.....	Calm	Inap.	Inap.	Clear	
Concho, Texas	28.37	720.6	30.11	764.8	48	8.9	85	Calm	0	0	.....	8cs	0	E	.....	0.01	0.3	Cloudy	
Corsicana, Texas	29.86	758.4	30.34	770.6	50	10.0	86	W	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Davenport, Iowa	29.77	756 1	30.45	773.4	33	0.6	79	Calm	0	0	.....	0	Sm'e	.....	Calm	0	0	Clear	
Denison, Texas	29.52	749.8	30.34	770.6	54	12.2	74	W	2	0.9	.....	5k	2s	W	W	0	0	Fair	
Denver, Colorado	24.80	629.9	30.02	762.5	34	1.1	44	S	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Detroit, Michigan	29.75	755.6	30.47	773.9	27	— 2.8	88	Calm	0	0	.....	Haze	Fog	Calm	Calm	0	0	Hazy	
Dodge City, Kansas	27.59	700.8	30.01	762.2	29	— 1.7	89	E	1	0.4	.....	0	Haze	.....	Calm	0	0	Clear	
Dubuque, Iowa	29.66	753.4	30.41	772.4	30	— 1.1	68	SW	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Duluth, Minnesota	29.31	744.5	30.09	762.0	34	1.1	79	W	16	7.2	.....	0	0	.....	.....	0	0	Clear	
Eagle Pass, Texas	29.50	749.3	30.26	768.6	59	15.0	94	SE	1	0.4	.....	.....	10n	.....	Calm	0.06	1.5	Light rain	
Eastport, Maine	29.51	749.5	29.58	751.3	26	— 3.3	88	NW	42	18.8	.....	.....	10s	.....	NW	0.24	6.1	Cloudy	
Erie, Pennsylvania	29.69	754.1	30.45	773.4	35	1.7	70	NW	6	2.7	.....	.....	10s	.....	NW	0.01	0.3	Cloudy	
Escanaba, Michigan	29.57	751.1	30.26	768.6	28	— 2.2	77	SW	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Florence, Arizona	28.39	721.1	29.99	761.7	65	18.3	48	E	.....	.....	.....	.....	10s	.....	E	0	0	Cloudy	
FortBayard, New Mexico	24.24	615.7	30.24	768.1	44	6.7	76	NE	8	3.6	.....	.....	10s	.....	Calm	0	0	Cloudy	
Fort Craig, New Mexico	25.71	653.0	.....	.....	44	6.7	68	NW	2	0.9	.....	.....	10s	.....	Calm	0	0	Cloudy	
Fort Gibson, Indian Ter	29.76	755.9	30.31	769.9	56	13.3	34	E	11	4.9	.....	.....	10s	.....	SW	0	0	Cloudy	
Fort Griffin, Texas	29.05	737.9	30.35	770.9	48	8.9	77	Calm	0	0	.....	.....	10s	.....	Calm	0	0	Cloudy	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	29.08	738.6	30.25	768.3	36	2.2	90	N	4	1.8	.....	0	8s	.....	SW	0	0	Fair	
Galveston, Texas	30.28	769.1	30.32	770.1	56	13.3	97	E	4	1.8	.....	5ck	2s	Calm	Calm	0.06	1.5	Cloudy	
Grand Haven, Michigan	29.75	755.6	30.42	772.7	40	4.4	73	SW	12	5.4	.....	5k	0	W	.....	0	0	Fair	
Indianapolis, Indiana	29.67	753.6	30.51	774.9	30	— 1.1	94	Calm	0	0	.....	.....	Fog	.....	.....	0	0	Foggy	
Indianola, Texas	30.30	769.6	30.32	770.1	59	15.0	100	NE	8	3.6	.....	.....	10s	.....	E	0.56	14.2	Cloudy	
Jacksboro, Texas	29.17	740.9	30.34	770.6	48	8.9	78	S	3	1.3	.....	.....	10s	.....	Calm	0	0	Cloudy	
Jacksonville, Florida	30.31	769.9	30.33	770.4	51	10.6	72	NW	6	2.7	.....	5k	0	W	.....	0	0	Fair	
Keokuk, Iowa	29.77	756.1	30.42	772.7	33	0.6	69	S	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Key West, Florida	30.19	766.8	30.23	767.8	66.0	18.9	84	NE	14	6.3	.....	2c	1ks	W	Calm	0	0	Fair	
Kittyhawk, North Carolina	30.35	770.9	30.38	771.6	43	6.1	51	N	24	10.7	.....	0	0	.....	.....	0	0	Clear	
Knoxville, Tennessee	29.42	747.3	30.49	774.4	35	1.7	62	NE	8	3.6	.....	0	0	.....	.....	0	0	Clear	
La Crosse, Wisconsin	29.52	749.8	30.29	769.4	34	1.1	70	S	16	7.2	.....	0	0	.....	.....	0	0	Clear	
La Mesilla, New Mexico	26.25	666.7	30.40	772.1	48	8.9	81	SE	1	0.4	.....	.....	10s	.....	Calm	0	0	Cloudy	
Laredo, Texas	.....	.....	.....	.....	63	17.2	89	NE	4	1.8	.....	.....	10s	.....	Calm	0.03	0.8	Cloudy	
Leavenworth, Kansas	29.46	748.3	30.36	771.1	32	0.0	89	N	1	0.4	.....	0	Fog	.....	.....	0	0	Clear	
Los Angeles, California	29.50	749.3	29.83	757.7	60	15.6	71	E	2	0.9	.....	.....	10s	.....	Calm	0.04	1.0	Cloudy	
Louisville, Kentucky	29.92	760.0	30.52	775.2	35	1.7	79	N	4	1.8	.....	Haze	Sm'e	Calm	Calm	0	0	Smoky	
Lynchburg, Virginia	29.73	755.1	30.44	773.2	42	5.6	50	W	2	0.9	.....	0	Haze	.....	Calm	0	0	Hazy	
Maricopa Wells, Arizona	.....	.....	.....	.....	56	13.3	63	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Marquette, Michigan	29.36	745.7	30.10	764.5	28	— 2.2	77	SW	8	3.6	.....	.....	10s	.....	Calm	0.03	0.8	Cloudy	
Mason, Texas	28.66	728.0	30.48	774.2	50	10.0	79	Calm	0	0	.....	0	5s	.....	.....	0	0	Foggy	
Memphis, Tennessee	30.13	765.3	30.47	773.9	42	5.6	56	NE	4	1.8	.....	0	Sm'e	.....	NE	0	0	Clear	
Milwaukee, Wisconsin	29.67	753.6	30.40	772.1	30	— 1.1	78	SW	10	4.5	.....	0	Haze	.....	.....	0	0	Clear	
Mobile, Alabama	30.32	770.1	30.36	771.1	52.5	11.4	93	N	3	1.3	.....	8c	2s	W	Calm	0	0	Cloudy	
Montgomery, Alabama	30.14	765.5	30.39	771.9	45.5	7.5	88	NE	4	1.8	.....	Haze	Fg:sm'	Calm	Calm	0	0	Foggy	
Morgantown, West Virginia	29.40	746.7	30.52	775.2	35	1.7	69	Calm	0	0	.....	0	Sm'e	.....	.....	0	0	Clear	
Mt. Washington, N. H.	23.15	588.0	29.51	749.5	—7	—21.7	100	NW	108	48.2	.....	.....	Fog	.....	NW	0.27	6.9	Foggy	
Nashville, Tennessee	29.92	760.0	30.50	774.7	36	2.2	70	NE	2	0.9	.....	.....	Sm'e	.....	Calm	0	0	Clear	
New Haven, Connecticut	30.07	763.8	30.19	766.8	31	— 0.6	59	NW	16	7.2	.....	0	0	.....	.....	Inap.	Inap.	Clear	
New London, Connecticut	30.07	763.8	30.12	765.0	30	— 1.1	57	NW	29	8.9	.....	0	0	.....	.....	Inap.	Inap.	Clear	
New Orleans, Louisiana	30.25	768.3	30.32	770.1	57	13.9	81	N	6	2.7	.....	2ck	5ks	NW	NW	0	0	Fair	
Newport, Rhode Island	29.99	761.7	30.04	763.0	32	0.0	59	W	28	12.5	.....	0	0	.....	.....	0	0	Clear	
New York, New York	30.08	764.0	30.27	768.8	32	0.0	50	NW	18	8.0	.....	0	0	.....	.....	0.02	0.5	Clear	
Norfolk, Virginia	30.34	770.6	30.40	772.1	41	5.0	56	N	16	7.2	.....	0	Haze	.....	Calm	0	0	Clear	
North Platte, Nebraska	27.19	690.6	29.86	758.4	31	— 0.6	69	S	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Olympia, Washington Ter.	29.72	754 9	29.76	755.9	49	9.4	93	S	2	0.9	.....	.....	10n	.....	Calm	0.24	6.1	Light rain	
Omaha, Nebraska	29.15	740.4	30.28	769.1	34	1.1	79	S	6	2.7	.....	0	Haze	.....	Calm	0	0	Clear	
Oswego, New York	30.03	762.7	30.35	771.0	28	— 2.2	77	NW	16	7.2	.....	5cs	0	NW	.....	0.03	0.8	Fair	
Pembina, Dakota	28.83	732.3	29.67	753.6	33	0.6	79	S	6	2.7	.....	.....	10s	.....	Calm	0	0	Cloudy	
Philadelphia, Pennsylvania	30.29	769.4	30.35	770.9	35	1.7	61	NW	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Phœnix, Arizona	.....	.....	.....	.....	60	15.6	60	Calm	.....	.....	.....	0	8s	.....	SE	0	0	Cloudy	
Pike's Peak, Colorado	17.84	452.2	30.06	763.5	21	— 6.1	43	NW	14	6.3	.....	2cs	0	N	.....	0	0	Clear	
Pioche, Nevada	24.10	612 1	29.87	758.7	37	2.8	53	S	4	1 8	.....	5k	0	S	.....	0	0	Fair	
Pittsburg, Pennsylvania	29.62	752.3	30.49	774.4	32	0.0	79	NW	3	1.3	.....	1c	0	NW	.....	0	0	Clear	
Port Huron, Michigan	29.73	755.1	30.45	773.4	26	— 3.3	88	SW	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Portland, Maine	29.81	757.2	29.86	758.4	25	— 3.9	50	NW	30	13.4	.....	1k	0	NW	.....	0.11	2.8	Clear	
Portland, Oregon	29.85	758.2	29.95	760.7	41	5.0	91	S	4	1.8	.....	.....	10s	.....	Calm	0	0	Cloudy	
Prescott, Arizona	24.85	630.7	30.18	766.6	40	4.4	48	W	.....	.....	.....	10cs	0	SW	.....	0	0	Cloudy	
Punta Rassa, Florida	30.28	769.1	30.30	769.6	58	14.4	87	NE	8	3.6	.....	8cs	0	SW	.....	0	0	Fair	
Red Bluff, California	29.54	750.3	29.90	759.4	44	6.7	76	N	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Rochester, New York	29.73	755.1	30.39	771.9	27	— 2.8	88	NW	11	4.9	.....	5k	0	NW	.....	Inap.	Inap.	Fair	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	BAROMETER. Corrected for instrum'tal error and temperature. Inches.	BAROMETER. Corrected for instrum'tal error and temperature. Millimeters	BAROMETER. Reduced to sea-level. Inches.	BAROMETER. Reduced to sea-level. Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Upper. From—	CLOUDS. Direction. Lower. From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	WEATHER.	OBSERVER.
Roseburg, Oregon	29.41	747.0	29.99	761.7	38	3.3	94	Calm	0	0	.....	5k	0	Calm	.....	0	0	Fair	
Sacramento, California	29.79	756.7	29.88	758.9	47	8.3	77	N	7	3.1	.....	.....	10ks	.....	SW	0	0	Cloudy	
St. Louis, Missouri	29.88	758.9	30.48	774.2	37	2.8	71	E	4	1.8	.....	0	Sm'e	.....	.....	0	0	Clear	
St. Marks, Florida	30.33	770.4	30.34	770.6	46	7.8	96	N	4	1.8	.....	.....	10s	.....	NW	0	0	Cloudy	
St. Paul, Minnesota	29.26	743.2	30.13	765 3	29	— 1.7	89	SE	1	0.4	.....	0	0	.....	.....	0	0	Clear	
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salt Lake City, Utah	25.77	654.6	30.10	764.5	35	1.7	70	NW	4	1.8	.....	.....	10s	.....	Calm	0	0	Cloudy	
San Antonio, Texas	29.63	752.6	30.22	767.6	60	15.6	88	NE	3	1.3	.....	.....	10s	.....	NE	0.34	8.6	Cloudy	
San Diego, California	29.87	758.7	29.94	760.5	60	15.6	82	SE	5	2.2	.....	.....	10n	.....	Calm	0.06	1.5	Light rain	
Sandusky, Ohio	29.77	756.1	30.50	774.7	30	— 1.1	89	SW	6	2.7	.....	2c	Haze	Calm	Calm	0	0	Fair	
Sandy Hook, New Jersey	30.24	768.1	30.29	768.6	34	1.1	61	NW	22	9.8	.....	0	0	.....	.....	0	0	Clear	
San Francisco, California	29.79	756.7	29.85	758.2	56	13.3	57	SW	4	1.8	.....	Haze	0	Calm	.....	0	0	Hazy	
Santa Fé, New Mexico	23.42	594.9	29.99	761.9	35	1.7	70	NE	8	3.6	.....	.....	10s	.....	Calm	0	0	Cloudy	
Savannah, Georgia	30.29	769.4	30.38	771.6	53	11.7	54	NE	7	3.1	.....	0	Sm'e	.....	.....	0	0	Clear	
Shreveport, Louisiana	30.17	766.3	30.40	772.1	46	7.8	92	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Smithville, North Carolina	30.38	771.6	30.41	772.4	47	8.3	55	N	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Springfield, Massachusetts	29.94	760.5	30.08	764.0	28	— 2.2	57	NW	14	6.3	.....	0	0	.....	.....	0	0	Clear	
Stockton, Texas	27.20	690.9	30.20	767.1	49	0.4	100	Calm	0	0	.....	.....	10s	.....	Calm	0.05	1.3	Cloudy	
Thatcher's Island, Mass	29.89	759.2	29.94	760.5	27	— 2.8	55	NW	48	21.5	.....	0	0	.....	.....	0.05	1.3	Clear	
Toledo, Ohio	29.75	755.6	30.47	773.9	33	0.6	79	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Tucson, Arizona	27.58	700.5	30.12	765.0	60	15.6	49	Calm	.....	.....	.....	8k	0	E	.....	0	0	Fair	
Tybee Island, Georgia	30.34	770.6	30.38	771.6	58	11.7	59	NE	16	7.2	.....	0	0	.....	.....	0	6	Clear	
Umatilla, Oregon	29.56	750.6	.....	.....	32	0.0	100	Calm	0	0	.....	.....	Fog	.....	Calm	0	0	Foggy	
Vicksburg, Mississippi	30.14	765.5	30.40	772.1	51	10.6	79	Calm	0	0	.....	2k	Fog	E	Calm	0	0	Fair	
Virginia City, Montana	24.20	614.2	29.74	755.4	28	— 2.2	77	SE	2	0.9	.....	5c	0	W	.....	0	0	Fair	
Visalia, California	29.48	748.8	29.85	758.2	49	9.4	78	N	5	2.2	.....	Haze	0	Calm	.....	0	0	Hazy	
Washington, D. C	30.29	769.4	30.41	772.4	37	2.8	58	NW	4	1.8	.....	0	Sm'e	.....	.....	0	0	Clear	
Wickenburg, Arizona	.....	.....	.....	.....	33	0.6	70	S	.....	.....	.....	0	8ks	.....	.....	0	0	Fair	
Wilmington, N. Carolina	30.35	770.9	30.43	772.9	47	8.3	48	N	16	7.2	.....	0	0	.....	.....	0	0	Clear	
Winnemucca, Nevada	25.65	651.5	30.01	762.2	20	— 6.7	70	NE	10	4.5	.....	2cs	0	SW	.....	0	0	Fair	
Wood's Holl, Mass	29.92	760.0	29.98	761.5	33	0.6	61	NW	25	11.2	.....	Haze	0	Calm	.....	0	0	Clear	
Yankton, Dakota	28.85	732.8	30.19	766.8	35	1.7	74	SW	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Yuma, Arizona	29.82	757.4	29.98	761.5	57	13.9	62	Calm	0	0	.....	.....	10s	.....	.....	0	0	Cloudy	
SUB-SERIES.																			
York Factory, B. A	30.34	770.6	30.39	771.9	—22.0	—30.0	.....	NW	2	0.9	.....	3c	0	N	.....	0	0	Fair	J. Fortescue, W. Wood.
Havana, Cuba, W. I	30.12	765.0	30.14	765.5	70	21.1	75	SE	1.2	0.5	.....	2ck	4ks	W	E	0	0	Fair	Chas. Hasselbrink.
Kingston, Jamaica, W. I	30.14	765.5	30.15	765.8	78	25.6	86	N	4	1.8	.....	8c	8n	Calm	N	0	0		James Gall.
Navassa, W. I	29.91	759.7	29.99	761.7	81	27.2	.....	NE	15	6.7	.....	.....	.....	.....	.....	0	0	Fair	F. M Everett.
St. Thomas, W. I	.....	.....	.....	.....	79	26.1	78	NE	4	1.8	.....	2c	2n	NE	.....	0.1	3.	.....	G. O. Gellich.
Paramaribo, D. Guiana, S. A	.....	.....	30.00	762.0	83	28.3	83	E	.....	.....	3	5k	7ks	E	.....	0	0	½ cloudy	C. J. Hering.
Batavia, Dutch Guiana, S. A	30.03	762.8	30.04	763.0	84.2	29	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0	Cloudy	Dr. H. Groot.
Medellin, Colombia, S. A	25.16	639.0	.....	.....	68.5	20.3	77	Calm	.....	.....	0	0	4ks	.....	.....	0	0	Fair	Thomas Herran.
Honolulu, Oahu, H. I	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Daniel Smith.
Makawao, Maui, H. I	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo; for Batavia, the barometer reduced to freezing but not to sea-level. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Bracketsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,600 (?) ft., or 1,096.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.6 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573,4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft. or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m. Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5,22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in; Pioche, 5.77 in.; Prescott, 5.86 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	BAROMETER. As reported.* Inches.	BAROMETER. As reported.* Millimeters.	BAROMETER. Attached Thermometer. Fahrenheit.	BAROMETER. Attached Thermometer. Centigrade.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 1—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Up'er From—	CLOUDS. Direction. Low'r From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	SEA-SWELL. CHARACTER.	SEA-SWELL. DIRECTION FROM—	WEATHER.	OBSERVER.
Navy Yard Mare Island, Cal.	29.87	758.7	52	11.1	53	11.7	61	NNE	4	1 8	....	.....	6	.....	Calm	0	0	.....	.....	Cloudy.....	
Navy Yard, Pensacola, Fla.	30.42	772.7	.....	.....	50	10.0	93	NNE	2	0.9	....	.....	5	.....	.....	0	0	.....	.....	D. clouds.....	
Navy Yard, Portsmouth, N.H	30.00	762.0	62	16.7	23	— 5.0	100	NW	17	7.6	.....	.....	.....	.....	.....	0	0	.....	.....	Clear	
Naval Hospital, Yokohama, Japan.....	30.10	764.5	56	13.3	49	9.4	71	E	.....	.....	4	.....	8ks	.....	NW	0.02	0.5	.....	.....	Cloudy.....	
Adams. S. 33° 20', W. 72° 45'.....	30.00	762.0	66	18.9	63	17.2	78	S	.....	.....	1	.....	2	.....	S&W	0	0	Long	S	D. clouds.....	
Alert. Yokohama, Japan.....	30.18	766.6	.....	.....	52	11.1	86	ESE	.....	.....	4	.....	10	.....	S&E	.....	.....	Smooth	.....	D. clouds.....	
Alliance, Smyrna, Turkey.....	30.27	768.8	65	18.3	52	11.1	54	ENE	.....	.....	1–2	.....	2	.....	N	.....	.....	.....	.....	Pleasant.....	
Ashuelot. Shanghai, China.....	30.20	767.1	58	14.4	50	10.0	100	Calm	.....	.....	0	.....	10	.....	Calm	.....	.....	.....	.....	D. clouds.....	
Canonicus, New Orleans, La.....	30.29	769.4	45	7.2	54	12.2	87	N	.....	.....	1	.....	10	.....	.....	.....	.....	.....	.....	Cloudy.....	
Colorado, New York, N. Y.....	30.23	767.8	34	1.1	34	1.1	62	NW	24	10.7	.....	.....	2	.....	NW	0	0	.....	.....	Light fog.....	
Despatch, Constantinople, Turkey.	30.38	771.6	66	18.9	58	14.4	53	SSE	.....	.....	0–1	.....	3	.....	S	.....	.....	.....	.....	Clear.....	
Essex, St. Paul de Loanda, Lower Guinea.	29.88	758.9	82	27.8	84	28.9	91	W	.....	.	2	.....	2	.....	.....	.....	.....	.....	.....	D. clouds.....	
Franklin, Norfolk, Va.....	30.44	773.2	44	6.7	44	6.7	45	NW	9.5	4.2	.....	.....	9†	.....	NW	0	0	.....	.....	Clear.....	
Guard, Lisbon, Portugal.....	30.16	766.1	60	15.6	56	13.3	63	N	.....	.....	3–5	.....	1	.....	Var.	.....	.....	.....	.....	Hazy.....	
Lackawana, Mare Island, Cal....	29.94	760.5	.....	.....	57	13.9	81	Calm	.....	.....	0	.....	6	.....	W	.....	.....	.....	.....	D. clouds.....	
Marion, Villefranche, France.....	30.13	765.3	56	13.3	56	13.3	100	ESE	.....	.....	1	.....	10	.....	Calm	Light	Light	Smooth	.....	D. clouds.....	
Michigan, Erie, Pa.....	29.92	760.0	56	13.3	35	1.7	80	NNW	.....	.....	2	.....	10	.....	NNW	.....	.....	.....	.....	Cloudy.....	
Monocacy, Amoy, China.....	29.96	761.0	63	17.2	62	16.7	100	E	.....	.....	2	.....	10	.....	S&E	0	0	Smooth	.....	Misty.....	
Monongahela, Aden, Arabia.....	30.04	763.0	82	27.8	82	27.8	96	ESE	.....	.....	1–2	.....	ck	.....	.....	.....	.....	Smooth	.....	D. clouds	
New Hampshire, Port Royal, S.C.....	30.54	775.7	.....	.....	51	10.6	72	NE	13	5.8	.....	.....	0	.....	.....	0	0	.....	.....	Blue sky.....	
Omaha, S. 27° 10', W. 71° 04'.....	30.04	763.0	69	20.6	69	20.6	75	S	1	0.4	.....	.....	0	.....	.....	0	0	Slight	S	Clear	
Onward, Callao, Peru.....	29.97†	761.2†	76	24.4	74	23.3	81	SE	.....	.....	4	.....	10	.....	.....	.....	.....	Long	W	Hazy.....	
Ossipee, Norfolk, Va.....	30.44	773.2	62	16.7	43	6.1	67	NNW	.....	.....	4	.....	0	.....	.....	.....	.....	.....	.....	Blue sky.....	
Palos, Shanghai, China.....	30.18	766.6	55	12.8	51	10.6	93	SE	.....	.....	1	.....	10	.....	.....	.....	.....	.....	.....	Sprinkling..	
Plymouth. Off Porto Plata, San Domingo.	30.12	765.0	79	26.1	78	25.6	??	SSE	.....	.....	2	.....	8	.....	S	.....	.....	Smooth	NE	Pleasant.....	
Powhatan, Norfolk, Va.....	.....	.....	.....	.....	44	6.7	100	NNW	20.6	9.2	....	.....	0	.....	.....	0	0	.....	.....	Clear.....	
Ranger, Shanghai, China.....	30.30	769.6	.....	.....	54	12.2	87	Calm	.....	.....	0	.....	10	.....	Calm	.....	.....	.....	.....	Rainy.....	
Rio Bravo, Brownsville, Texas.....	30.13	765.3	.....	.....	64	17.8	94	NW	.....	.....	2	.....	10	.....	.....	.....	.....	.....	.....	Foggy	
Santee, Annapolis, Md.....	30.45	773.4	66	18.9	38	3.3	54	NW	.....	.....	1	.....	1	.....	.....	0	0	.....	.....	Hazy.....	
Saratoga, Norfolk, Va.....	.....	.....	.....	.....	41	5.0	100	NNW	.....	....	2	.....	.....	.....	.....	0	0	.....	.....	Clear.....	
St. Louis, League Island, Pa	30.13	765.3	33	0.6	33	0.6	70	NW	7	3.1	.....	.....	0	.....	.....	0	0	.....	.....	Clear.	
Swatara, Norfolk, Va.....	30.44	773.2	.....	.....	45	7.2	61	NNW	.....	.....	4	.....	0	.....	.....	.....	.....	.....	.....	Squally.....	
Tennessee, Nagasaki, Japan.....	30.20	767.1	63	17.2	51	10.6	65	NE	.....	.....	1	.....	4	.....	Calm	0	0	Smooth	.....	D. clouds.....	
Trenton, Villefranche, France.....	30.10	764.5	.....	.....	51	10.6	93	E	3	1.3	.....	.....	10	.....	S&E	0.5	13.	.....	.....	Drizzling.....	
Vandalia, Genoa, Italy.....	30.05	763.3	55	12.8	50	10.0	32	N	.....	.....	2–3	.....	7	.....	.....	.....	.....	.....	.....	D. clouds.....	
Wabash, Boston, Mass.....	29.99	761.7	45	7.2	29	— 1.7	.....	NW	20	8.9	.....	.....	1	.....	Calm	0.01	0.3	.....	.....	D. clouds.. ..	
Wyoming, Washington, D. C.....	30.64†	778.2†	....	.....	40	4.4	.....	W	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	D. clouds.....	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. The position given for the Plymouth is that at noon, local time, instead of that at 7:56 a. m., Washington time.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Character.	Direction from—		
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			Capt. Howard.
S. S. City of Peking, N. 29° 21′, W. 162° 53′			30.31*	769.9*	68	20.0	100	W			4		5		W	Small	W	D. clouds	Lt. Z. L. Tanner, U.S.N.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio, Hong-Kong, China			29.94	760.5	72	22.2		ENE			6		2		NE			D. clouds	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

NOTE.—The originals give the wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. *Aneroid.

WHITE STAR LINE MARINE SERIES.																			
Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.																			
S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.																			
S. S. Belgic, N. 31° 20′, E. 133° 14′			30.14*	765.5*				ENE			5		Heavy		WSW	Light	NE	D. clouds	Capt. John Metcalf.
S. S. Gaelic, N. 32° 24′, E. 134° 30′			30.05†	763.3†	60	15.6	??	NE			4		k		SW	Smooth	SW	D. clouds	Capt. W. H. Kidley
S. S. Oceanic																			Capt. H. Parsell.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. * Corrected for temperature and elevation; instrumental error not known. †Aneroid.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.																			
Furnished by the coöperation of A. Schumacher & Co., Agents.																			
S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig, N. 44° 5′, W. 47° 53′			29.79	756.7	46.0	7.8	100	WSW			6		5		WSW	Rough	WSW	Partly o'cast	Capt. Undüts.
S. S. Nürnberg, N. 25° 15′, W. 84° 54′			30.27	768.8	75.5	24.2	86	NE			4		k		NE	Smooth	NE	D. clouds	Capt. A. Jaeger.
S. S. Ohio, Schiermonnikoog			30.07	763.8	45.0	7.2	46	W			2		s		W	Smooth		Hazy	Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds.

UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Lo'wr	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second	0—10.	0—10.	0—10.	From—	From—	Character.	Direction From—		
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, Philadelphia, Pa			30.32*	770.1*	40	4.4	82	W			5		0					Fine	Captain Sargent.
S. S. Ohio, N. 47° 31′, W. 44° 24′			29.76	755.9	41	5.0	91	SW			5		8?		SW	Mod'ate	WSW	Clear?	Captain Morrison.
S. S. Pennsylvania, N. 51° 06′, W. 14° 48′			30.41†	772.4†	48	8.9	100	WSW			4		8		SW	Heavy	N&W	Overcast	Captain Harris.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. * Aneroid † Corrected for temperature and elevation, instrumental error not known.

RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

S. S. Nederland																			Capt. Randle.
S. S. Switzerland, N. 46° 28′, W. 43° 17′			29.82*	757.4*				W	20	8.9		4		W	Heavy	W	D. clouds		Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

*Aneroid: regulated to standard at Antwerp.

ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

S. S. Hibernian																			
S. S. Scandinavian, Off Tangier Sound			30.25	768.3	40	4.4		NNW			4		9		NW			D. clouds	Capt. W. Richardson.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, Kennebunk, Maine			29.89	759.2	24	— 4.4	87	NW	20	8.9			0					Clear	Capt. James Jorgensen.

NOTE.—The originals for the schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^{d},) Chief Signal Officer. U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON DECEMBER 15, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSÉ mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.

1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:18 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:38 P. M. COPENHAGEN mean time.
1:38 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.

1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Barometer: Corrected for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours	.....	.....	30.17	766.4	57.9	14.4	78	E	.....	.....	3	.....	9	.....	.....	0.634	16.1	Covered	Michel.
Algiers	.....	.....	30.03	762.8	56.8	13.8	98	N	.....	.....	6	.....	10	.....	.....	0.850	21.6	Covered	Peter.
La Calle	.....	.....	29.92	759.9	59.4	15.2	89	ENE	.....	.....	3	.....	6	.....	.....	0.394	10.0	Cloudy	Fleury.
Tunis	.....	.....	29.89	759.3	60.3	15.7	86	E	.....	.....	3	.....	4	.....	.....	0.618	15.7	Cloudy	Jacques.
Sfax	.....	.....	29.90	759.5	53.6	12.0	.....	NNW	.....	.....	2	.....	9	.....	.....	0.197	5.0	Covered	Husson.
Saida	.....	.....	30.24	768.0	46.5	7.5	94	NE	.....	.....	4	.....	7	.....	.....	0.626	15.9	Very cloudy	Millot.
Tebessa	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Bassières.
Geriville	.....	.....	29.98	761.5	45.5	7.5	91	N	.....	.....	4	.....	8	.....	.....	1.142	29.0	Very cloudy	Lemaillot.
Laghouat	.....	.....	29.95	760.6	53.6	12.0	76	N	.....	.....	4	.....	8	.....	.....	0.197	5.0	Very cloudy	Guyot.
Biskra	.....	.....	29.91	759.6	60.6	15.9	61	NW	.....	.....	2	.....	10	.....	.....	0	0	Covered	Kuntz.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m.; or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

STATIONS.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Barometer: Corrected for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Agram	29.92	760.0	30.50	774.8	36.0	2.2	98	SW	.....	.....	2	.....	3	.....	.....	0	0	.....	Prof. Ivan Stozir
Uracow, I. R. Observatory	29.61	752.1	30.42	772.6	35.2	1.8	90	W	.....	.....	1	.....	1	.....	.....	0.004	0.1	.....	Dr. Wiersbiski.
Eperies	29.44	747.7	30.37	771.5	28.9	— 1.7	98	Calm	.....	.....	0	.....	8s	.....	.....	0.496	12.60	Foggy	Julius Mikolik.
Gratz	29.20	741.6	30.53	776.4	29.5	- 1.4	88	S	.....	.....	1	.....	0	.....	.....	0.189	4.8	.....	Andreas Rospini.
Hermannstadt	28.85	732.8	30.35	770.9	30.3	2.4	82	ENE	.....	.....	1	.....	10	.....	.....	0.134	3.40	.....	Prof. Reissenberger.
Kremsmünster	29.11	739.5	30.53	775.4	36.3	2.4	75	WNW	.....	.....	3	.....	5	.....	.....	0	0	.....	Prof. C. Wagner.
Lemberg	29.29	743.9	30.32	770.2	34.9	1.6	91	NW	.....	.....	2	.....	10	.....	.....	0.094	2.4	.....	Dr. T. Stanecki.
Pola	30.23	767.8	30.35	770.8	46.0	7.8	55	E	.....	.....	3	.....	8cs	.....	.....	0.139	3.52	.....	I.R.HydrographicOffice
Szathmar	29.93	760.2	30.41	772.4	36.9	2.7	87	SW	.....	.....	3	.....	10	.....	.....	0.118	3.0	.....	Johann Tamas, S. J.
Szegedin	30.11	764.9	30.41	772.4	38.1	3.4	90	NW	.....	.....	1	.....	10	.....	.....	0.051	1.30	.....	Karl Stancel.
Trieste	30.33	770.3	30.43	772.9	43.5	6.4	44	ENE	.....	.....	3	.....	0	.....	.....	0	0	Clear.....	P. Busin.
Vienna	29.75	755.6	30.48	774.1	39.2	4.0	64	W	.....	.....	4	.....	8	.....	.....	0	0	.....	I.R. Central Met. Obs'y
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

STATIONS.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Barometer: Corrected for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Arlon	29.02	737.2	30.62	777.8	31.6	— 0.2	97	W	.....	.....	0	.....	10	.....	.....	0.004	0.1	Dense fog....	Prof. M. Passau.
Brussels	30.32	770.0	30.53	775.4	37.9	3.3	90	SW	.....	.....	4	10	.....	NW	.....	0.047	1.20	.....	Royal Observatory.
Furnes	30.52	775.1	30.54	775.7	41.2	5.1	86	SW	.....	.....	2	.....	7	.....	.....	0.142	3.6	.....	M. E. de Cae.
Maeseyck	30.37	771.5	30.50	774.8	36.7	2.6	98	SSW	.....	.....	4	.....	10	.....	.....	0.083	2.1	Foggy	M. Pierrot.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	30.04	763.0	30.14	765.5	40.2	4.6	.....	SW	11	4.9	.....	.....	9	.....	.....	0.430	10.92	Misty	W. Boswell.
Ardrossan	30.14	765.5	30.15	765.8	46	7.8	.....	SW	.....	.....	4	.....	9	.....	.....	.....	.....	Raining	William McNeil.
Armagh, Observatory	.....	.....	30.12	765.0	43.5	6.4	.....	S	27	12.1	.....	.....	10	.....	.....	.....	.....	Raining	S. Call, for Dr. Robinson
Bidston, (Liverpool Obs.)	.....	.....	30.36	770.9	43.5	6.4	.....	S	13	5.8	.....	.....	10	.....	.....	.....	.....	Overcast	John Hartnup.
Birr Castle, (Parsonstown)	.....	.....	30.22	767.6	47.0	8.3	.....	SW	.....	.....	8	.....	10	.....	.....	.....	.....	Drizzling	J. Dreyer.
Bradford, Yorkshire	30.24	768.1	30.63	778.0	41.6	5.3	.....	SW	.....	.....	2	.....	10	.....	.....	0	0	Overcast	J. McLandsborough.
Bridgetown, (Barbados)	29.93	760.2	29.96	761.0	81.0	27.2	.....	NE	.....	.....	2	.....	2	.....	.....	.....	.....	D. clouds	Pvt. G. W. Roberts, A.
Cambridge, Observatory	.....	.....	30.45	773.4	37.5	3.1	.....	SW	.....	.....	1	.....	10	.....	.....	.....	.....	Overcast	H. Todd. [H. C.
Cardington	.....	.....	30.36	771.1	37.0	2.8	.....	SW	.....	.....	1	.....	9	.....	.....	.....	.....	Overcast	John McLaren.
Chatham, School M. E	30.37	771.4	30.50	774.7	40.2	4.6	.....	SW	.....	.....	1	.....	9	.....	.....	.....	.....	Overcast	Lt. W. G. Morris, R. E.
Dartmoor	28.99	736.3	30.52	775.2	41.0	5.0	.....	W	.....	.....	2	.....	10	.....	.....	.....	.....	Threatening	Alexander Watt.
Davos Platz (Switzerland)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Francis Redford, M. A.
Donaghadee	30.13	765.3	30.16	766.1	42	5.6	.....	WSW	.....	.....	3	.....	10	.....	.....	.....	.....	Raining	J. Mac Gowan.
Dover	30.49	774.4	30.52	775.2	43	6.1	.....	WSW	.....	.....	2	.....	4	.....	.....	.....	.....	¾ clouded	J. Costello.
Eccles, (near Manchester)	.....	.....	30.34	770.6	41.0	5.0	.....	SW	1.8	0.8	.....	.....	10	.....	.....	.....	.....	Gloomy	Thomas Mackereth.
Falmouth, Observatory	30.28	769.1	30.51	774.9	48.7	9.3	.....	SSW	.....	.....	3	.....	10	.....	.....	.....	.....	Overcast	The Staff.
Fort Napier, (Natal)	27.68	703.1	29.91	759.7	65.3	18.5	.....	E	.....	.....	3	.....	10	.....	.....	.....	.....	Overcast	Pvt. G. Salmon, A. H. C.
Free Town, (Sierra Leone)	.....	.....	29.91	759.7	84.0	28.9	.....	E	.....	.....	1	.....	3	.....	.....	.....	.....	D. clouds	
Galway, Queen's College	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	30.15	765.8	30.20	767.1	57.0	13.9	.....	NW	.....	.....	2	.....	10	.....	.....	.....	.....	Gloomy	Corpl. C. Aitken, A. H. C.
Glasgow, Observatory	29.94	760.5	30.14	765.5	43.1	6.2	.....	S	.....	.....	3	.....	10	.....	.....	.....	.....	Gloomy	D. G. Maclean.
Great Yarmouth	30.43	772.9	30.43	772.9	37	2.8	.....	W	.....	.....	2	.....	4	.....	.....	.....	.....	Misty	G. T. Watson.
Greenwich, Royal Obs'y	30.32	770.1	30.50	774.7	41.4	5.2	.....	WSW	.....	.....	1	.....	10	.....	.....	.....	.....	N'ly overcast	The Staff, for G. B. Airy.
Guernsey	30.33	770.4	30.56	776.2	47	8.3	.....	SW	.....	.....	1	.....	8	.....	.....	.....	.....	Showery	Dr. S. E. Hoskins, F.R.S.
Helston	.....	.....	30.46	773.7	49	9.4	.....	SW	.....	.....	2	.....	8k	.....	.....	0	0	Gloomy	M. P. Moyle.
Holyhead	30.22	767.6	30.27	768.8	48	8.9	.....	SW	.....	.....	6	.....	10	.....	.....	.....	.....	Drizzling	John Tilston.
Jersey	30.31	769.9	30.61	777.5	47.5	8.6	.....	SW	.....	.....	3	.....	8	.....	.....	Blank	Blank	Gloomy	J. Fisher.
Kew, Observatory	.....	.....	30.51	774.9	38.9	3.8	.....	W	5	2.2	.....	.....	9	.....	.....	.....	.....	Dense haze	The Staff.
Kingstown	30.21	767.3	30.24	768.1	47	8.3	.....	SSE	.....	.....	4	.....	10	.....	.....	.....	.....	Raining	George Mitchell.
Leicester, Museum	.....	.....	30.45	773.4	37.2	2.9	.....	SW	.....	.....	2	.....	10	.....	.....	.....	.....	Overcast	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.80	756.9	29.87	758.7	63.0	17.2	.....	SE	.....	.....	6	.....	8	.....	.....	.....	.....	D. clouds	Sgt. Fred. Travis, A. H.
Nairn	29.97	761.2	30.06	763.5	41	5.0	.....	W	.....	.....	1	.....	10	.....	.....	.....	.....	Overcast	W. D. Penny. [O.
Nassau, (Bahamas)	.....	.....	30.22	767.6	73.0	22.8	.....	NE	.....	.....	6	.....	8	.....	.....	.....	.....	D. clouds	C. S. Duncombe.
Nottingham, Observatory	30.21	767.3	30.41	772.4	38.7	3.7	.....	SSW	.....	.....	3	.....	10d	.....	WSW	0.039	0.99	Overcast	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.88	758.9	30.43	772.9	38.9	3.8	.....	SSW	.....	.....	2	.....	10	.....	.....	.....	.....	Foggy	Rev. Stephen Whitty
Oxford, Radcliffe Obs'y	.....	.....	30.47	773.9	41	5.0	.....	W	.....	.....	1	.....	10	.....	.....	.....	.....	Overcast	Mr. Lucas.
Plymouth	30.43	772.9	30.51	774.9	45.0	7.2	.....	SW	.....	.....	2	.....	10	.....	.....	.....	.....	Overcast	John Merrifield.
Roche's Point	30.27	768.8	30.31	769.9	49	9.4	.....	SW	.....	.....	6	.....	10	.....	.....	.....	.....	Raining	W. Kennedy.
Saint Ann's Head	30.22	767.6	30.39	771.9	50	10.0	.....	SW	.....	.....	5	.....	10	.....	.....	.....	.....	Misty	John C. Walker.
Sandwick Manse, (Orkneys.)	.....	.....	30.09	762.0	40.7	4.8	.....	S	10	4.5	.....	.....	10	.....	.....	.....	.....	Misty	Rev. C. Clouston, LL. D
Scutari, Cemetery, (Turkey)	.....	.....	30.28	769.1	52.6	11.4	.....	E	.....	.....	1	.....	9	.....	.....	.....	.....	D. clouds	Sergt. W. H. Lyne.
Sheffield	30.08	764.0	30.37	771.4	41.8	5.8	.....	SW	.....	.....	1	.....	8	.....	.....	0.03	0.8	Overcast	W. F. Cooper.
Silloth Rectory	30.20	767.1	30.23	767.8	45.0	7.2	87	NW	.....	.....	2	.....	10	.....	.....	0	0	Overcast	Rev. F. Redford, M. A.
Stonyhurst, Observatory	.....	.....	.....	.....	44.9	7.2	.....	SW	.....	.....	1	.....	8	.....	.....	.....	.....	Misty	Rev. S. J. Perry.
Stornoway, Lews C., (Hebr.)	.....	.....	29.95	760.7	45	7.2	.....	SSW	.....	.....	5	.....	10	.....	.....	.....	.....	Raining	John Smith.
Stratfield Turgiss	30.28	769.1	30.52	775.2	39.1	3.9	.....	SW	.....	.....	1	.....	6	.....	.....	.....	.....	D. clouds	Rev. C. H. Griffith, F.M.S
Thurso	.....	.....	30.01	762.2	40	4.4	.....	S	.....	.....	1	.....	10	.....	.....	.....	.....	Gloomy	John Trotter.
Truro, Royal Institution	.....	.....	30.50	774.7	50	10.0	.....	SW	.....	.....	0	.....	8	.....	.....	.....	.....	Gloomy	W. Newcombe.
Valencia, Observatory	.....	.....	30.28	769.1	52.2	11.2	.....	WNW	13	5.8	.....	.....	6	.....	.....	.....	.....	D. clouds	The Staff.
SUB-SERIES.																			
Calf of Man, (Isle of Man)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Henry Mercer.
Cape Good Hope, Obs'y	29.90	759.4	29.94	760.5	80.3	26.8	46	S	8	3.6	.....	0	4	.....	.....	.....	.....	.....	The Staff, for E. J. Stone.
Hobart Town, (Tasmania)	.....	.....	29.32	744.7	69.0	20.6	55	NW	.....	.....	5	.....	4k	.....	.....	.....	.....	Raining	Francis Abbott, F.R.A.S.
Leith, Restalrig Park	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Andrew Gibb.
Mauritius, Observatory	29.88	758.9	30.07	763.8	81.2	27.3	67	E	20.0	8.9	.....	0	2	.....	E	0.11	2.8	Squally	C. Meldrum.
Melbourne, Observatory	29.55	750.6	29.64	752.8	68.1	20.1	52	E	6	2.7	.....	.....	8	.....	NW	0	0	Dull	R. L. J. Ellery.
Monach L't-house, (Hebrides)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Youngclause.
North Unst, (Shetland Is.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Robert Burnet.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m.

MARINE SERIES. VESSELS.	Sea or swell. Height scale 0—9	Sea or swell. Direction from—		Observer.
S. S. Algeria	.....	.....	.....	Capt. W. Watson.
S. S. Batavia	.....	.....	.....	Capt. J. E. Mouland.
Ship Camperdown	.....	.....	.....	Capt. A. T. Miller.
Brig Catherine	.....	.....	.....	Capt. Adam Smith.
Barque Celeste	.....	.....	.....	Capt. D. F. McKechnie
S. S. Hibernia	.....	.....	.....	Capt. W. R. Cato
Barque Maroon	.....	.....	.....	Capt. A. T. Brown.
Ship Mikado	.....	.....	.....	Capt. C. C. Prehn.
S. S. Seine	.....	.....	.....	Capt. H. Manning.
Barque Sorata	.....	.....	.....	Capt. Jas. J. Price.
Schooner Traveller	.....	.....	.....	Capt. Alex Simpson
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
San José	26.19	665.2			68.0	20.0	86	SE			6		1ks;d		NE	0	0		Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	30.08	764.0	30.13	765.2	37.9	3.3	98	WSW			2		10					Foggy	
Fanöe	30.15	765.7	30.17	766 2	41.0	5.0	90	W			4		6						
Godthaab, (Greenland)	29.21	741.9	29.25	743.0	16.2	— 8.8	97	NNW			4		10					Snowing	
Stykkisholm, (Iceland)	29.48	748.9	29.53	750.0	31.5	— 0.3	100	SE			3		10					Snowing	
Thorshavn, (Faröe)	29.93	760.3	29.97	761.2	35.8	2.1	91	ESE			4		7						
Vestervig	29.92	760.0	30.09	764.3	37.8	3.2	87	WNW			6		4						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

Alençon, Normal School	30.19	764.4	30.65	778.4	42.8	6	87	NW			1		0			0	0	Clear	Collignon, Director.
Amiens, Normal School	30.44	773.2	30.56	776.1	42.4	5.8	88	W			3		0			0	0	Clear	Bonvarne, Director.
Avignon, Normal School	30.27	768.8	30.35	770.8	44.1	6.7	51	N			8		0			0	0	Very clear	Mr. Giraud, Director
Bar-sur-Seine	30.03	762.8	30.64	778.2	33.8	1.0	95	W			1		10			0	0	Covered	C. Saillard.
Beaumette Obs'y (Angers)	30.45	773.5	30.62	777.8	38.7	3.7	90	SW	0	0					NE	0	0		Albert Cheux.
Beauvais	30.31	769.9	30.61	777.6	36.1	2.3	89	WNW			1		2			0.099	1.76	Slightly cl'dy	Normal School.
Besançon	29.66	753.4	30.60	777.2	36.3	2.4	82	NE			2		0			0	0	Clear	Normal School.
Bourg-en-Bresse	29.67	753.6	30.62†	777.7†	35.4	1.9	96	N			2	2c		N		0	0	Slightly cl'dy	Normal School.
Bourges, Normal School	30.04	763.1	30.63	778.1	31.6	— 0.2	100	SW			2		5		SW	0	0	Cloudy	A. Wagner, Director.
Brest, Naval Observatory	30.29	769.4	30.51	775.0	46.6	8.1	80	S			2		8		S	0.020	0.50		The Staff.
Carcassonne, Normal School	30.08	764 1	30.48	774.2	41.0	5	90	W			4		0			0	0	Clear	Vateau, Director.
Caen	30.55	775.9	30.60	777.1	46.0	7.8	70	SSW			1		5		N	0.031	0.8	Cloudy	Normal School.
Chartres, Normal School	29.98	761.5	30.56	776.2	50.2	10.1		W			1		1		N	0	0		Lequin, Director.
Châlons-sur-Marne, N. Sch'l	30.27	768.9	30.61	777.6	31.1	— 0.5		N			3		10			0	0	Foggy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	29.17	741.0	30.60	777.2	38.5	3.6	68	NNE			2		2		NE	0	0	Slightly cl'dy	Alluard, Director.
Commercy, Normal School	29.70	754.3	30.64	778.2	32.9	0.5	92	W			4		10		W	0	0	Covered	Dr. Goulet, Director.
Commune de Gréasque*	29.18	741.2	30.32	770.2	47.8	8.8	48	W			2		2		W	0	0	¼ Covered	V. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	30.46	773.6	30.69	779.4	41.7	5.4	82	N			1		0			0	0	Clear	Mouillot, Director.
Le Mans, Normal School	30.31	769.8	30.63	778.1	36.9	2.7	72	N			2		0			0	0	Clear	Poirrier, Director.
Lons-l.-Saulnier, N. School	29.61	752.2	30.58	776.7	36.5	2.5	72	NE			2		0			0	0	Clear	Voudez, Director.
Lorient, Naval Observatory	30.55	776.0	30.65	778.5	46.8	8.2	70	SE			2		2		W	0	0	¾ Covered	T. Carré, Director.
Mâcon, Normal School	29.82	757.3	30.54	775.7	39.0	3.9	80	NNE			4		0			0	0	Clear	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	29.51	749.5	30.62	777.7	31.1	— 0.5	68	S			2		10		NE	0	0	Covered	Normal School.
Nismes, Normal School	30.14	765.6	30.35	771.0	46.0	7.8	61	N			8		0			0	0	Clear	Boyer, Director.
Orleans, Normal School	30.17	766.2	30.55	776.0	32.4	0.2	88	NE			2		0			0	0	Clear	Bernard, Director.
Paris, Observatory	30.37	771.3	30.66	778.8	32.4	0.2	90	NNW			1		10			0	0	Dense fog	National Observatory.
Privas	29.36	745.7	30.47	773.8	44.6	7	69	N			6		1		N	0	0	Clear	Normal School
Rochefort, Naval Obs'y	30.61	777.4	30.64	778.2	41.7	5.4	88	NNE			1		0			0	0	Blue sky	Lt. Decante, Director.
Rouen, Normal School	30.53	775.4	30.61	777.6	33.6	0.9	85	W			1		10			0	0	Covered	F. Lucard, Director.
Tarbes, Normal School	29.48	748.8	30.60	777.1	41 0	5	69	NNW			2		0			0	0	Clear	T. Hugues, Director.
Villefranche	29.82	757.4	30.57	776.5	39.6	4.2	88	W			4		2		Calm	0	0	Slightly cl'dy	Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.84	758.0	29.87	758.7	79.2	26.2										0.08	2.		L'Abbé Marchési.
Marseilles, Observatory			30.27	768.8	49.1	9.5	69	NNW			1		5			0	0	Partly cl'dy	The Staff.
Mont-Louis	25.07	636.7	30.38	771.7	31.5	— 0.3	16		9.3	4.17			4		NE	0	0		Mr. Falguère.
Nice			30.24	768.0	53.4	11.9	54	Calm			0		9			0	0	Covered	Dr. A. Niepce.
Paris, Montsouris Obs'y	30.32	770.1	30.60	777.1	30.4	— 0.9	98	SSE			1		10			0	0	Foggy	Marié Davy, Director.
Perpignan			30.41	772.4	47.7	8.7	40	NW	20.1	11.67			0			0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.	21.37	542.8			14.0	—10.0		NE			6		0					Clear	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.65	575.4			21.2	— 6.0		NE			6		0			0	0	Clear	Gen'l de Nansouty.
Saint Maur, (near Paris)	30.45	773.4	30.61	777.6	32.0	0.0	100	S			1		10			0	0	Dense fog	E. Renou.
Toulouse, Observatory	29.84	757.9	30.57	776.5	37.4	3.0	84	NW			3		6			0	0		The Staff.
Tours	30.41	772.5	30.61	777.5	32.7	0.4	98	W			1		10			0	0	Foggy	C. Marquet.
Versailles, (near Paris)			30.59	777.0	39.2	4.0	87	NW			1		0			0.013	0.32	Very clear	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.07	763.8	30.10	764.4	51.4	10.8	97	NE	2.2	1.0			10k			0.008	0.2	Covered	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published. At Mirecourt and Rochefort the cloud directions are apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,686.50 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône. †Probably 30.59 inches, and 777.0 mm.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg																			
Berlin	30.19	766.8	30.36	771.1	40.6	4.8	84	SW			1		8						Prof. Dr. Hoh.
Breslau	29.86	758.5	30.40	772.2	36.7	2.6	83	WNW			2		9			0.022	0.56		Prof. Arndt.
Carlsruhe	30.12	765.1	30.58	776.7	38.1	3.4	68	SW			2		0			0	0		Royal University Obs'y.
Cassel	29.92	760.0	30.54	775.7	40.5	4.7	74	WSW			2		8	W		0.134	3.4		Albert Senz.
Crefeld	30.31	769.9	30.48	774.1	39.2	4.0	88	SW			3		9			0	0		Dr. H. Möhl.
Emden	30.37	771.5	30.41	772.4	39.9	4.4	94	W			3		10	N		0.04	1.		Director Lose.
Frankfort on the Main	30.19	766.8	30.58	776.6	39.6	4.2		SSW			1		4			0.118	3.0		Prof. Prestel.
Friedrichshafen	29.10	739.0	30.61	777.4	37.4	3.0	70	NNE			4		0			0.004	0.1		Physical Society.
Hamburg	30.24	768.1	30.31	769.9	37.9	3.3	92	WSW			3		8k	WNW		0	0		M. Wilhelm.
Kiel	30.21	767.3	30.23	767.7	38.3	3.5	90	SW			2		7			0.035	0.9	Fair	Captain F. Hegemann.
Königsberg, (Prussia)	30.15	765.8	30.23	767.8	34.0	1.1	93	SW								0.035	0.90		Prof. G. Karsten.
Köslin			30.23	767.7	36.5	2.5		SW			2		4			0.157	0.40	Cloudy	Prof. E. Luther.
Leipsic, Observatory	30.04	762.9	30.48	774.1	38.5	3.6	83	WSW			3		5	W		0.059	1.5		H. Müller.
Memel, Naval School	30.16	766.1	30.21	767.3	32.9	0.5	100	S			2		10			0	0		Prof. Bruhns.
Neufahrwasser	30.23	767.7	30.24	768.1	37.6	3.1	88	SW			2		10					Dense fog	Reinbrech von Skalweit.
Posen	30.06	763.5	30.36	771.1	37.0	2.8	89	NW			2					0	0		A. Lothes.
Strassburg Obs., (in Alsace	30.04	763.1	30.63	777.9	37.2	2.9	84	Calm			0		0			0.019	0.49	Covered	Dr. Magener.
Stuttgart	29.57	751.0	30.56	776.2	37.0	2.8	75	S			0		2			0.004	0.10		Dr. Schur.
Treves, (Trier)	29.93	760.3	30.47	773.8	37.0	2.8	83	W			3		10			0	0		Prof. Schoder.
Weissenburg, (Bavaria)	28.98	736.2	30.57	776.5	35.8	2.1	80	Calm	0	0			10			0.001	0.02	Foggy	Prof. Flesch.
Wustrow, Naval School	30.25	768.3	30.29	769.4	39.0	3.9	87	W			6		10		W	0.055	1.4	Covered	Dr. Von Bebber.
German Naval Series.																0.105	2.67	Covered	E. F. Schütz.

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet: Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4. Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines, Königsberg, Posen and Wustrow in cubic zolls. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.92	759.9	30.32	770.0	52.9	11.6		NE			2							½ Clear	Dr. J. F. J. Schmidt.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and wind-force; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.98	761.6	30.03	762.8	76.0	24.4	48	ENE	9.0?	4.0?			0			0	0	Blue sky	
Deesa	29.54	750.3	30.02	762.6	76.8	24.9	30	NW					0			0	0	Blue sky	
Bombay	29.89	759.1	29.92	760.1	81.0	27.2	82	NW	12.0	5.4			10	SW	SSW	0	0	Overcast	
Poona	27.94	709.6	29.95	760.7	77.9	25.5	65	E					10	SE		0	0	D. clouds	
Lahore	29.30	744.4	30.09	764.3	55.5	13.1	78	Calm	0.6	0.3			6			0	0	Cloudy	
Belgaum	27.42	696.3	29.97	761.2	74.9	23.8	69	SE	2.0	0.9			4	W		0	0	D. clouds	
Bangalore																			
Roorkee	29.10	739.2	30.05	763.3	56.8	13.8	87	Calm	1.1	0.5						0	0	Foggy	
Agra	29.48	748.9	30.07	763.8	64.8	18.2	44	W								0	0		
Trichinopoly																			
Nagpur	28.94	735.1	30.00	761.9	76.1	24.5	65	Calm	2.4	1.1			5	NW		0	0	D. clouds	
Madras																			
Lucknow	29.70	754.4	30.09	764.4	58.4	14.7	81	Calm	1.0	0.4			0			0	0	Blue sky	
Allahabad	29.73	755.2	30.06	763.5	59.2	15.1	79	Calm	0.9	0.4			0			0	0	Blue sky	
Patna	29.90	759.6	30.09	764.3	63.0	17.2	66	W	1.0	0.4			2	W	W	0	0		
Hazaribagh	27.97	710 5	30.08	764.1	56.3	13.5	60	Calm	6.6	3.0			1		W	0	0	Blue sky	
Cuttack	29.98	761.4	30.06	763.5	75.0	23.9	52	ESE	0.7	0.3						0	0	Blue sky	
Calcutta (Alipore)	30.01	762.2	30.03	762.7	63.8	17.7	58	WNW	3.0	1.3			0			0	0	Blue sky	
Goalpara	29.56	750.9	29.97	761.1	70.0	21.1	59	Calm	0.2	0.1			0			0	0	Blue sky	
Chittagong	29.89	759.3	29.99	761.7	67.8	19.9	68	N	3.5	1.6			0			0	0	Blue sky	
Sibsagar	29.67	753.7	30.02	762.6	61.8	16.6	90	ENE	0.4	0.2			0			0	0	Blue sky	
Rangoon																			
Jubbulpore	28.66	727.9	30.07	763.7	66.4	19.1	57	NE	1.3	0.6			0			0	0	Blue sky	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,892.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 1—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	22.31	566.7	30.52	775.2	16.2	— 8.8	18	ENE	.....	.....	2	.....	0	.....	.....	0	0	.....	Ab. Dom. Mongini.
Stelvio	22.29	566.2	30.57	776.5	11.3	—11.6	.....	ENE	.....	.....	1	.....	0	.....	.....	0	0	.....	Signora Ernesta Manfredi.
Udine	29.99	761.7	30.42	772.6	43.3	6.3	51	SE	3.1	1.4	.....	.....	5	.....	.....	0.087	2.2	.....	Prof. Giovanni Clodig.
Padua	30.30	769.5	30.41	772.4	45.3	7.4	65	NE	8.7	3.9	.....	.....	8	W	.....	0	0	.....	Prof. Dott. Lorenzoni.
Vicenza	30.22	767.6	30.42	772.7	43.5	6.4	63	N	0	0	.....	.....	3	W	.....	0	0	.....	Conte Alm. Da Schio.
Verona	30.15	765.8	30.38	771.7	46.6	8.1	73	ESE	0	0	.....	.....	0	.....	.....	0	0	.....	Dott. B. Bertoncelli.
Bergamo	29.05	737.9	30.44	773.1	42.8	6.0	59	SW	.....	.....	2	.....	0	.....	.....	0	0	.....	Prof. Trionfini Carlo.
Domodossola	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Giuseppe Calza.
Milan	29.90	759.5	30.45	773.4	42.8	6.0	.....	SW	.....	.....	1	.....	4	WNW	.....	0	0	.....	Ab. Gio. Capelli.
Pavia	30.09	764.3	30.46	773.6	33.8	1.0	94	SW	.....	.....	1	.....	10	.....	.....	0	0	.....	Prof. Gio. Cantoni.
Moncalieri	29.52	749.7	30.47	773.9	41.4	5.2	69	ENE	3.1	1.4	.....	.....	2	.....	.....	0	0	.....	Prof. P. F. Denza.
Mondovi	28.47	723.0	30.47	773.8	38.8	3.8	44	NNW	.....	.....	2	.....	3	SW	.....	0	0	.....	Prof. D. C. Bruno.
Porto Maurizio	30.08	764.1	30.31	769.9	53.8	12.1	18	NNE	.....	.....	6	.....	9	.....	.....	0	0	.....	Prof. L. Vassallo.
Genoa	30.15	765.9	30.33	770.4	46.6	8.1	49	N	14.3	6 4	.....	.....	8	N	.....	0	0	.....	Prof. G. M. Garibaldi.
Piacenza	30.20	767.0	30.47	773.9	34.0	1.1	96	W	8.7	3.9	.....	.....	10	.....	.....	0	0	.....	Dott. G Manzi.
Parma	30.11	764.8	30.45	773.3	40.5	4.7	74	SW	.....	.....	4	.....	7	.....	.....	0	0	.....	Prof. P. Pigorini.
Florence	30.07	763.8	30.34	770.6	49.1	9.5	60	NE	.....	.....	6	.....	10	.....	.....	0.079	2.0	.....	Cav. F Meucci.
Leghorn	30.17	766.2	30.25	768.4	46.0	7.8	57	NE	19.2	8.6	.....	.....	10	.....	.....	0	0	.....	Prof. P. Monte.
Siena	29.03	737.3	30.28	769.1	46.2	7.9	69	NE	17.4	7.8	.....	.....	10	NE	.....	0.114	2.9	.....	Prof. L. Toscani.
Urbino	28.75	730.3	30.38	771.6	40.5	4.7	98	N	.....	.....	2	.....	10	.....	.....	0.476	12.1	.....	Prof. P. Serpieri.
Pesaro	30.29	769.3	30.34	770.6	49.3	9.6	72	NE	19.2	8.6	.....	.....	10	NE	.....	0.142	3.6	.....	Prof. Luigi Guidi.
Ancona	30.23	767.7	30.34	770.5	49.3	9.6	67	WSW	.....	.....	4	.....	10	WSW	.....	0.591	15.0	.....	Prof. F. DeBosis.
Grosseto	30.10	764.5	30.21	767.4	50.0	10.0	73	NNE	.....	.....	6	.....	9	NE	.....	0	0	.....	Avv. P. Ponticelli.
Rome	30.04	763.0	30.22	767.6	52.0	11.1	85	N	8.1	3.6	.....	.....	10	.....	.....	0.047	1.2	.....	Prof. P. A Secchi.
Naples, O. U.	29.97	761.2	30.17	766.4	57.0	14.2	67	N	.....	.....	4	.....	10	ESE	.....	0	0	.....	Prof. L. Palmieri.
Lecce	30.01	762.2	30.27	768.8	55.9	13.3	84	SE	1.8	0.8	.....	.....	10	.....	.....	0.480	12.2	.....	Prof. C. De Giorgi.
Cosenza	29.30	744.2	30.21	767.3	55.4	13.0	73	NW	0.7	0.3	.....	.....	10	.....	.....	0.130	3.3	.....	Prof. F. D. Conti.
Cagliari	29.76	756.0	29.96	761.0	57.2	14.0	87	SE	.....	.....	4	.....	10	SE	.....	0.528	13.4	.....	Prof. A. Pacinotti.
Riposto, (Sicily)	30.04	762.9	30.08	764.1	59.0	15.0	89	SE	.....	.....	4	.....	10	.....	.....	0.114	2.9	.....	Prof. F. Cafiero.
Palermo	29.74	755.4	30.00	762.0	57.7	14.3	80	E	4.3	1.9	.....	.....	10	.....	.....	0.276	7.0	.....	Prof. G. Cacciatore.
Caltanissetta	28.00	711.3	29.98	761.5	51.4	10.8	86	E	.....	.....	6	.....	10	NW	.....	0.197	5.0	.....	Prof. A. Pagani.
Syracuse	29.97	761.1	30.04	763.0	60.1	15.6	75	SE	.....	.....	4	.....	10	SE	.....	0.118	3.0	.....	Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.62	752.4	30.18	766.5	54.3	12.4	69	NE	7.4	3.3	.....	.....	10	.....	.....	0.024	0.6	.....	Prof. F. Brioschi.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,543.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Siena, 348.5 m., or 1,143.3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Tokei (Yeddo)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	The Observatory.
Tokei (Yeddo) University	30.19	766.8	30.30	769.5	41.5	5.3	96	.....	.....	.....	.....	4c	.....	.....	.....	0	0	Fair	Prof P. V. Veeder.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Señor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Aguascallentes	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	I. N. Marin, M. D.
Córdoba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	C. Peña, M. D.
Cuernavaca	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	L. Castillo, A. E.
Guadalajara	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. L. Perez.
Guanajuato	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. V. Fernandez.
Leon	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. M. Leal.
Mexico	23.18	588.9	30.33	770.2	50.4	10.2	86	Calm	0	0	.....	.....	10ks	.....	.....	0	0	Covered	Central Observatory.
Orizaba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	N. N.
Orizaba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	I. Orozco, M. D.
Pabellon, (Aguascalts)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. V. de Leon, M. E.
Puebla	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. B. Gonzalez.
Toluca	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. C. Velazquez.
Tlacotalpam	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. F. R. Bayly.
San Luis Potosi	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	G. Barroeta, M. D.
Vera-Cruz	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. J. Rossell.
Zacatecas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. A. Bonilla, M. E.
Puebla, (Catholic Institute)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	P. Spina. [M. M, D. D.
Morelia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Tena, F. L. Páramo

NOTE.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,293 m., or 7,522.9 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabell m, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft; San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

Furnished by the cooperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	30.51	775.0	30.51	775.0	41.7	5.4	.....	SW	.....	.....	4	.....	.....	.....	.....	0	0	.....	
Groningen	30.31	769.9	30.37	771.3	40.3	4.5	.....	W	.....	.....	2	.....	.....	.....	.....	0.071	1.8	.....	
Helder	30.36	771.2	30.36	771.2	44.6	7.0	.....	WSW	.....	.....	4	.....	.....	.....	.....	0.079	2.0	.....	
Hellevoetsluis	.....	.....	30.48	774.1	42.8	6.0	90	WSW	.....	.....	3	.....	.....	.....	.....	.....	.....	.....	
Utrecht	30.41	772 3	30.45	773.5	40.6	4.8	90	WSW	.....	.....	3	.....	8	.....	.....	0.016	0.4	Very cloudy	H. v d Brink.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	29.99	761.7	30.04	763.1	33.8	1.0	89	SSE	4.9	2.2	.....	.....	3	.....	.....	0	0	.....	
Brönö	29.80	756.9	29.84	757.9	33.8	1.0	81	S	7	3	.....	.....	8	.....	.....	0	0	.....	
Christiania	29.86	758.4	30.02	762.4	24.1	— 4.4	91	E	4	2	.....	.....	10	.....	.....			Snowing	
Tromsö	29.60	751.8	29.64	752.9	36.0	2.2	45	SE	18	8	.....	.....	5	.....	.....	0	0	.....	

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	30.29	769.4	30.48	774.2	63.7	17.6	94	ESE	2.5	1.1	.....	.....	8	.....	.....	0.197	5.0	.....	Dr. J. A. Sampaio.
Campo Major	29.32	744.6	30.37	771.3	48.2	9.0	51	NNE	11.2	5.0	.....	.....	2	.....	.....	0	0	.....	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.30	769.5	30.37	771.3	67.8	19.9	54	SW	5.6	2.5	.....	.....	1	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	30.01	762.3	30.38	771.6	49.1	9.5	38	NE	22.4	10.0	.....	.....	2	NW	.....	0	0	.....	The Staff.
Ponta Delgada, (Azores)	30.46	773.7	30.53	775.5	67.3	19.6	87	SW	.....	.....	.....	.....	4	.....	.....	0.661	16.8	.....	

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

Naval Series. Vessels.	Sea or swell. Height scale 0–9	Sea or swell. Direction from—		
S. S. Bartholomew Dias	.....	.....	.....	R, A. T. Pinha, Com'd't.
S. S. India	.....	.....	.....	A. D. Pedroso, Com'd't.
S. S. Mindello	.....	.....	.....	J. F. R. R. Bastos, Com'd't.
S. S. Sado	.....	.....	.....	A. N. P. Sampaio, Com'd't.
S. S. Sá da Bandeira	.....	.....	.....	F. Texeira da Silva, Com'd't.
S. S. Tejo	.....	.....	.....	F. J. Ferreina, dos Amas, Com'd't

Note.—The originals, except for S. S. Tejo, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.88	759.0	30.33	770.4	33.1	0.6	92	WSW	13	6	.....	.....	10ks	.....	.....	.....	.....	.....	Astronomical Obs.
Wilna	29.79	756.7	30.23	767.9	32.5	0.3	96	Calm	0	0	.....	.....	10	.....	.....	.....	.....	Snowing	Astronomical Obs.
Dorpat	29.99	761.7	30.24	768.2	32.4	0.2	97	SSE	2	1	.....	.....	10n	.....	.....	.....	.....	.....	Prof. Dr. Weihrauch
St. Petersburg	30.28	769.0	30.29	769.4	32.7	0.4	95	S	7	3	.....	.....	10n	.....	.....	.....	.....	.....	Central Physical Obs.
Knopio	29.80	756.8	30.13	765.4	32.5	0.3	100	SSE	13	6	.....	.....	10	.....	.....	.....	.....	Snowing	Ch. Forsten.
Zieff	29.69	754.2	30.37	771.3	29.3	— 1.5	92	SSE	9	4	.....	.....	10n;ks	.....	.....	.....	.....	Foggy	Physical Cabinet.
Nikolaiev	30.43	772.9	30.50	774.7	34.5	1.4	82	ENE	9	4	.....	.....	10n	.....	.....	.....	.....	.....	Kurdakof.
Kertch	30.48	774.1	30.50	774.6	40.1	4.5	82	ENE	9	4	.....	.....	10	.....	.....	.....	.....	.....	Lagorio.
Moscow	30.11	764.8	30.72	780.2	16.3	— 8.7	88	SE	9	4	.....	.....	10s	.....	.....	.....	.....	.....	Meteorological Obs.
Lugan	30.43	773.0	30.65	778.6	22.6	— 5.2	76	ESE	31	14	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Archangel	30.33	770.4	30.35	770.9	29.1	— 1.6	96	SSW	27	12	.....	.....	10	.....	.....	.....	.....	.....	Ogorodnikof.
Tiflis	29.24	742.8	30.74	780.9	37.8	3.2	90	Calm	0	0	.....	.....	10	.....	.....	.....	.....	.....	Physical Observatory.
Astrakhan	31.17	791.8	31.09	789.7	15.4	— 9.2	69	ESE	22	10	.....	.....	10ks	.....	.....	Blank	Blank	.....	Sebastianof.
Kasan	30.90	784.8	31.21	792.7	5.0	—15.0	73	S	11	5	.....	.....	10	.....	.....	.....	.....	.....	Physical Cabinet.
Orenburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Tschernischef.
Ekaterinburg	30.16	766.1	31.26	794.1	— 5.8	—21.0	62	W	4	2	.....	.....	9	.....	.....	.....	.....	.....	Meteorological Obs.
Nukuss	30.91	785.0	31.18	792.0	— 5.4	—20.8	46	NE	18	8	.....	.....	0	.....	.....	.....	.....	.....	
Kasaly	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Bobrof.
Tashkend	29.06	738.0	31.00	787.4	7.5	—13.6	83	NW	4	2	.....	.....	0	.....	.....	.....	.....	.....	Michelson.
Barnaul	30.61	777.5	31.30	795.0	—55.5	—48.6	73	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Meteorological Obs.
Yeniseisk	30.87	784.0	31.27	794.3	—45.2	—42.9	82	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Marks.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Usolzef.
Oorga	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Mossin.
Krotkowo*	30.73	780.6	31.26	794.1	— 0.2	—17.9	48	SSE	13	6	.....	.....	10	.....	.....	.....	.....	.....	Cand. Fatjanow.
Peking, (China)	29.99	761.7	30.13	765.3	27.9	— 2.3	86	Calm	0	0	.....	.....	10n	.....	.....	.....	.....	.....	Physical Observatory
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Vladivostock	30.04	763.1	30.08	764.1	35.8	2.1	77	Calm	0	0	.....	.....	10n	.....	.....	.....	.....	.....	
Nikolaievsk, on the Amoor	.....	.....	.....	.....	—16.1	—26.7	.....	Calm	0	0	.....	.....	0	.....	.....	.....	.....	Lunar corona	

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall; for Krotkowo, the barometer reduced to freezing but not to sea level. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft. * N. 53° 47′, E. 48° 34′.

SPANISH SERIES.

Furnished by the cooperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Rave, Director.
Bilbao, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Manuel de Naveran
Burgos, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Domingo Martin y Perez.
Madrid, Royal Observatory	28.08	713.2	30.41	772.4	42.6	5.9	47	NE	4.5	2.00	.....	0	0	.....	.....	0	0	Clear	The Staff.
Murcia, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Olayo Diaz, Director.
Santiago, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	30.14	765.6	30.21	767.4	66.0	18.9	81	SE	1.8	0.8	.....	1ck	2k	WSW	E	0	0	Fair	Benito Vines, S. J.
San Fernando, Naval Obs'y	30.18	766.5	30.28	769.1	49.8	9.9	79	NNE	13.1	5.9	.....	0	10	....	NE	0.009	0.2	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de PortoRico, W. I.	.....	.....	29.95	760.8	79.5	26.4	82	NE	13.2	5.90	.....	5kn	4kn	NE	NE	0.374	9.50	Cloudy	Leonardo de Tejeda, Chief of Engineers.

Note.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

SWEDISH SERIES.

Furnished by the cöoperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	30.00	762.0	30.04	763.0	27.3	— 2.6		Calm			0		10			Inap.	Inap.	Snowing	
Umea	29.95	760.8	30.00	762.1	30.2	— 1.0	100	SW			2		9			0	0		
Hernosand	29.9"	760.8	30.00	762.1	24.6	— 4.1	96	WSW			2		7			0	0		
Stockholm	29.84	758.0	30.02	762.5	33.1	0.6	92	SW			2		10			0.059	1.5		
Wisby	30.01	762.3	30.07	763.8	37.4	3.0	79	WNW			4		7			0.035	0.9		
Sub-Series.																			
Upsala	29 97	761.1	30.04	763.0	31.1	— 0.5	99	SW	4.9	2.2			10			0.001	0.02		Dr. Hildebrandsson.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the cooperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	29.04	737.7	30.52	775.2	37.8	3.2	59	NE			5		1			0	0	Clear	The Observatory.
Zurich	28.88	733.5	30.58	776.8	34.9	1.6	70	E			1		2			0	0	Clear	The Observatory.

Note.—For Geneva the corresponding departures from the normal values are: Barometer, +10.2 mm; Thermometer, +0.8 cent.; Relative Humidity, —21 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople			30.34	770.7	52.3	11.3	68	ENE	7	3.0			4		SW	0	0		The Observatory.
Fao, (Persian Gulf)																			
Salonica																			B. Stefanidès.
Valona			30.19	766.8	65.7	18.7		E			1		10			0	0	Covered	A. Bertrand.
Varna																			Imperial Observatory.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	30.11	764.8	30.23	767.9	61.3	16.3	52	E			1		1c			0	0	D. clouds	Prof. C. V. A. Van Dyck

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	29.79	756.7	29.86	758.4	25	— 3.9	89	NW	3.5	1.6		10							Hon. J. Ferguson.
Brockville, Ontario	29.66	753.4	29.98	761.5	36	2.2		SW	8	3.6			10s		W	0	0	Cloudy	W. R. Bigg.
*Chatham, N. B	29.81	757.2	29.88	758.9	2	—16.7	91	SW	4	1.8			10n		Calm	0	0	Cloudy	G. A. Blair.
Charlottetown, P. E. Island	29.90	759.4	29.94	760.5	8	—13.3	91	W	4	1.8			10s		Calm	0.200	5.08	Cloudy	H. J. Cundall, C. E.
Cornwall, Ontario	29.68	753.9	29.88	758.9	37.8	3.2	75	SW			5	0	5s			0.013	0.33	Clearing	James Smith, M. A.
Dalhousie, N. B	29.82	757.4	29.86	758.4	2.5	—16.4	100	W			1					0	0	Threatening	H. A. Johnson.
Esquimault, B. C	29.53	750.0	29.58	751.3	44.3	6.8	100	Calm				1cs	0			0	0	Clear	W. H. Bevis.
*Father Point, Quebec	29.74	755.4	29.76	755.9	12	—11.1	84	S	20	8.9			10n		SW	0	0	Threatening	J. McWilliams.
Fredericton, N. B	29.88	758.9	29.95	760.7	7.1	—13.8	77	E	5.0	2.2			10s			Inap.	Inap.	Cloudy	Prof. Harrison.
*Fort Garry, Manitoba	28.73	729.7	29.59	751.6	26	— 3.3	95	W	8	3.6		Haze	Haze	Calm	Calm	0	0	Hazy	James Stewart.
Goderich, Ontario																			H. J. Strang, M. A.
Granton, Ontario	28.88	733.5	30.03	762.7	33.1	0.6	99	SW			2	1cs	0	NE		0	0	Clear	James Grant.
*Halifax, N. S	29.83	757.7	29.98	761.5	9	—12.8	70	W	4	1.8		0	0			0.090	2.29	Clear	F. Allison, M. A.
Hamilton, Ontario	29.67	753.6	30.05	763.3	39.7	4.3	66	S			2	0				0	0		Geo. Dickson, M. A
Heart's Content, N. F	29.45	748.0	29.48	748.8	29	— 1.7	88	NE			3		10			0	0	Overcast	E. Weedon.
*Kingston, Ontario	29.64	752.8	29.98	761.5	30	3.9	82	SW	8	3.6		10c	0	Calm		0	0	Fair	S. Woods, M. A.
Little Glace Bay, N. S	29.82	757.4	29.86	758.4	21.5	— 5.8		N	8	3.6		8k		W		0	0	Cloudy	C. H. Rigby.
*Montreal, Quebec	29.66	753.4	29.87	758.7	36	2.2	80	W	16	7.2			10s			0	0	Cloudy	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.17	740.9	29.87	758.7	39	3.9	73	SW	18	8.0		5k	5ks	W	W	0	0	Cloudy	Rev. R. Mosley.
Peterboro, Ontario	29.20	741.7	29.97	761.2	36.2	2.8	65	Calm			0	0	9ks			0	0	Clear?	J. F. Jeffers, B. A.
Port Dover, Ontario	29.37	746.0	30.08	764.0	39	3.9	73	SW	12	5.4		10k	0	SW		0	0	Fair	H. Morgan.
Port Hastings, N. S	29.84	757.9	29.89	759.2	18.9	— 7.9		NW	9	4.0						0	0	Fine	Peter Grant.
Port Stanley, Ontario	29.43	747.5	30.09	764.3	40	4.4	73	SW	18	8.0			10ks		W	0	0	Cloudy	M. Payne.
*Quebec, Quebec	29.40	746.7	29.74	755.4	17	— 8.3	75	W	4	1.8			10n		W	0	0	Cloudy	Capt. Ashe, R. N
*Rockliffe, Ontario	29.35	745.5	29.83	757.7	30	— 1.1	89	Calm	0	0			8s		NW	0	0	Fair	W. H. McIntyre.
St. John, N. B	29.70	756.7	29.97	761.2	9	—12.8	100	Calm	0	0			10s			0	0	Cloudy	G. Murdock, C. E.
*Saugeen, Ontario	29.19	741.4	29.90	759.4	39	3.9	87	SW	8	3.6			10ks		W	0	0	Cloudy	K. Stewart.
Stayner, Ontario	29.11	739.4	29.90	759.4	40	4.4	86	W	23	10.3			10ks	W		0	0	Cloudy	R. J. Cole.
Stratford, Ontario	28.70	729.0	30.02	762.5	33.3	0.7	85	SW	11.5	5.1			10s			0	0	Cloudy	C. J. MacGregor, M. A.
*Sydney, C. B	29.83	757.7	29.86	758.4	21	— 6.1	77	W	6	2.7		5k	5ks	NW	NW	0.09	2.3	Cloudy	T. C. Hill.
*Toronto, Ontario	29.61	752.1	30.01	762.2	35	1.7	66	SW	10	4.5		8cs	2s	W	W	0	0	Cloudy	Magnetic Observatory.
Windsor, N. S	29.88	758 9	29.98	761.5	8.5	—13.1	89	S	4	1.8		2c	2k			0	0	Clear	Prof. John E. Oram.
Woodstock, Ontario																			J. Montgomery.
Sub-Series.																			
St. Johns, Newfoundland					30.0	— 1.1	89	SW				Sm'e	10s;n			0.30	7.6	Cloudy	John Delany.

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

By authority of the **SECRETARY OF WAR.** UNITED STATES SERIES.

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.85	758.2	30.09	764.3	30	— 1.1	79	SE	5	2.2	.....	8cs	0	N	.....	0	0	Fair	
Alpena, Michigan	29.15	740.4	29.80	756.9	40	4.4	73	SW	4	1.8	.....	0	5s	.....	SW	0	0	Fair	
Atlantic City, New Jersey	30.24	768.1	30.26	768.6	37	2.8	71	SW	11	4.9	.....	5cs	0	Calm	.....	0	0	Fair	
Augusta, Georgia	30.30	769.6	30.50	774.7	35	1.7	89	Calm	0	0	.....	2c	Sm'e	SE	Calm	0	0	Smoky	
Baltimore, Maryland	30.24	768.1	30.29	769.4	34	1.1	61	SW	3	1.3	.....	5c	Sm'e	Calm	Calm	0	0	Fair	
Barnegat, New Jersey	30.22	767.6	30.24	768.1	31	— 0.6	84	W	7	3.1	.....	5c	0	W	.....	0	0	Fair	
Bismarck, Dakota	27.95	709.9	29.62	752.3	36	2.2	53	W	6	2.7	.....	0	1s	.....	Calm	0	0	Clear	
Boise City, Idaho	27.14	689.3	30.02	762.5	27	— 2.8	77	Calm	0	0	.....	0	5s	.....	Calm	0	0	Fair	
Boston, Massachusetts	29.85	758.2	30.01	762.2	38	3.3	45	W	12	5.4	.....	8cs	0	W	.....	0	0	Fair	
Brackettville, Texas	28.97	735.8	29.99	761.7	65	18.3	84	E	4	1.8	.....	.....	10s	.....	Calm	0.03	0.8	Cloudy	
Breckenridge, Minnesota	28.72	729.5	29.74	755.4	29	— 1.7	94	W	10	4.5	.....	1cs	0	Calm	.....	0	0	Clear	
Brownsville, Texas	30.12	765.0	30.18	766.6	64	17.8	94	E	3	1.3	.....	8ck	0	Calm	.....	0	0	Cloudy	
Buffalo, New York	29.33	745.0	30.05	763.3	39	3.9	63	SW	11	4.9	.....	8cs	0	Calm	.....	0	0	Fair	
Burkes, Arizona	.....	.....	.....	.....	58	14.4	88	NE	.....	.....	.....	0	10ks	.....	SE	0.22	5.6	Cloudy	
Burlington, Vermont	29.70	754.4	29.96	761.0	36	2.2	52	W	7	3.1	.....	8c	0	Calm	.....	0	0	Fair	
Cairo, Illinois	29.87	758.7	30.28	769.1	46	7.8	54	S	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Camp Grant, Arizona	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Camp Verde, Arizona	26.68	677.7	30.17	766.3	56	13.3	63	SE	.....	.....	.....	.....	10n	.....	SE	Inap.	Inap.	Light rain	
Campo, California	27.26	692.4	29.83	757.7	50	10.0	100	S	3	1.3	.....	.....	10n	.....	Calm	1.34	34.0	Light rain	
Cape Hatteras, N. Carolina	30.49	774.4	30.50	774.7	41	5.0	64	NW	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Cape Henry, Virginia	30.36	771.1	30.38	771.6	41	5.6	49	SW	18	8.0	.....	0	0	.....	.....	0	0	Clear	
Cape Lookout, N. Carolina	30.49	774.4	30.51	774.9	50	10.0	51	W	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Cape May, New Jersey	30.26	768.6	30.29	769.4	43	6.1	75	SW	24	10.7	.....	5c	0	W	.....	0	0	Fair	
Charleston, South Carolina	30.42	772.7	30.49	774.4	48	8.9	56	NE	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Cheyenne, Wyoming	24.02	610.1	29.96	761.0	30	— 1.1	57	W	6	2.7	.....	0	2s	.....	W	0	0	Fair	
Chicago, Illinois	29.25	742.9	29.94	760.5	43	6.1	59	S	13	5.8	.....	5ck	0	SW	.....	0	0	Fair	
Cincinnati, Ohio	29.56	750.8	30.22	767.6	42	5.6	53	SW	4	1.8	.....	9k	0	W	.....	0	0	Cloudy	
Cleveland, Ohio	29.37	746.0	30.11	764.8	40	4.4	48	S	15	6.7	.....	5k	0	S	.....	0	0	Fair	
Concho, Texas	28.19	716.0	29.88	758.9	58	14.4	87	SE	4	1.8	.....	8cs	0	SE	.....	0	0	Cloudy	
Corsicana, Texas	29.74	755.4	30.22	767.6	52	11.1	86	S	3	1.3	.....	5cs	0	Calm	.....	0	0	Fair	
Davenport, Iowa	29.30	744.2	29.95	760.7	44	6.7	75	SW	4	1.8	.....	1c	4s	SW	SW	0	0	Fair	
Denison, Texas	29.37	746.0	30.18	766.6	53	11.7	86	S	8	3.6	.....	1c	1s	Calm	Calm	0	0	Fair	
Denver, Colorado	24.75	628.6	29.97	761.2	35	1.7	52	S	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Detroit, Michigan	29.35	745.5	30.04	763.0	35	1.7	70	SW	6	2.7	.....	0	5s	.....	SW	0	0	Fair	
Dodge City, Kansas	27.34	695.7	29.77	756.1	30	— 1.1	89	W	3	1.3	.....	5c	Haze	W	Calm	0	0	Fair	
Dubuque, Iowa	29.16	740.7	29.87	758.7	43	6.1	67	SW	1	0.4	.....	0	5s	.....	Calm	0	0	Fair	
Duluth, Minnesota	29.00	736.6	29.68	753.9	32	0.0	79	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Eagle Pass, Texas	29.34	745.2	30.08	764.0	62	16.7	100	SE	6	2.7	.....	.....	10n	.....	Calm	0.03	0.8	Light rain	
Eastport, Maine	29.87	758.7	29.94	760.5	20	— 6.7	85	Calm	0	0	.....	.....	10s	.....	SW	0	0	Threatening	
Erie, Pennsylvania	29.36	745.7	30.09	764.3	40	4.4	56	S	14	6.3	.....	5c	Haze	W	.....	0	0	Fair	
Escanaba, Michigan	29.05	737.9	29.71	754.6	35	1.7	80	SW	12	5.4	.....	8c	0	SW	.....	0	0	Fair	
Florence, Arizona	28.29	718.6	29.89	759.2	60	15.6	70	E	.....	.....	.....	.....	10n	.....	E	0.10	2.5	Light rain	
FortBayard, New Mexico	24.14	613.1	30.14	765.5	45	7.2	84	N	2	0.9	.....	.....	10s	.....	Calm	0	0	Cloudy	
Fort Craig, New Mexico	25.60	650.2	.....	.....	38	3.3	91	NW	4	1.8	.....	0	5s	.....	NW	0	0	Fair	
Fort Gibson, Indian Ter	29.58	751.3	30.12	765.0	52	11.1	72	S	10	4.5	.....	0	2s	.....	SW	0	0	Clear	
Fort Griffin, Texas	28.85	732.8	30.14	765.5	52	11.1	86	Calm	0	0	.....	.....	10s	.....	Calm	0	0	Cloudy	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	28.88	733.5	30.60	762.0	49	9.4	93	S	6	2.7	.....	8cs	Fog	SW	SW	0	0	Cloudy	
Galveston, Texas	30.19	766.8	30.24	768.1	58	14.4	93	E	4	1.8	.....	.....	Fog	.....	Calm	0	0	Foggy	
Grand Haven, Michigan	29.26	743.2	29.91	759.7	44	6.7	76	SW	20	8.9	.....	5cs	2s	Calm	Calm	0	0	Fair	
Indianapolis, Indiana	29.35	745.5	30.14	765.5	46	7.8	54	S	5	2.2	.....	0	8s	.....	W	0	0	Cloudy	
Indianola, Texas	30.21	767.3	30.24	768.1	58	14.4	94	NE	8	3.6	.....	10k	0	S	.....	0	0	Cloudy	
Jacksboro, Texas	29.01	736.8	30.14	765.5	52	11.1	86	Calm	0	0	.....	.....	9s	.....	Calm	0	0	Cloudy	
Jacksonville, Florida	30.39	771.9	30.42	772.7	52	11.1	86	N	7	3.1	.....	8k	0	Calm	.....	0	0	Cloudy	
Keokuk, Iowa	29.34	745.2	29.95	760.7	51	10.6	64	SW	10	4.5	.....	.....	10s	.....	Calm	0	0	Cloudy	
Key West, Florida	30.20	767.1	30.23	767.8	67.0	19.4	90	NE	11	4.9	.....	5cs	5ks	W	E	0.05	1.3	Cloudy	
Kittyhawk, North Carolina	30.43	772.9	30.46	773.7	38	3.3	81	SW	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Knoxville, Tennessee	29.41	747.0	30.50	774.7	27	— 2.8	88	Calm	0	0	.....	0	Sm'e	.....	.....	0	0	Smoky	
La Crosse, Wisconsin	29.04	737.6	29.77	756.1	43	6.1	67	S	16	7.2	.....	0	0	.....	.....	0	0	Clear	
La Mesilla, New Mexico	26.13	663.7	30.28	769.1	40	4.4	86	Calm	0	0	.....	0	1s	.....	Calm	0	0	Clear	
Laredo, Texas	.....	.....	.....	.....	65	18.3	94	E	4	1.8	.....	.....	10s	.....	Calm	0.06	1.5	Cloudy	
Leavenworth, Kansas	29.16	740.7	29.99	761.7	55	12.8	68	SW	12	5.4	.....	2c	0	Calm	.....	0	0	Clear	
Los Angeles, California	29.49	749.0	29.82	757.4	58	14.4	91	E	4	1.8	.....	.....	10n	.....	Calm	0.73	18.5	Light rain	
Louisville, Kentucky	29.66	753.9	30.25	768.3	45	7.2	52	S	11	4.9	.....	5ck	Sm'e	SW	Calm	0	0	Fair	
Lynchburg, Virginia	29.67	753.6	30.40	772.1	31	— 0.6	69	Calm	0	0	.....	0	Haze	.....	Calm	0	0	Hazy	
Maricopa Wells, Arizona	.....	.....	.....	.....	55	12.8	68	E	.....	.....	.....	.....	10s	.....	Calm	0	0	Cloudy	
Marquette, Michigan	28.98	736.1	29.68	753.9	37	2.8	71	S	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Mason, Texas	28.53	724.6	30.25	769.4	59	15.0	88	SE	4	1.8	.....	.....	10s	.....	.....	0	0	Cloudy	
Memphis, Tennessee	29.96	761.0	30.29	769.4	46	7.8	67	SE	4	1.8	.....	0	Sm'e	.....	SE	0	0	Clear	
Milwaukee, Wisconsin	29.17	740.9	29.86	758.4	41	5.0	73	SW	8	3.6	.....	5c	Sm'e	S	.....	0	0	Fair	
Mobile, Alabama	30.32	770.1	30.37	771.4	49	9.4	93	S	1	0.4	.....	2ck	1s	Calm	Calm	0	0	Fair	
Montgomery, Alabama	30.18	766.6	30.43	772.9	49	9.4	60	E	8	3.6	.....	10ck	Haze	Calm	Calm	0	0	Cloudy	
Morgantown, West Virginia	29.20	741.7	30.30	769.6	37	2.8	54	SW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Mt. Washington, N. H.	23.33	592.6	29.69	754.1	10	—12.2	100	NW	108	48.2	.....	.....	Fog	.....	NW	0	0	Foggy	
Nashville, Tennessee	29.80	756.9	30.37	771.4	33	0.6	79	E	1	0.4	.....	0	Haze	.....	Calm	0	0	Clear	
New Haven, Connecticut	30.02	762.5	30.14	765.5	38	3.3	80	SW	6	2.7	.....	5cs	0	Calm	.....	0	0	Fair	
New London, Connecticut	30.05	763.3	30.10	764.5	39	3.9	46	W	12	5.4	.....	2cs	1s;hz	W	W; Calm	0	0	Fair	
New Orleans, Louisiana	30.24	768.1	30.31	769.9	55	12.8	93	NE	4	1.8	.....	.....	Fog	.....	Calm	0	0	Foggy	
Newport, Rhode Island	30.01	762.2	30.06	763.5	40	4.4	56	W	20	8.9	.....	5k	5s	W	W	0	0	Cloudy	
New York, New York	30.01	762.2	30.20	767.1	35	1.7	70	W	14	6.3	.....	5cs	Sm'e	W	.....	0	0	Fair	
Norfolk, Virginia	30.36	771.1	30.42	772.7	35	1.7	52	SW	10	4.5	.....	0	0	.....	.....	0	0	Clear	
North Platte, Nebraska	27.05	687.1	29.73	755.1	26	— 3.3	77	NW	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Olympia, Washington Ter.	29.65	753.1	29.69	754.1	49	9.4	93	S	6	2.7	.....	0	5s	.....	SW	0.16	4.1	Fair	
Omaha, Nebraska	28.80	731.5	29.90	759.4	35	1.7	79	SW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Oswego, New York	29.72	754.9	30.05	763.3	39	3.9	55	S	4	1.8	.....	5cs	Haze	W	.....	0	0	Fair	
Pembina, Dakota	28.79	731.3	29.63	752.6	32	0.0	69	W	10	4.5	.....	0	2s	.....	Calm	0	0	Clear	
Philadelphia, Pennsylvania	30.23	767.8	30.29	769.4	32	0.0	69	SW	16	7.2	.....	2c	0	Calm	.....	0	0	Clear	
Phœnix, Arizona	.....	.....	.....	.....	55	12.8	93	Calm	.....	.....	.....	.....	10ks	.....	SE	0.09	2.3	Threatening	
Pike's Peak, Colorado	17.79	449.8	30.00	762.0	22	— 5.6	58	NW	20	8.9	.....	1cs	0	Calm	.....	0	0	Clear	
Pioche, Nevada	23.96	608.6	29.73	755.1	39	3.9	100	NW	2	0.9	.....	.....	10n	.....	Calm	0.16	4.1	Light rain	
Pittsburg, Pennsylvania	29.38	746.2	30.22	767.6	35	1.7	70	S	2	0.9	.....	2c	Fog	W	Calm	0	0	Fair	
Port Huron, Michigan	29.30	744.2	29.98	761.5	36	2.2	71	SW	16	7.2	.....	.....	10-	.....	SW	0	0	Cloudy	
Portland, Maine	29.90	759.4	29.95	760.7	25	— 3.9	75	NW	14	6.3	.....	5c;k	Haze	NW	.....	0	0	Fair	
Portland, Oregon	29.76	755.9	29.86	758.4	38	3.3	100	N	1	0.4	.....	.....	Fog	.....	Calm	0	0	Foggy	
Prescott, Arizona	24.70	627.4	30.06	763.5	44	6.7	68	E	.....	.....	.....	.....	10s	.....	SE	0.40	10.2	Cloudy	
Punta Rassa, Florida	30.29	769.4	30.31	769.9	62	16.7	83	NE	8	3.6	.....	5k	Haze	SW	Calm	0	0	Fair	
Red Bluff, California	29.43	747.5	29.79	756.7	47	8.3	77	N	5	2.2	.....	0	1s	.....	Calm	0	0	Clear	
Rochester, New York	29.39	746.5	30.01	762.2	42	5.6	34	W	14	6.3	.....	8cs	0	NW	.....	0	0	Fair	

UNITED STATES SERIES.—Continued.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Roseburg, Oregon	29.27	743.4	29.85	758.2	36	2.2	100	Calm	0	0	.....	.....	Fog	.....	Calm	0	0	Foggy	
Sacramento, California	29.73	755.1	29.81	757.2	48	8.9	77	N	4	1.8	.....	2k	5ks	S	S	0	0	Cloudy	
St. Louis, Missouri	29.53	750.0	30.10	764.5	51	10.6	52	S	14	6.3	.....	0	0	.....	.....	0	0	Clear	
St. Marks, Florida	30.37	771.4	30.39	771.9	51	10.6	86	NE	4	1.8	.....	.....	10s	.....	Calm	0	0	Cloudy	
St. Paul, Minnesota	28.90	734.0	29.74	755.4	33	0.6	79	S	4	1.8	.....	2c	0	Calm	.....	0	0	Fair	
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salt Lake City, Utah	25.63	651.0	29.96	761.0	37	2.8	71	NE	4	1.8	.....	.....	10s	.....	Calm	0	0	Cloudy	
San Antonio, Texas	29.49	749.0	30.08	764.0	60	15.6	94	E	4	1.8	.....	.....	Haze	.....	Calm	0	0	Hazy	
San Diego, California	29.80	756.9	29.87	758.7	60	15.6	82	SW	4	1.8	.....	0	5s	.....	Calm	1.05	26.7	Fair	
Sandusky, Ohio	29.41	747.0	30.10	764.5	43	6.1	58	SW	18	8.0	.....	.....	10ks	.....	SW	0	0	Cloudy	
Sandy Hook, New Jersey	30.18	766.6	30.21	767.3	38	3.9	54	SW	21	9.4	.....	5c	Sm'e	W	.....	0	0	Fair	
San Francisco, California	29.74	755.4	29.81	757.2	53	11.7	80	NW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Santa Fé, New Mexico	23.43	595.1	29.97	761.2	30	— 1.1	78	NE	1	0.4	.....	0	5s	.....	Calm	0	0	Fair	
Savannah, Georgia	30.37	771.4	30.47	773.9	49	9.4	57	E	4	1.8	.....	1ck	2s	S	Calm	0	0	Clear	
Shreveport, Louisiana	30.08	764.0	30.31	769.9	46	7.8	92	Calm	0	0	.....	5cs	0	W	.....	0	0	Fair	
Smithville, North Carolina	30.46	773.7	30.50	774.7	42	5.6	83	N	5	2.2	.....	0	1s	.....	Calm	0	0	Clear	
Springfield, Massachusetts	29.88	758.9	30.02	762.5	33	0.6	61	Calm	0	0	.....	2ck	5s	N	SW	0	0	Fair	
Stockton, Texas	27.05	687.1	30.05	763.3	53	11.7	100	S	8	3.6	.....	.....	10s	.....	S	0	0	Cloudy	
Thatcher's Island, Mass	29.94	760.5	30.00	762.0	35	1.7	52	W	16	7.2	.....	5cs	5s	NW	NW	0	0	Cloudy	
Toledo, Ohio	29.37	746.0	30.06	763.5	40	4.4	56	SW	6	2.7	.....	2c	2s	Calm	SW	0	0	Fair	
Tucson, Arizona	27.52	699.0	30.07	763.8	62	16.7	71	Calm	.....	.....	.....	.....	10s	.....	.....	0	0	Threatening	
Tybee Island, Georgia	30.42	772.7	30.45	773.4	50	10.0	77	NE	12	5.4	.....	2ck	2s	E	Calm	0	0	Fair	
Umatilla, Oregon	29.50	749.3	.....	.....	32	0.0	89	Calm	0	0	.....	0	Fog	.....	Calm	0	0	Fair	
Vicksburg, Mississippi	30.08	764.0	30.35	770.9	52	11.1	79	SE	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Virginia City, Montana	24.20	614.7	29.68	753.9	25	— 3.9	75	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Visalia, California	29.48	748.8	29.85	758.2	50	10.0	79	Calm	0	0	.....	0	8s	.....	Calm	0	0	Cloudy	
Washington, D. C	30.18	766.6	30.31	769.9	30.5	— 0.8	78	W	4	1.8	.....	2c	Sm'e	W	.....	0	0	Fair	
Wickenburg, Arizona	.....	.....	.....	.....	32	0.0	79	S	.....	.....	.....	.....	10ks	.....	Calm	0	0	Threatening	
Wilmington, N. Carolina	30.42	772.7	30.50	774 7	36	2.2	80	E	2	0.9	.....	0	Fog	.....	Calm	0	0	Clear	
Winnemucca, Nevada	25.54	648.7	29.90	759.4	33	0.6	61	NE	8	3.6	.....	.....	10s	.....	SW	0	0	Cloudy	
Wood's Holl, Mass	30.03	762.7	30.08	764.0	43	6.1	58	NW	16	7.2	.....	5c	0	N	.....	0	0	Fair	
Yankton, Dakota	28.61	726.7	29.95	760.7	28	— 2.2	77	NW	2	0.9	.....	0	0	.....	.....	0	0	Fair	
Yuma, Arizona	29.79	756.7	29.96	761.0	57	13.9	62	Calm	0	0	.....	.....	10s	.....	.....	0	0	Cloudy	
Sub-Series.																0.84	21.3	Cloudy	
York Factory, B. A.	30.26	768.6	30.32	770.1	—25.0	—31.7	.....	N	1	0.4	.....	1c	0	N	.....	0	0	Fair	J. Fortescue, W. Wood.
Havana, Cuba, W. I.	30.12	765.0	30.14	765.5	69	20.6	75	Calm	0	0	.....	8ck	2ks	W	E	0	0	Fair	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.14	765.5	30.15	765.8	76	24.4	90	NE	3	1.3	.....	8c	8n	Var.	Var.	0	0	.....	James Gall.
Navassa, W. I.	29.91	759.7	29.99	761.7	79	26.1	.....	NE	15	6.7	.....	.....	.....	.....	.....	0	0	Fair	F. M Everett.
St. Thomas, W. I.	.....	.....	.....	.....	78	25.6	78	NE	4	1.8	.....	2c	5ks	E	.....	0	0	.....	G. O. Gellich.
Paramaribo, D. Guiana, S. A.	.....	.....	29.96	761.0	83	28.3	79	E	.....	.....	3	4c	5k	E	.....	0.010	0.25	½ Cloudy	C. J. Hering.
Batavia, Dutch Guiana, S. A	30.03	762.8	30.04	763.0	84.6	29.2	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0	Cloudy	Dr. H. Groot.
Medellin, Colombia, S. A.	25.20	640.1	.....	.....	68.2	20.1	80	NE	.....	.....	1	3c;cs	1ks	.....	.....	0.03	0.8	Fair	Thomas Herran.
Honolulu, Oahu, H. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Daniel Smith.
Makawao, Maui, H. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. L. Clarke.

Note.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo; for Batavia, the barometer reduced to freezing but not to sea-level. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,883 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.8 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.67 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in ; Pioche, 5.77 in.; Prescott, 5.56 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation

STATIONS AND VESSELS.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er. 0—10.	Clouds. Amount. Low'r. 0—10.	Clouds. Direction. Up'er. From—	Clouds. Direction. Low'r. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard Mare Island, Cal.	29.80	756.9	47	8.3	47	8.3	85	NNE	1	0.4	.....	.....	3s	.....	Calm	0	0	.....	.....	.....	
Navy Yard, Pensacola, Fla.	30.43	772.9	.....	.....	56	13.3	94	NNE	5	2.2	.....	.....	10	.....	.....	0	0	.....	.....	D. clouds.....	
Navy Yard, Portsmouth, N.H	30.02	762.5	62	16.7	30	— 1.1	??	SW	1	0.4	.....	.....	.....	.....	.....	0.2	5.	.....	.....	Cloudy.....	
Naval Hospital, Yokohama, Japan.....	30.21	767.3	53.5	11.9	45	7.2	84	N	.....	.....	2	.....	7k	.....	SE	0	0	.....	.....	Threatening	
Adams. Valparaiso, Chili.....	29.95	760.7	63	17.2	63	17.2	78	SSE	.....	.....	1	.....	7	.....	S&W	0	0	Long	N	Hazy.....	
Alert. Yokohama, Japan.....	30.31	769.9	.....	.....	52	11.1	86	N	.....	.....	1	.....	8	.....	N	.....	.....	Smooth	.....	D. clouds.....	
Alliance, Smyrna, Turkey.....	30.38	771.6	61	16.1	54	12.2	61	E	.....	.....	1	.....	8	.....	S&E	.....	.....	.....	.....	Cloudy.....	
Ashuelot. Shanghai, China.....	30.12	765.0	60	15.6	52	11.1	100	NNE	.....	.....	2	.....	10	.....	NNE	.....	.....	.....	.....	Misty.....	
Canonicus, New Orleans, La.....	30.24	768.1	43	6.1	54	12.2	93	SE	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	Foggy	
Colorado, New York, N. Y.....	30.19	766.8	36	2.2	36	2.2	70	SW	10	4.5	.....	.....	4	.....	SW	0	0	.....	.....	Light fog.....	
Despatch, Constantinople, Turkey.	30.45	773.4	65	18.3	56	13.3	74	NE	.....	.....	3	.....	7	.....	S	.....	.....	.....	.....	Cloudy.....	
Essex, St. Paul de Loanda, Lower Guinea.	29.85	758.2	83	28.3	84	28.9	91	W	.....	.....	1	.....	2	.....	.....	.....	.....	Smooth	.....	D. clouds.....	
Franklin, Norfolk, Va.....	30.48	774.2	36	2.2	36	2.2	61	SW	6.6	3.0	.....	.....	8?	.....	SW	0	0	.....	.....	D. clouds.....	
Guard, Lisbon, Portugal.....	30.33	770.4	58	14.4	51	10.6	52	NE	.....	.....	4	.....	6	.....	N&E	.....	.....	.....	.....	D. clouds.....	
Lackawana, Mare Island, Cal....	29.87	758.7	.....	.....	55	12.8	74	Calm	.....	.....	0	.....	7	.....	.....	.....	.....	.....	.....	D. clouds.....	
Marion, Villefranche, France.....	30.25	768.3	58	14.4	57	13.9	58	SE	.....	.....	1	.....	10	.....	Calm	0	0	Smooth	.....	D. clouds.....	
Michigan, Erie, Pa.....	29.57	751.1	56	13.3	39	3.9	55	S	.....	.....	2	.....	5	.....	S	.....	.....	.....	.....	Fair	
Monocacy, Amoy, China.....	29.92	760.0	65	18.3	63	17.2	100	SE	.....	.....	1–2	.....	10	.....	S&E	0	0	Smooth	.....	Foggy	
Monongahela. Aden, Arabia.....	30.03	762.7	81	27.2	81	27.2	100	SSE	.....	.....	2	.....	k	.....	.....	.....	.....	Smooth	.....	D. clouds.....	
New Hampshire, Port Royal, S.C.....	30.61	777.5	.....	.....	49	9.4	63	NNE	8	3.6	.....	.....	8	.....	NW	0	0	.....	.....	D. clouds. ...	
Omaha. S. 29° 31′, W. 72° 05′.....	30.03	762.7	66	18.9	64	17.8	83	S	2	0.9	.....	.....	10	.....	SE	0	0	Slight	S	Cloudy.....	
Onward, Callao, Peru.....	29.97†	761.2†	76	24.4	74	23.3	81	SE	.....	.....	3	.....	10	.....	.....	.....	.....	Long	W	Hazy.....	
Ossipee, Norfolk, Va.....	30.45	773.4	63	17.2	39	3.9	73	SW	.....	.....	2	.....	2	.....	W	.....	.....	.....	.....	D. clouds.....	
Palos, Shanghai, China.....	30.12	765.0	56	13 3	52	11.1	93	NE	.....	.....	1–2	.....	0	.....	.....	.....	.....	.....	.....	Foggy.....	
Plymouth. N. 20° 28,′ W. 72° 35′.....	30.14	765.5	77	25.0	76	24.4	??	NE	.....	.....	5	.....	9	.....	.....	.....	.....	Mod'ate	NE	Overcast.....	
Powhatan, Norfolk, Va.....	.....	.....	.....	.....	37	2 8	100	S	7.2	3.2	.....	.....	3	.....	.....	0	0	.....	.....	.....	
Ranger, Shanghai, China.....	30.24	768.1	.....	.....	55	12.8	87	NNE	.....	.....	0–1	.....	10	.....	Calm	.....	.....	.....	.....	Overcast.....	
Rio Bravo, Brownsville, Texas.....	30.06	763.5	.....	.....	65	18.3	94	E	.....	.....	1	.....	10	.....	ESE	.....	.....	.....	.....	Misty.....	
Santee, Annapolis, Md	30.37	771.4	66	18.9	35	1.7	80	SW	.....	.....	0–1	.....	4	.....	NW	0	0	.....	.....	Clear	
Saratoga, Norfolk, Va.....	.....	.....	.....	.....	35	1.7	100	Calm	.....	.....	0	.....	.....	.....	.....	0	0	.....	.....	Clear	
St. Louis, League Island, Pa	30.15	765.8	32	0.0	31	— 0.6	89	SW	13	5.8	.....	.....	5	.....	SW	0	0	.....	.....	Fair	
Swatara, Norfolk, Va.....	30.49	774.4	.....	.....	46	7.8	62	SSW	.....	.....	2	.....	2	.....	S&W	.....	.....	.....	.....	D. clouds.....	
Tennessee, Nagasaki, Japan.....	30.11	764.8	68	20.0	58	14.4	32	NE	.....	.....	1	.....	10	.....	Calm	0.02	0.5	Smooth	.....	D clouds.....	
Trenton, Villefranche, France.....	30.32	770.1	.....	.....	58	14.4	42	Calm	0	0	.....	.....	8	.....	S&E	0.2	5.	.....	.....	D. clouds.....	
Vandalia, N. 43° 58′, E. 8° 51′.	30.32	770.1	57	13.9	58	14.4	58	E	.....	.....	3	.....	10	.....	.....	.....	.....	Mod'ate	SE	D. clouds.....	
Wabash, Boston, Mass.....	30.05	763.3	57	13.9	36	2.2	61	W	6	2.7	.....	.....	8	.....	Calm	0	0	.....	.....	D. clouds....	
Wyoming, Washington, D. C.....	30.61	777.5	.....	.....	33	0.6	.....	SW	.....	.....	1	.....	2	.....	.....	.....	.....	.....	.....	D. clouds.....	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. The position given for the Plymouth is that at noon, local time, instead of that at 7:35 a. m., Washington time.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.	Character.	Direction from—		
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—				
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama, N. 41°, W. 124° 29′			29.68*	753.9*	56	13.3		NNW			2		1		NNW	Long	WSW	Clear.	Capt. Seabury.
S. S. City of Peking, N. 29° 18′, W. 168° 19′			30.37*	771.4*	64	17.8	62	N			2		9		N	Small	NNW	Overcast	Lt. Z. L. Tanner, U.S.N.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio, Hong-Kong, China			29.88	758.9	74	23.3		E			3		8		ENE			D. clouds	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

NOTE.—The originals give the wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. *Aneroid.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.

S. S. Belgic, N. 33° 21′, E. 136° 23′			30.10*	764.5*				NE			4		Heavy		ENE	Heavy	ENE	Drizzling	Capt. John Metcalf.
S. S. Gaelic, N. 30° 55′, E. 130° 34′			29.95†	760.7†	66	18.9	??	E			4		n;s		W	Smooth	SW	Raining	Capt. W. H. Kidley
S. S. Oceanic																			Capt. H. Parsell.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. * Corrected for temperature and elevation; instrumental error not known. †Aneroid.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig, N. 46° 28′, W. 40° 48′			29.61	752.1	60.0	15.6	82	S			8		8		S	Very high.	S	D. clouds	Capt. Undütsch.
S. S. Nürnberg, N. 28° 51′, W. 88° 58′			30.32	770.1	69.0	20.6	97	SE			2		0			Smooth	SE	Blue sky	Capt. A. Jaeger.
S. S. Ohio, Bremerhaven			30.12	765.0	47.0	8.3	100	W			4		k		W	Smooth		Blue sky	Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds.

UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	TRUE COURSE TOWARD—	HOURLY RATE IN KNOTS.	BAROMETER REDUCED TO SEA-LEVEL.		TEMPERATURE OF THE AIR.		RELATIVE HUMIDITY.	WIND.				CLOUDS.				SEA-SWELL.		WEATHER.	OBSERVER
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Lo'wr	Upper.	Lower.	CHARACTER	DIRECTION FROM—		
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second	0—10.	0—10.	0—10.	From—	From—				
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, Philadelphia, Pa			30.25*	768.3*	35	1.7	90	W			4		0					Fine	Captain Sargent.
S. S. Ohio, N. 49° 40′, W. 37° 00′			29.78	756.4	56.5	13.6	94	S			7		9		S	Rough	SSW	Misty	Captain Morrison.
S. S. Pennsylvania, N. 53° 33′, W. 21° 37′			30.42†	772.7†	51	10.6	100	W			3		7		W	Large	NW to SW	Cloudy	Captain Harris.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. *Aneroid †Corrected for temperature and elevation, instrumental error not known.

RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

S. S. Nederland																			Capt. Randle.
S. S. Switzerland, N. 47° 53′, W. 36° 17′			29.97*	761.2*				SW	40	17.9		5		SW	Very Heavy	W	Overcast	Capt. Jackson.
S. S. Vaderland																		Capt. Nichols.

*Aneroid: regulated to standard at Antwerp.

ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

S. S. Hibernian																			
S. S. Scandinavian, Baltimore, Md			30.29	769.4	29	— 1.7		S			4		2					Blue sky	Capt. W. Richardson.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, Kennebunk, Maine			29.98	761.5	25	— 3.9	94	W	2	0.9			8k		N			Cloudy	Capt. James Jorgensen.

NOTE.—The originals for the schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.,) Chief Signal Officer, U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON DECEMBER 16, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:28 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours	.....	.....	30.34	770.7	57.9	14.4	78	ESE	.....	.....	4	.....	9	.....	.....	0.256	6.5	Covered... .	Michel.
Algiers	.....	.....	30.22	767.5	58.6	14.8	80	NE	.....	.....	3	.....	10	.....	.....	0.843	21.4	Covered.....	Peter.
La Calle	.....	.....	30.10	764.4	.....	.....	.....	NE	.....	.....	5	.....	7	.....	.....	0.591	15.0	Very cloudy	Fleury.
Tunis	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Jacques.
Sfax	.....	.....	30.02	762.5	57.2	14.0	.....	NNE	.....	.....	3	.....	10	.....	.....	0	0	Covered.....	Husson.
Saida	.....	.....	30.21	767.2	47.8	8.8	94	NNE	.....	.....	4	.....	7	.....	.....	0.646	16.4	Very cloudy	Millot.
Tebessa	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Bassières.
Geriville	.....	.....	30.15	765.8	43.3	6.3	94	N	.....	.....	4	.....	10	.....	.....	0.591	15.0	Covered.....	Lemaillot.
Laghouat	.....	.....	30.15	765.7	53.6	12.0	100	E	.....	.....	4	.....	2	.....	.....	0.039	1.0	Fair.....	Guyot.
Biskra	.....	.....	30.08	764.1	66.0	18.9	52	NW	.....	.....	3	.....	5	.....	.....	0	0	Cloudy,.....	Kuntz.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890 ? meters, or 2,919.9 ? feet; Tebessa, 1,088 ? m., or 3,569.4 ? ft.; Geriville, 1,360 ? m.; or 4,461.7 ? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

Agram	29.90	759.4	30.49	774.4	27.9	— 2.3	96	Calm	.....	.....	0	.....	8	.....	.....	0	0	.....	Prof. Ivan Stozir
Cracow, I. R. Observatory	29.56	750.9	30.37	771.3	36.3	2.4	77	W	.....	.....	1	.....	8	.....	.....	0.008	0.2	.....	Dr. Wierzbiski.
Eperies	29.47	748.5	30.41	772.5	25.7	— 3.5	85	Calm	.....	.....	0	.....	6cs	.....	.....	0	0	.....	Julius Mikolik.
Gratz	29.14	740.2	30.48	774.2	28.9	— 1.7	79	S	.....	.....	2	.....	2	.....	.....	0	0	.....	Andreas Rospini.
Hermannstadt	28.89	733.8	30.39	772.0	34.0	1.1	96	NE	.....	.....	1	.....	10	.....	.....	0.159	4.05	Snowing.....	Prof. Reissenberger.
Kremsmünster	28.99	736.3	30.40	772.2	34.2	1.2	75	WSW	.....	.....	2	.....	8	.....	.....	0	0	.....	Prof. C. Wagner.
Lemberg	29.33	744.9	30.37	771.5	33.1	0.6	85	SW	.....	.....	1	.....	3	.....	.....	0.016	0.4	.....	Dr. T. Stanecki.
Pola	30.24	768.2	30.36	771.2	43.9	6.6	46	ENE	.....	.....	1	.....	2cs	.....	.....	0	0	.....	I.R.Hydrographic Office
Szathmar	30.00	762.1	30.50	774.6	31.6	— 0.2	89	NE	.....	.....	2	.....	10	.....	.....	0	0	.....	Johann Tamas, S. J.
Szegedin	30.13	765.4	30.43	772.9	36.3	2.4	85	N	.....	.....	1	.....	0	.....	.....	0	0	.....	Karl Stancel.
Trieste	30.32	770.1	30.42	772.7	41.2	5.1	45	ENE	.....	.....	2	.....	0	.....	.....	0	0	Clear.....	P. Busin.
Vienna	29.66	753.4	30.39	771.9	38.8	3.8	52	W	.....	.....	2	.....	4	.....	.....	0	0	.....	I. R. Central Met. Obs'y
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

Arlon	28.82	731.9	30.41	772.3	30.4	— 0.9	98	W	.....	.....	5	.....	10	.....	.....	0.606	15.4	Rain & snow	Prof. M. Passau.
Brussels	30.05	763.3	30.26	768.6	40.5	4.7	98	SSW	.....	.....	2	10	.....	.....	.....	0.657	16.70	Raining.....	Royal Observatory.
Furnes	30.25	768.4	30.28	769.0	46.2	7.9	99	WSW	.....	.....	4	.....	10	.....	.....	0.087	2.2	.....	M. E. de Cae.
Maeseyck	30.07	763.8	30.20	767.1	39.9	4.4	95	SW	.....	.....	4	.....	10	.....	.....	0.368	9.1	Raining.....	M. Pierrot.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

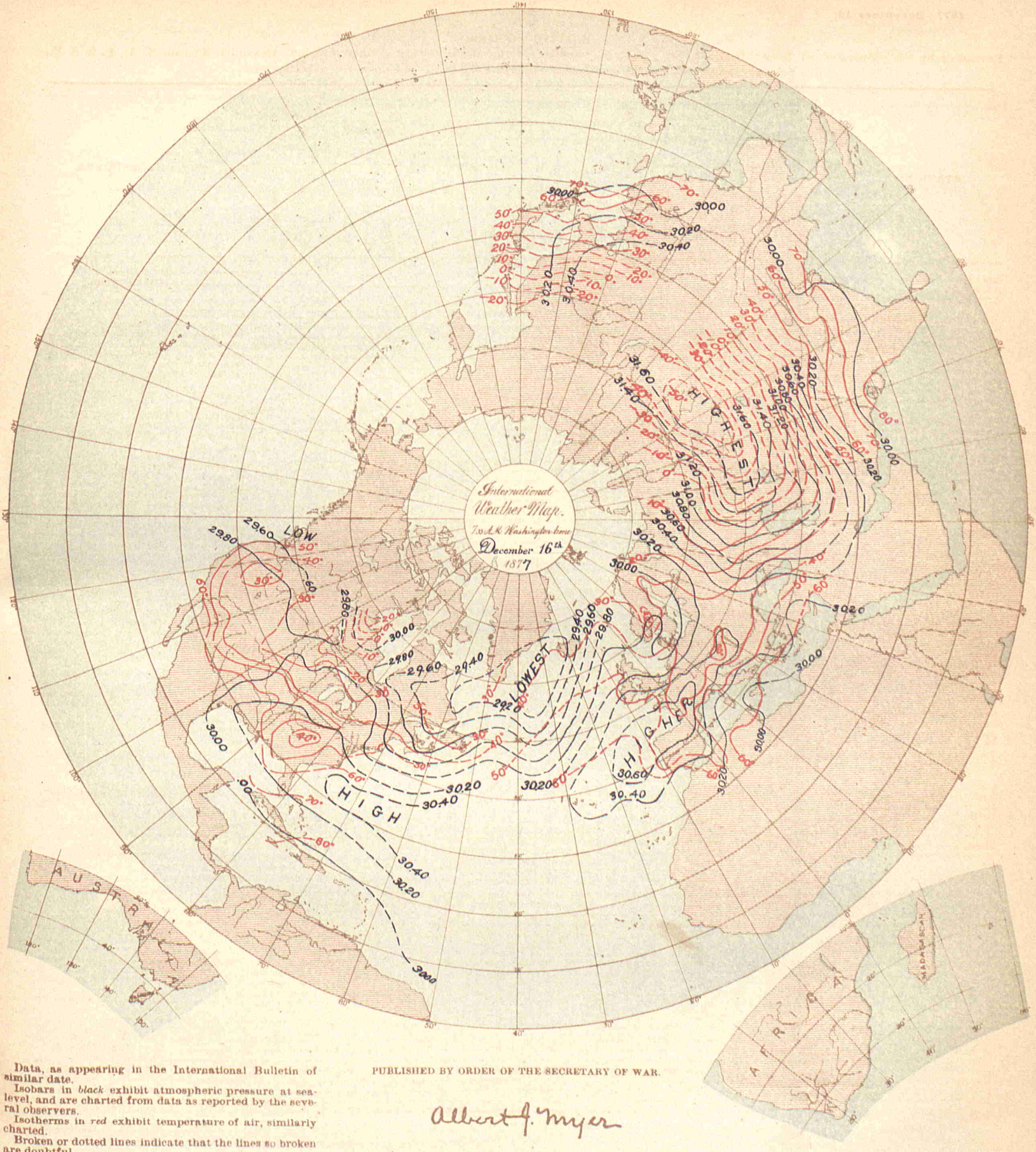
Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	29.98	761.5	30.08	764.0	43.0	6.1		NNW	6	2.7			9			0.060	1.52	Raining	W. Boswell.
Ardrossan																			William McNeil.
Armagh, Observatory			30.37	771.4	48.4	9.1		WSW	7	3.1									S. Call, for Dr. Robinson
Bidston, (Liverpool Obs.)			30.28	769.1	47.6	8.7		W	37	16.5			10					Overcast	John Hartnup.
Birr Castle, (Parsonstown)			30.45	773.4	49.1	9.5		W			1		10					Overcast	J. Dreyer.
Bradford, Yorkshire																0.04	1.0		J. McLandsborough.
Bridgetown, (Barbados)	29.89	759.2	29.92	760.0	82.0	27.8		NE			1		3					D. clouds	Pvt. G. W. Roberts, A.
Cambridge, Observatory			30.25	768.3	48.0	8.9		WSW			3		10			Blank	Blank	Overcast	H. Todd. [H. C.
Cardington			30.29	769.4	47.0	8.3		W			1		8					Overcast	John McLaren.
Chatham, School M. E	30.18	766.6	30.32	770.1	44.2	6.8		W			1		10					Overcast	Lt. W. G. Morris, R. E.
Dartmoor	28.98	736.1	30.50	774.7	44.2	6.8		W			4		8					Gloomy	Alexander Watt.
Davos Platz (Switzerland)																			Francis Redford, M. A.
Donaghadee	30.24	768.1	30.27	768.8	49	9.4		WNW			3		3					D. clouds	J. Mac Gowan.
Dover	30.27	768.8	30.29	769.4	47	8.3		W			3		5					⅗ clouded	J. Costello.
Eccles, (near Manchester)			30.27	768.8	48.9	9.4		W	10.0	4.5			10					Gloomy	Thomas Mackereth.
Falmouth, Observatory	30.28	769.1	30.52	775.2	49.4	9.7		WNW			3		8					Overcast	The Staff.
Fort Napier, (Natal)	27.50	698.5	29.69	754.1	87.8	31.0		E			1		0					Blue sky	Pvt. G. Salmon, A. H. C
Free Town, (Sierra Leone)			29.90	759.4	86.0	30.0		W			0		3					D. clouds	
Galway, Queen's College																			Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	30.28	769.1	30.33	770.4	59.0	15.0		E			5		6					D. clouds	Corpl. C. Aitken, A. H. C.
Glasgow, Observatory	29.93	760.2	30.13	765.3	50.1	10.1		WSW			3		10					Gloomy	D. G. Maclean.
Great Yarmouth	30.16	766.1	30.16	766.1	44	6.7		WNW			4		6					Raining	G. T. Watson.
Greenwich, Royal Obs'y	30.14	765.5	30.31	769.9	47.2	8.4		WSW			4		10					Nearly o'cast	The Staff, for G. B. Airy.
Guernsey	30.26	768.6	30.48	774.2	51	10.6		WNW			3		5					D. clouds	Dr. S. E. Hoskins, F. R. S.
Helston			30.53	775.4	50	10.0		NW			2		3c					Fine	M. P. Moyle.
Holyhead	30.30	769.6	30.35	770.9	50	10.0		WNW			6		10			0.07	1.8	Misty	John Tilston.
Jersey	30.24	768.1	30.54	775.7	50.4	10.2		WNW			4		8			Blank	Blank	Gloomy	J. Fisher.
Kew, Observatory			30.33	770.4	47.2	8.4		W	8	3.6			9					Dense haze	The Staff.
Kingstown	30.34	770.6	30.37	771.4	49	9.4		WNW			5		10					Overcast	George Mitchell.
Leicester, Museum			30.31	769.9	47.5	8.6		W			1		10					Overcast	Wm. J. Harrison, F. G. S.
Malta, (Mediterranean)	29.84	757.9	29.91	759.7	58.2	14.6		NE			4		6					D. clouds	Sgt. Fred. Travis, A. H.
Nairn	30.01	762.2	30.10	764.5	44	6.7		SW			1		10					Overcast	W. D. Penny. [C.
Nassau, (Bahamas)			30.19	766.8	71.8	22.1		NE			3		4					D. clouds	C. S. Duncombe.
Nottingham, Observatory	30.07	763.8	30.27	768.8	48.9	9.4		WNW			4		10k;d		W	0.063	1.60	Overcast	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.75	755.6	30.29	769.4	47.2	8.4		W			4		10					Overcast	Rev. Stephen Whitty
Oxford, Radcliffe Obs'y			30.32	770.1	48	8.9		W			2		10					Overcast	Mr. Lucas.
Plymouth	30.42	772.7	30.50	774.7	47.3	8.5		NW			1		10					Foggy	John Merrifield.
Roche's Point	30.44	773.2	30.48	774.2	47	8.3		WNW			2		5					⅗ clouded	W. Kennedy.
Saint Ann's Head																			John C. Walker.
Sandwick Manse, (Orkneys.)			30.06	763.5	44	6.7		W	7	3.1			2					D. clouds	Rev. C. Clouston, L.L. D
Scutari, Cemetery, (Turkey			30.23	767.8	50.2	10.1		NNE			2		10					Gloomy	Sergt. W. H. Lyne.
Sheffield	29.95	760.7	30.24	768.1	49.0	9.4		WNW			6		10			0	0	Overcast	W. F. Cooper.
Silloth Rectory	30.16	766.1	30.20	767.1	47.5	8.6	96	SW			3		10			0	0	Overcast	Rev. F. Redford, M. A.
Stonyhurst, Observatory					47.0	8.3		SW			2		7					Misty	Rev. S. J. Perry.
Stornoway, Lews C. (Hebr.)			30.05	763.3	49	9.4		WNW			1		10					Raining	John Smith.
Stratfield Turgiss	30.11	764.8	30.33	770.4	48.3	9.1		W			1		10					Squally	Rev. C. H. Griffith, F. M. S.
Thurso			30.03	762.7	45	7.2		Calm			0		10					Raining	John Trotter.
Truro, Royal Institution			30.51	774.9	50	10.0		NW			4		6					D. clouds	W. Newcombe.
Valencia, Observatory			30.51	774.9	50.5	10.3		WSW	11	4.9			10					D. clouds	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)																			Henry Mercer.
Cape Good Hope, Obs'y	29.99	761.7	30.03	762.7	73.6	23.1	59	NNW	11	4.9		2	4						The Staff, for E. J. Stone.
Hobart Town, (Tasmania)			29.56	750 8	59.0	15.0	72	NW			3		10k			0.04	1.0		Francis Abbott, F. R. A. S.
Leith, Restalrig Park																			Andrew Gibb.
Mauritius, Observatory	29.85	758.2	30.04	762.9	81.9	27.7	66	ESE	19.5	8.7		0	6		ENE	0.02	0.5	Squally	C. Meldrum.
Melbourne, Observatory	29.86	758.4	29.95	760.7	55.0	12.8	64	SW	14	6.3			4			0	0	Fine	R. L. J. Ellery.
Monach L't-house, (Hebrides)																			J. Youngclause.
North Unst, (Shetland Is.)																			Robert Burnet.

Note.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m.

Marine Series. Vessels.	Sea or swell. Height scale 0—9	Sea or swell. Direction from—	Weather	Observer
S. S. Algeria				Capt. W. Watson.
S. S. Batavia				Capt. J. E. Mouland.
Ship Camperdown				Capt. A. T. Miller.
Brig Catherine				Capt. Adam Smith.
Barque Celeste				Capt. D. F. McKechnie
S. S. Hibernia				Capt. W. R. Cato
Barque Maroon				Capt. A. T. Brown.
Ship Mikado				Capt. C. C. Prehn.
Royal Alice, N. 40° 15′, W. 70° 50′	7	SW	D. clouds	Capt. E. M. Hughes.
S. S. Seine				Capt. H. Manning.
Barque Sorata				Capt. Jas. J. Price.
Schooner Traveller				Capt. Alex Simpson.

Note.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	BAROMETER. Corrected for instrum'tal error and temperature. Inches.	BAROMETER. Corrected for instrum'tal error and temperature. Millimeters.	BAROMETER. Reduced to sea-level. Inches.	BAROMETER. Reduced to sea-level. Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount.. Up'er 0—10.	CLOUDS. Amount.. Low'r 0—10.	CLOUDS. Direction. Upper. From—	CLOUDS. Direction. Lower. From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	WEATHER.	OBSERVER
San José	26.17	664.7	.....	.....	68.4	20.2	83	NE	.....	.....	3	0	1ks;d	E	NE	0	0	.....	Federico Maison.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.91	759.7	29.96	760.9	38.7	3.7	98	S	.....	.....	2	.....	10	.....	.....	.....	.....	.....	.....
Fanöe	29.85	758.1	29.87	758.6	37.4	3.0	100	ENE	.....	.....	4	.....	10	.....	.....	.....	.....	Foggy	.....
Godthaab, (Greenland)	29.28	743.6	29.32	744.7	17.4	— 8.1	77	NNE	.....	.....	2	.....	9	.....	.....	.....	.....	.....	.....
Stykkisholm, (Iceland)	29.06	738.0	29.10	739.1	41.9	5.5	97	SE	.....	.....	7	.....	10	.....	.....	.....	.....	Raining	.....
Thorshavn, (Faröe)	29.97	761.2	30.00	762.1	41.2	5.1	92	S	.....	.....	3	.....	7	.....	.....	.....	.....	.....	.....
Vestervig	29.82	757.3	29.98	761.6	34.2	1.2	100	E	.....	.....	2	.....	10	.....	.....	.....	.....	Foggy	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the cooperation of the Director of the Paris Observatory, and the respective observers.

Alençon, Normal School	30.01	762.3	30.56	776.3	41.0	5	83	NW	.....	.....	1	.....	10	.....	.....	0	0	Covered	Collignon, Director.
Amiens, Normal School	30.28	769.2	30.40	772.1	48.6	9.2	86	W	.....	.....	3	.....	5	.....	W	0	0	Cloudy	Bonvarne, Director.
Avignon, Normal School	30.33	770.3	30.41	772.3	41.4	5.2	51	N	.....	.....	6	.....	0	.....	.....	0	0	Clear.	Mr. Giraud, Director
Bar-sur-Seine	29.92	760.0	30.53	775.4	34.2	1.2	93	SW	.....	.....	2	.....	10	.....	SW	.....	.....	Raining	C. Saillard.
Beaumette Obs'y (Angers)	30.36	771.2	30.54	775.7	45.5	7.5	97	SW	10.3	4.6	.....	.....	.....	.....	SW	0	0	.....	Albert Cheux.
Beauvais	30.13	765.2	30.42	772.7	44.2	6.8	89	WNW	.....	.....	3	.....	8	.....	WNW	0.020	0.50	Very cloudy	Normal School.
Besançon	29.67	753.5	30.03	777.9	29.5	— 1.4	.....	S	.....	.....	2	.....	0	.....	.....	0	0	Clear	Normal School.
Bourg-en-Bresse	29.70	754.4	30.02	777 8	35.4	1.9	96	NW	.....	.....	2	.....	.....	.....	N	0	0	Misty	Normal School.
Bourges, Normal School	30.05	763.2	30.03	778.1	36.3	2.4	93	SE	.....	.....	4	.....	5	.....	SE	0	0	Cloudy	A. Wagner, Director.
Brest, Naval Observatory	30.29	769.5	30.51	775.0	51.6	10.9	82	W	.....	.....	2	.....	9	.....	W	0.079	2.00	.....	The Staff.
Carcassonne, Normal School	30.17	766.3	30.00	777.3	42.8	6	42	E	.....	.....	4	.....	1	.....	E	0	0	Clear	Vateau, Director.
Caen	30.42	772.7	30.50	774.6	40.6	9.8	84	W	.....	.....	1	.....	1	.....	NNW	0	0	Clear	Normal School.
Chartres, Normal School	29.91	759.6	30.50	774.7	40.1	4.5	.....	SW	.....	.....	1	.....	10	.....	.....	0	0	Covered	Lequin, Director.
Châlons-sur-Marne, N. Sch'l	30.11	764.8	30.45	773.5	32.5	0.3	100	SW	.....	.....	3	.....	10n	.....	.....	0	0	Covered	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	29.18	741.2	30.61	777.4	39.6	4.2	61	NNE	.....	.....	1	.....	2	.....	.....	0	0	Slightly cl'dy	Alluard, Director.
Commercy, Normal School	29.54	750.3	30.47	773.9	34.3	1.3	96	WSW	.....	.....	4	.....	10	.....	WSW	0	0	Covered	Dr. Goulet, Director.
Commune de Gréasque*	29.21	741.9	30.35	770.9	42.3	5.7	53	SE	.....	.....	1	.....	2	.....	SW	0	0	¼ covered	M. Kina.
Grenoble	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Normal School.
La Roche-sur-Yon, N. School	30.39	771.8	30.61	777.5	40.3	4.6	74	N	.....	.....	1	.....	0	.....	.....	0	0	Clear	Mouillot, Director.
Le Mans, Normal School	30.24	768.1	30.57	776.4	40.3	4 6	90	WNW	.....	.....	2	.....	8	.....	N	0	0	Very cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.61	752.2	30.60	777.2	31.1	— 0.5	97	SW	.....	.....	1	.....	10	.....	.....	0	0	Foggy	Voudez, Director.
Lorient, Naval Observatory	30.52	775.1	30.61	777.6	53.2	11.3	78	SW	.....	.....	3	.....	10	.....	.....	0.003	1.6	Covered	T. Carré, Director.
Mâcon, Normal School	29.86	758.4	30.55	776.0	34.2	1.2	89	NNW	.....	.....	2	.....	0	.....	.....	0	0	Clear	M. Marchal, Director.
Metz	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. A. Schuster, Dir.
Mirecourt	29.39	746.6	30.51	774.9	32.2	0.1	97	SW	.....	.....	2	.....	10	.....	SE	0	0	Covered	Normal School.
Nismes, Normal School	30.23	767.9	30.45	773.3	45.7	7.6	66	NE	.....	.....	6	.....	0	.....	.....	0	0	Clear	Boyer, Director.
Orleans, Normal School	30.11	764.7	30.50	774.7	35.6	2	93	SSW	.....	.....	2	.....	10	.....	.....	0	0	Covered	Bernard, Director.
Paris, Observatory	30.22	767.6	30.47	774 0	38.7	3.7	95	WSW	.....	.....	1	.....	10	.....	W	Inap.	Inap.	Covered	National Observatory.
Privas	29.22	742.3	30.33	770.4	43.7	6.5	74	N	.....	.....	4	.....	1	.....	N	0	0	Clear.	Normal School
Rochefort, Naval Obs'y	30.63	778.0	30.66	778.8	34.9	1.6	89	SE	.....	.....	1	.....	10	.....	NW	0.04	1.	Covered	Lt. Decante, Director.
Rouen, Normal School	30.36	771.2	30.45	773.4	48 7	9.3	83	W	.....	.....	1	.....	10	.....	W	0.047	1.2	Covered	F. Lucard, Director.
Tarbes, Normal School	29.51	749.6	30.04	778 3	41.4	5.2	100	W	.....	.....	2	.....	0	.....	.....	0	0	Clear	T. Hugues, Director.
Villefranche	29.88	758.9	30.65	778.4	31.1	— 0.5	100	NNE	.....	.....	1	.....	5	.....	Calm	0	0	Cloudy	Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.82	757.3	29.84	758.0	79.3	26.3	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.12	3.	.....	L'Abbé Marchési.
Marseilles, Observatory	30.32	770.1	.....	.....	45.1	7.3	54	NW	.....	.....	2	.....	3	.....	.....	0	0	Partly cl'dy.	The Staff.
Mont-Louis	25.16	639.0	30.47	774.0	35.4	1.9	11	NW	14.9	6.66	.....	.....	3	.....	NNW	0	0	.....	Mr. Falguère.
Nice	.....	.....	30.29	769.4	51.6	10.9	52	Calm	.....	.....	0	.....	0	.....	.....	0	0	Clear.	Dr. A. Niepce.
Paris, Montsouris Obs'y	30.18	766.5	30.45	773.5	37.8	3.2	98	SW	.....	.....	2	.....	10	.....	.....	0	0	.....	Marié Davy, Director.
Perpignan	.....	.....	30.42	772.7	51.4	10.8	15	NW	22.4	10.00	.....	.....	5	.....	NW	0	0	.....	Dr. Fines.
Pic du Midi, (Summit,) H. P.	21.47	545.4	.....	.....	17.6	— 8.0	.....	N	.....	.....	4	.....	9	.....	.....	.....	.....	Fair	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.77	578.4	.....	.....	23.9	— 4.5	.....	N	.....	.....	3	.....	9	.....	.....	0	0	Fair	Gen'l de Nansouty.
Saint Maur, (near Paris)	30.30	769.7	30.47	773.9	37.6	3.1	98	SSW	.....	.....	1	.....	10	.....	.....	0.039	1.0	.....	E. Renou.
Toulouse, Observatory	29.92	760.0	30.67	778.9	29.7	— 1.3	100	NW	.....	.....	1	.....	10	.....	.....	0	0	Light fog	The Staff.
Tours	30.36	771.2	30.56	776.2	37.8	3.2	94	SW	.....	.....	1	.....	10	.....	W	0	0	.....	C. Marquet.
Versailles, (near Paris)	.....	.....	30.46	773.7	40.3	4.6	93	W.	.....	.....	1	.....	10	.....	.....	0,013	0.32	Rain & fog	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.00	762.0	30.02	762.6	55.2	12.9	95	ESE	6.0	2.7	.....	.....	10k	.....	.....	0.004	0.1	Covered	Marc Dechevrens, S. J.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published. At Mirecourt and Rochefort the cloud directions are apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10	Clouds. Amount. Up'er 0-10	Clouds. Amount. Low'r 0-10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg																			Prof. Dr. Hoh.
Berlin	29.92	760.0	30.11	764.8	38.3	3.5	89	SW			1		10			0.124	3.15	Raining	Prof. Arndt.
Breslau	29.74	755.5	30.28	769.1	37.2	2.9	81	SSW			3		10			0	0		Royal University Obs'y.
Carlsruhe	29.92	759.9	30.37	771.4	36 0	2.2	69	SW			6		10			0.669	17.0	Snowing	Albert Senz.
Cassel	29.84	757.8	30.21	767.3	35.4	1.9	66	SSW			6		10	SW		0.051	1.31		Dr. H. Möhl.
Crefeld	30.04	762.9	30.20	767.0	40.1	4.5	94	W			5		10			0.24	6.	Raining	Director Lose.
Emden	30.10	764.5	30.13	765.4	43.5	6.4	96	W			2		10	N		0.197	5.0		Prof. Prestel.
Frankfort on the Main	29.96	760.9	30.35	770.8	32.9	0.5		SW			3		10			Inap.	Inap.	Snowing	Physical Society.
Friedrichshafen	29.087	738.67	30.52	775.2	33.1	0.6	85	W			4		9	W		0	0		M. Wilhelm.
Hamburg	29.93	760.3	30.00	762.1	42.8	6.0	97	WSW			3		9n	WNW		0.311	7.9	Raining	Captain F. Hegemann.
Kiel	29.90	759.5	29.92	759.9	43.3	6.3	92	W			2		10			0.295	7.51		Prof. G. Karsten.
Königsberg, (Prussia)	30.05	763.3	30.13	765.3	35.8	2.1	89	SW								0.032	0.83	Snowing	Prof. E. Luther.
Köslin			30.06	763.5	37.4	3.0		SW			2		4			0.201	5.1		H. Müller.
Leipsic, Observatory	29.81	757.1	30.25	768.3	36.5	2.5	82	SW			3		9	W				Graupelnd.	Prof. Bruhns.
Memel, Naval School	30.05	763.2	30.10	764.4	38.3	3.5	72	WSW			4		6ok;ks	SW				Clearing	Reinbrech von Skalweit.
Neufahrwasser	30.10	764.6	30.12	765.0	36.1	2.3	94	SSW			2		2			0.039	1.0	Raining	A. Lothes.
Posen	29.93	760.2	30.23	767.8	38.3	3.5	79	W			5					0	0	Covered	Dr. Magener.
Strassburg Obs., (in Alsace	29.89	759.3	30.48	774.2	34.0	1.1	80	SW			2		10					Snowing	Dr. Schur.
Stuttgart	29.43	747.4	30.41	772.4	36.9	2.7	65	W			1		10			0.339	8.6	Snowing	Prof. Schoder.
Treves, (Trier)	29.71	754.7	30.24	768.1	34.3	1.3	93	SW			5		10			0.449	11.4	Foggy	Prof. Flesch.
Weissenburg, (Bavaria)	28.81	731.7	30.40	772.1	33.1	0.6	76	SSW	1	0.5			10		W	0	0	Covered	Dr. Von Bebber.
Wustrow, Naval School	29.98	761.5	30.02	762.5	39.4	4.1	94	S			3		10			0.031	0.81	Covered	E. F. Schütz.
German Naval Series.																			

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Königsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4. Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines, Königsberg, Posen and Wustrow in cubic zolls. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.82	757.5	30.22	767.6	55.4	13.0		NE			1.5							½ Clear	Dr. J. F. J. Schmidt.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and wind-force; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.91	759.8	29.96	761.1	76.0	24.4	60	ENE	21.0?	9.4?			2			0	0	D. clouds	
Deesa	29.49	749.0	29.97	761.3	79.3	26.3	57	Calm					0			0	0	Blue sky	
Bombay	29.86	758.5	29.90	759.4	81.5	27.5	77	WNW	6.0	2.7			10		S	0	0	Overcast	
Poona	27.92	709.3	29.93	760.3	78.6	25.9	61	SE					10		S	0	0	D. clouds	
Lahore	29.31	744.5	30.10	764.4	56.6	13.7	78	Calm	1.1	0.5			2			0	0	Blue sky	
Belgaum	27.40	695.8	29.95	760.6	74.9	23.8	66	E	9.0	4.0			3	W		6	0	D. clouds	
Bangalore																			
Roorkee	29.12	739.5	30.06	763.6	57.8	14.3	88	Calm	0.8	0.4			5			0	0	Foggy	
Agra	29.48	748.7	30.07	763.8	60.8	16.0	66	N								0	0		
Trichinopoly																			
Nagpur	28.93	734.9	29.99	761.7	75.9	24.4	65	Calm	1.2	0.5			5	NE		0	0	D. clouds	
Madras																			
Lucknow	29.68	753.9	30.07	763.9	57.6	14.2	81	Calm	1.2	0.5			0			0	0	Blue sky	
Allahabad	29.72	755.0	30.05	763.3	59.7	15.4	79	Calm	0.8	0.4			0			0	0	Blue sky	
Patna	29.91	759.7	30.10	764.5	64.0	17.8	53	W	1.1	0.5			6	W	W	0	0	D. clouds	
Hazaribagh	27.97	710.4	30.06	763.5	61.0	16.1	49	WNW	6.9	3.1			10			0	0		
Cuttack	29.96	760.9	30.04	763.0	78.2	25.7	41	NNW	2.0	0.9			2			0	0	D. clouds	
Calcutta (Alipore)	30.01	762.1	30.03	762.7	60.3	15.7	69	NNW	1.0	0.4			0			0	0	Blue sky	
Goalpara	29.57	751.1	29.97	761.3	67.8	19.9	67	Calm	0.6	0.3			6	W		0	0	D. clouds	
Chittagong	29.90	759.4	29.99	761.8	68.6	20.4	65	WNW	1.7	0.8			0			0	0	Blue sky	
Sibsagar	29.67	753.7	30.03	762.6	61.0	16.1	91	ENE	0.4	0.2			10			0	0	D. clouds	
Rangoon																			
Jubbulpore	28.65	727.7	30.05	763.2	72.0	22.2	55	NE	1.5	0.7			2	NE		0	0	D. clouds	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 1—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	22.33	567.2	30.42	772.7	23.2	— 4.9	39	WSW			2		0			0	0		Ab. Dom. Mongini.
Stelvio	22.27	565.7	30.40	772.6	16.2	— 8.8		SSE			1		0			0	0		Signora Ernesta Manfredi.
Udine	29.97	761.3	30.40	772.2	41.7	5.4	36	NE	2.5	1.1			1			0	0		Prof. Giovanni Clodig.
Padua	30.30	769.5	30.41	772.4	41.0	5.0	48	N	6.9	3.1			4			0	0		Prof. Dott. Lorenzoni.
Vicenza	30.20	767.0	30.40	772.1	42.1	5.6	44	NW	0	0			4	W		0	0		Conte Alm. Da Schio.
Verona	30.20	767.0	30.43	772.9	44.2	6.8	83	NE	0	0			0			0	0		Dott. B. Bertoncelli.
Bergamo	29.05	737.8	30.43	773.0	38.5	3.6	64	Calm			0		4			0	0		Prof. Trionfini Carlo.
Domodossola																			Prof. Giuseppe Calza.
Milan	29.91	759.6	30.45	773.5	41.2	5.1		NE			1		4	SSE		0.028	0.7		Ab. Gio. Capelli.
Pavia	30.08	764.0	30.45	773.3	31.1	— 0.5	92	SW			1		5			0	0		Prof. Gio. Cantoni.
Moncalieri	29.49	749.1	30.45	773.3	37.4	3.0	79	N	0.7	0.3			5	SE		0	0		Prof. P. F. Denza.
Mondovi	28.42	721.8	30.42	772.6	35.1	1.7	55	NNW			2		1	W		0	0		Prof. D. C. Bruno.
Porto Maurizio	30.09	764.3	30.32	770.1	52.9	11.6	32	SSW			2		4			0	0		Prof. L. Vassallo.
Genoa	30.13	765.3	30.31	769.8	48.2	9.0	21	NE	10.5	4.7			0			0	0		Prof. G. M. Garibaldi.
Piacenza	30.18	766.6	30.45	773.5	30.9	— 0.6	100	NW	0	0			9			0	0		Dott. G Manzi.
Parma	30.10	764.6	30.44	773.1	39.9	4.4	92	NNE			2		2			0	0		Prof. P. Pigorini.
Florence	30.09	764.2	30.35	771.0	44.6	7.0	45	NE			4		0			0	0		Cav. F Meucci.
Leghorn	30.23	767.9	30.32	770.1	46.8	8.2	35	ENE	11.9	5.3			0			0	0		Prof. P. Monte.
Siena	29.14	740.1	30.39	771.9	43.2	6.2	57	ENE	6.9	3.1			1	E		0	0		Prof. L. Toscani.
Urbino	28.77	730.7	30.39	772.0	38.8	3.8	67	NNE			2		3			0.118	3.0		Prof. P. Serpieri.
Pesaro	30.33	770.4	30.38	771.7	43.0	6.1	73	NW	32.2	14.4			4	NE		0	0		Prof. Luigi Guidi.
Ancona	30.22	767.6	30.33	770.4	45.3	7.4	74	WNW			6		6	NW		0	0		Prof. F. DeBosis.
Grosseto	30.18	765.4	30.25	768.3	48.4	9.1	53	ENE			6		2	NE		0.157	4.0		Avv. P. Ponticelli.
Rome	29.99	761.8	30.17	766.4	54.5	12.5	43	N	15.0	6.7			0			0	0		Prof. P. A Secchi.
Naples, O. U	29.94	760.4	30.14	765.6	54.3	12.4	50	ENE			6		6	NE		0.047	1.2		Prof. L. Palmieri.
Lecce	29.80	757.0	30.077	763.67	56.5	13.6	65	NE	6.3	2.8			10			0.028	0.7		Prof. C. De Giorgi.
Cosenza	29.21	742.0	30.12	765.1	50.7	10.4	72	SE	1.8	0.8			10			0.374	9.5		Prof. F. D. Conti.
Cagliari	29.91	759.6	30.10	764.6	58.1	14.5	64	SE			2		1			0.256	6.5		Prof. A. Pacinotti.
Riposto, (Sicily)	29.95	760.8	30.00	762.0	59.5	15.3	73	NW			2		10	S		0	0		Prof. F. Cafiero.
Palermo	29.69	754.0	29.95	760.6	55.4	13.0	91	NE	24.8	11.1			10			0.218	5.4		Prof. G. Cacciatore.
Caltanissetta	27.93	709.4	29.91	759.6	50.4	10.2	84	NNE			4		10			0.567	14.4		Prof. A. Pagani.
Syracuse	29.80	756.9	29.87	758.8	62.1	16.7	82	SE			4		10	E		0.449	11.4		Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.60	751.8	30.15	765.9	50.7	10.4	50	NNE	13.6	6.1			7			0	0		Prof. F. Brioschi.

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,543.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Siena, 348.5 m., or 1,143.3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Tokei (Yeddo)																			The Observatory.
Tokei (Yeddo) University	29.99	761.7	30.09	764.8	45	7.2	92					2cs				0.12	3.0	Misty	Prof P. V. Veeder.

MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Señor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Aguascalientes																			I. N. Marin, M. D.
Córdoba																			C. Peña, M. D.
Cuernavaca																			L. Castillo, A. E.
Guadalajara																			Prof. L. Perez.
Guanajuato																			Prof. V. Fernandez.
Leon																			Prof. M. Leal.
Mexico	23.16	588.3	30.30	769.5	48.4	9.1	87	Calm	0	0		0	Haze			0	0	Hazy	Central Observatory.
Orizaba																			N. N.
Orizaba																			I. Orozco, M. D.
Pabellon, (Aguascalts)																			M. V. de Leon, M. E.
Puebla																			Prof. B. Gonzalez.
Toluca																			Prof. C. Velazquez.
Tlacotalpam																			Prof. F. R. Bayly.
San Luis Potosi																			G. Barroeta, M. D.
Vera-Cruz																			Prof. J. Rossell.
Zacatecas																			J. A. Bonilla, M. E.
Puebla, (Catholic Institute)																			P. Spina. [M. M. D. D.
Morelia																			M. Tena, F. L. Páramo

Note.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,290 m., or 7,512.9 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabell n, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosí, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

Furnished by the cooperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	30.24	768.2	30.24	768.2	44.6	7.0		W			4					0.063	1.6		
Groningen	30.02	762.5	30.08	763.9	43.5	6.4										0.087	2.2		
Helder	30.09	764.2	30.09	764.2	44.8	7.1		WSW			4					0.217	5.5		
Hellevoetsluis			30.21	767.4	43.5	6.4	97	W			3								
Utrecht	30.13	765.3	30.18	766.5	44.1	6.7	96	W			4		10			0.429	10.9	Dull	H. v d Brink.

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	29.88	759.0	29.94	760.4	37.8	3.2	87	Calm	0	0	.....	.....	4	.....	.....	0.102	2.6	.....	
Brône	29.90	759.4	29.94	760.4	30.2	— 1.0	76	ENE	7	3	.....	.....	6	.....	.....	0.083	2.1	.....	
Christiania	29.87	758.7	30.03	762.7	18.3	— 7.6	86	NNE	0	0	.....	.....	7	.....	.....	0.020	0.5	.....	
Tromsö	29.93	760.1	29.97	761.2	25.5	— 3.6	87	Calm	0	0	.....	.....	0	.....	.....	0	0	.....	

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	30.31	769.9	30.50	774.7	64.2	17.9	90	SSE	2.5	1.1	.....	.....	3	.....	.....	0	0	.....	Dr. J. A. Sampaio.
Campo Major	29.44	747.7	30.49	774.4	48.0	8.9	43	NE	9.8	4.4	.....	.....	1	.....	.....	0	0	.....	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.23	767.7	30.30	769.5	66.6	19.2	47	SE	3.8	1.7	.....	.....	6	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	30.09	764.2	30.46	773.6	48.0	8.9	55	NE	22.4	10.0	.....	.....	2	NW	.....	0	0	.....	The Staff.
Ponta Delgada, (Azores)	30.47	774.0	30.54	775.8	66.2	19.0	77	ESE	3.1	1.4	.....	.....	6	.....	.....	0	0	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 9 h. 6 m., p. m.

Naval Series. Vessels.	Sea or swell. Height scale 0–9	Sea or swell. Direction from—		
S. S. Bartholomew Dias	.....	.....	.....	R. A. T. Pinha, Com'd't.
S. S. India	.....	.....	.....	A. D. Pedroso, Com'd't.
S. S. Mindello	.....	.....	.....	J. F. R. R. Bastos, Com'd't.
S. S. Sado	.....	.....	.....	A. N. P. Sampaio, Com'd't.
S. S. Sá da Bandeira	.....	.....	.....	F. Texeira da Silva, Com'd't.
S. S. Tejo	.....	.....	.....	F. J. Ferreina, dos Amas, Com'd't
.....	.....	.....	.....	.....

Note.—The originals, except for S. S. Tejo, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.82	757.3	30.26	768.6	34.2	1.2	94	SSW	11	5	.....	.....	10n	.....	.....	.....	.....	Light rain	Astronomical Obs.
Wilna	29.78	756.5	30.23	767.7	34.2	1.2	98	Calm	0	0	.....	.....	10	.....	.....	.....	.....	Heavy clouds	Astronomical Obs.
Dorpat	29.86	758.4	30.11	764.9	32.4	0.2	97	S	7	3	.....	.....	10n	.....	.....	.....	.....	.....	Prof. Dr. Weihrauch.
St. Petersburg	30.06	763.4	30.07	763.8	28.9	— 1.7	96	SSW	9	4	.....	.....	9n;ks	.....	.....	.....	.....	.....	Central Physical Obs.
Kuopio	29.66	753.3	30.00	761.9	28.0	— 2.2	100	E	7	3	.....	.....	10	.....	.....	.....	.....	Raining	Ch. Forsten.
Zieff	29.71	754.5	30.38	771.6	30.9	— 0.6	92	Calm	0	0	.....	.....	9ks;n	.....	.....	.....	.....	Dust-haze	Physical Cabinet.
Nikolaiev	30.30	769.6	30.37	771.4	34.0	1.1	98	NE	13	6	.....	.....	10n	.....	.....	.....	.....	.....	Kurdakof.
Kertch	30.28	769.2	30.30	769.7	40.5	4.7	90	ENE	4	2	.....	.....	10	.....	.....	.....	.....	.....	Lagorio.
Moscow	29.93	760.3	30.54	775.7	16.2	— 8.8	91	S	9	4	.....	.....	10s	.....	.....	.....	.....	Light snow	Meteorological Obs.
Lugan	30.27	768.8	30.49	774.4	27.3	— 2.6	79	ESE	22	10	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Archangel	30.19	766.9	30.21	767.4	17.2	— 8.2	94	SE	22	10	.....	.....	10	.....	.....	.....	.....	.....	Ogorodnikof.
Tiflis	29.29	744.0	30.83	783.0	29.3	— 1.5	88	Calm	0	0	.....	.....	10	.....	.....	.....	.....	Snowing	Physical Observatory.
Astrakhan	31.09	789.7	31.01	787.6	11.8	—11.2	65	ESE	25	11	.....	.....	2ks	.....	.....	.....	.....	.....	Sebastianof.
Kasan	30.84	783.3	31.15	791.1	4.1	—15.5	67	S	9	4	.....	.....	4	.....	.....	.....	.....	.....	Physical Cabinet.
Orenburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Tschernischef.
Ekaterinburg	30.18	766.5	31.26	794.0	0.9	—17.3	47	WNW	27	12	.....	.....	10	.....	.....	.....	.....	Light clouds	Meteorological Obs.
Nukuss	30.95	786.0	31.22	793.0	— 9.8	—23.2	67	NNE	16	7	.....	.....	0	.....	.....	.....	.....	.....	
Kasaly	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Bobrof.
Tashkend	29.32	744.8	31.32	795.4	— 1.1	—18.4	89	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Michelson.
Barnaul	30.97	786.5	31.63	803.8	—54.4	—48.0	74	S	2	1	.....	.....	0	.....	.....	.....	.....	.....	Meteorological Obs.
Yeniseisk	31.15	791.1	30.54	801.2	—36.8	—38.2	83	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Marks.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Usolzef.
Oorga	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Mossin.
Krotkowo*	30.66	778.7	31.19	792.1	1 8	—16.8	35	S	13	6	.....	.....	1s	.....	.....	.....	.....	.....	Cand. Fatjanow.
Peking, (China)	30.37	771.5	30.52	775.1	28.2	— 2.1	63	Calm	0	0	.....	.....	8n	.....	.....	.....	.....	.....	Physical Observatory
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Vladivostock	30.23	767.7	30.26	768.7	16.3	— 8.7	66	NW	16	7	.....	.....	7c	.....	.....	.....	.....	Lunar corona	
Nikolaievsk, on the Amoor	.....	.....	.....	.....	—24.7	—31.5	.....	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall; for Krotkowo, the barometer reduced to freezing but not to sea-level. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 494.27 m., or 1,621.3? ft.; Irkutsk, 502 m., or 1,726 ft.; Nertchinsk, 592.07 m., or 1,942.27 ft.; Oorga, 1,281.07 m., or 4,202.67 ft. * N. 53° 47′, E. 48° 34′.

SPANISH SERIES.

Furnished by the cooperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Rave, Director.
Bilbao, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Manuel de Naveran
Burgos, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Domingo Martin y Perez.
Madrid, Royal Observatory	28.20	716.3	30.59	776.9	41.0	5.0	32	NE	3.7	1.67	.....	1	0	NE	.....	0	0	Light clouds	The Staff.
Murcia, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Olayo Diaz, Director.
Santiago, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	30.09	764.3	30.16	766.0	68.1	20.1	89	Calm	0	0	.....	0	2k	.....	E	0	0	Clear.	Benito Vines, S. J.
San Fernando, Naval Obs'y	30.28	769.2	30.38	771.7	59.7	15.4	62	E	16.8	7.5	.....	0	4	.....	E	0	0	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de PortoRico, W. I.	.....	.....	29.95	760.6	79.2	26.2	89	E	9.2	4.13	.....	4kn	5kn	E	E	1.683	42.75	Cloudy	Leonardo de Tejeda, Chief of Engineers.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the cöoperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.93	760.3	29.97	761.3	30.2	— 1.0	.....	Calm	.....	.....	0	.....	10	.....	.....	.....	.....	Snowing	
Umea	29.87	758.7	29.92	760.0	27.3	— 2.6	96	Calm	.....	.....	0	.....	10	.....	.....	0	0	.....	
Hernosand	29.92	759.9	29.97	761.2	23.0	— 5.0	86	.....	.....	.....	.....	.....	10	.....	.....	0.024	0.6	.....	
Stockholm	29.72	755.0	29.90	759.5	32.7	0.4	96	N	.....	.....	2	.....	10	.....	.....	.....	.....	Snowing	
Wisby	29.93	760.1	29.98	761.6	36.0	2.2	82	WNW	.....	.....	6	.....	7	.....	.....	0.008	0.2	.....	
Sub-Series.																			
Upsala	29.85	758.1	29.92	760.0	28.9	— 1.7	98	NNW	2.5	1.1	.....	.....	10	.....	.....	0.122	3.11	Snowing	Dr. Hildebrandsson.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the cooperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	29.07	738.4	30.56	776.1	35.1	1.7	72	N	.....	.....	1	.....	0	.....	.....	0	0	Clear.	The Observatory.
Zurich	28.81	731.7	30.52	775.2	32.7	0.4	71	S	.....	.....	1	.....	2	.....	.....	0.764	19.4	Clear	The Observatory.

Note.—For Geneva the corresponding departures from the normal values are: Barometer, +10.9 mm; Thermometer, —0.6 cent.; Relative Humidity, —8 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,389 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	30.29	769.3	50.4	10.2	78	N	15	6.5	.....	.....	10	.....	N	0.118	3.0	.....	The Observatory.
Fao, (Persian Gulf)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salonica	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	B. Stefanidès.
Valona	.....	.....	30.14	765.5	56.1	13.4	.....	W	.....	.....	1	.....	10	.....	.....	0.28	7.	Raining	A. Bertrand.
Varna	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Imperial Observatory.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	30.10	764.5	30.22	767.5	65.8	18.8	61	S	.....	.....	1	.....	1k	.....	S	0	0	D. clouds	Prof. C. V. A. Van Dyck

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Hon. J. Ferguson.
Brockville, Ontario	29.74	755.4	30.05	763.3	39	3.9	.....	Calm	0	0	.....	.....	8s	.....	W	0	0	Cloudy	W. R. Bigg.
*Chatham, N. B	.....	.....	29.47	748.5	31	— 0.6	91	SW	4	1.8	.....	.....	10ks	.....	W	0.01	0.3	Cloudy	G. A. Blair.
Charlottetown, P. E. Island	29.45	748.0	29.49	749.0	36	2.2	89	SW	12	5.4	.....	.....	10s	.....	S	0	0	Cloudy	H. J. Cundall, C. E.
Cornwall, Ontario	29.75	755.6	29.94	760.5	39.6	4.2	74	SW	.....	.....	1	7cs	8s	W	.....	0	0	Clearing	James Smith, M. A.
Dalhousie, N. B	29.37	746.0	.....	.....	.....	.....	.....	W	.....	.....	2	.....	.....	.....	.....	0.20	5.1	Gloomy	H. A. Johnson.
Esquimault, B. C	29.55	750.6	29.59	751.6	49.8	9.9	96	N	.....	.....	.....	.....	10	.....	.....	0	0	Cloudy	W. H. Bevis.
*Father Point, Quebec	29.50	749.3	29.52	749.8	32	0.0	95	SW	24	10.7	.....	.....	8n	.....	SW	0.15	3.8	Cloudy	J. McWilliams.
Fredericton, N. B	29.56	750.8	29.62	752.3	38.3	3.5	71	W	10.0	4.5	.....	.....	4cs	.....	W	Inap.	Inap.	Fair	Prof. Harrison.
*Fort Garry, Manitoba	28.91	734.3	29.77	756.1	26	— 3.3	84	W	14	6.3	.....	0	0	.....	.....	0	0	Clear	James Stewart.
Goderich, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	H. J. Strang, M. A.
Granton, Ontario	28.99	736.3	30.14	765.5	33	0.6	100	Calm	.....	.....	0	0	0	.....	.....	0	0	Foggy	James Grant.
*Halifax, N. S	29.44	747.8	29.58	751.3	39	3.9	91	W	13	5.8	.....	.....	10ks	.....	W	0	0	Cloudy	F. Allison, M. A.
Hamilton, Ontario	29.80	756.9	30.18	766.6	40.7	4.8	84	SW	.....	.....	3	.....	.....	.....	.....	0	0	Clear.	Geo. Dickson, M. A
Heart's Content, N. F	29.76	755.9	29.78	756.4	29	— 1.7	88	NE	.....	.....	2	.....	10	.....	.....	0	0	Overcast	E. Weedon.
*Kingston, Ontario	29.72	754.9	30.07	763.8	38	3.3	81	W	2	0.9	.....	5cs	2s	Calm	Calm	Inap.	Inap.	Cloudy	S. Woods, M. A.
Little Glace Bay, N. S	29.47	748.5	29.51	749.5	31.6	— 0.2	.....	S	5	2.2	.....	.....	10n	.....	.....	.....	.....	Raining	C. H. Rigby.
*Montreal, Quebec	29.67	753.6	29.87	758.7	39	3.9	74	W	22	9.8	.....	5cs	5s	W	.....	0.04	1.0	Cloudy	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.39	746.5	30.12	765.0	30	— 1.1	96	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	Rev. R. Mosley.
Peterboro, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. F. Jeffers, B. A.
Port Dover, Ontario	29.44	747.8	30.15	765.8	39	3.9	100	W	7	3.1	.....	Haze	Haze	.....	.....	0	0	Hazy	H. Morgan.
Port Hastings, N. S	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Peter Grant.
Port Stanley, Ontario	29.48	748.8	30.15	765.8	32	0.0	97	W	1	0.4	.....	.....	Fog	.....	W	0	0	Foggy	M. Payne.
*Quebec, Quebec	29.38	746.2	29.71	754.6	36	2.2	100	SW	12	5.4	.....	.....	10n	.....	SW	0.06	1.5	Light rain	Capt. Ashe, R. N
*Rockliffe, Ontario	29.58	751.3	30.05	763.3	37	2.8	76	N	6	2.7	.....	.....	8s	.....	NW	Inap.	Inap.	Fair	W. H. McIntyre.
St. John, N. B	29.45	748.0	29.62	752.3	35	1.7	90	SW	5	2.2	.....	0	6ks	.....	.....	0	0	Clearing	G. Murdock, C. E.
*Saugeen, Ontario	29.38	746.2	30.10	764.5	39	3.9	93	Calm	0	0	.....	.....	10ks	.....	N	0	0	Cloudy	K. Stewart.
Stayner, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. J. Cole.
Stratford, Ontario	28.87	733.3	30.20	767.1	32.6	0.3	99	Calm	0	0	.....	.....	Fog	.....	.....	0	0	Foggy	C. J. MacGregor, M. A.
*Sydney, C. B	29.51	749.5	29.54	750.3	36	2.2	92	S	8	3.6	.....	.....	10n	.....	SW	0	0	Cloudy	T. C. Hill.
*Toronto, Ontario	29.73	755.1	30.13	765.3	35	1.7	85	SW	2	0.9	.....	0	Haze	.....	.....	0	0	Clear	Magnetic Observatory.
Windsor, N. S	29.56	750.8	29.66	753.4	37.0	2.8	90	S	10	4.5	.....	0	5k	.....	.....	0	0	Clear	Prof. John E. Oram.
Woodstock, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Montgomery.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	29.0	— 1.7	.....	S	.....	.....	.....	.....	10n	.....	.....	0.06	1.5	Threatening	John Delany.

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

By authority of the **SECRETARY OF WAR.**

UNITED STATES SERIES.

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	BAROMETER. Corrected for instrum'tal error and temperature. Inches.	BAROMETER. Corrected for instrum'tal error and temperature. Millimeters.	BAROMETER. Reduced to sea-level. Inches.	BAROMETER. Reduced to sea-level. Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Upper. From—	CLOUDS. Direction. Lower. From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	WEATHER.	OBSERVER.
Albany, New York	29.76	755.9	29.99	761.7	48	8.9	77	NW	14	6.3	.....	.....	10ks	.....	NW	0.05	1.3	Cloudy	
Alpena, Michigan	29.45	748.0	30.12	765.0	32	0.0	89	Calm	0	0	.....	0	5s	.....	NW	0	0	Fair	
Atlantic City, New Jersey	30.10	764.5	30.12	765.0	47	8.3	69	W	6	2.7	.....	2cs	0	W	.....	Inap.	Inap.	Clear	
Augusta, Georgia	30.18	766.6	30.38	771.6	41	5.0	91	W	2	0.9	.....	Haze	Sm'e	Calm	Calm	0	0	Smoky	
Baltimore, Maryland	30.11	764.8	30.16	766.1	51	10.6	59	SW	5	2.2	.....	2c	5s	Calm	Calm	0	0	Fair	
Barnegat, New Jersey	30.07	763.8	30.09	764.3	45	7.2	60	W	14	6.3	.....	8cs	Haze	W	Calm	0	0	Fair	
Bismarck, Dakota	28.06	712.7	29.78	756.4	27	— 2.8	88	E	4	1.8	.....	0	5s	.....	E	0	0	Fair	
Boise City, Idaho	27.17	690.1	30.05	763 3	27	— 2.8	77	SW	4	1.8	.....	2k	0	Calm	.....	0	0	Fair	
Boston, Massachusetts	29.71	754.6	29.87	758.7	51	10.6	59	W	8	3.6	.....	8c	Haze	W	.....	Inap.	Inap.	Fair	
Brackettville, Texas	28.96	734.0	29.90	759.4	68	20.0	74	SE	6	2.7	.....	.....	10s	.....	SE	0.01	0.3	Cloudy	
Breckenridge, Minnesota	28.89	733.8	29.93	760.2	23	— 5.0	86	S	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Brownsville, Texas	30.08	764.0	30.15	765.8	67	19.4	94	SE	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Buffalo, New York	29.39	746.5	30.10	764.5	41	5.0	100	SW	9	4.0	.....	0	0	.....	.....	0	0	Clear;heavy dew.	
Burkes, Arizona	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Burlington, Vermont	29.64	752.8	29.90	759.4	44	6.7	67	NW	6	2.7	.....	.....	10s	.....	W	0	0	Cloudy	
Cairo, Illinois	29.83	757.7	30.23	767.8	55	12.8	74	S	6	2.7	.....	8k	0	S	.....	0	0	Fair	
Camp Grant, Arizona	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Camp Verde, Arizona	26.81	681.0	30.30	769.6	45	7.2	100	W	.....	.....	.....	.....	Fog	.....	Calm	0.63	13.5	Foggy	
Campo, California	27.39	695.7	29.96	761.0	36	2.2	90	NE	2	0.9	.....	0	2s	.....	Calm	0.10	2.5	Fair	
Cape Hatteras, N. Carolina	30.30	769.6	30.30	769.6	58	14.4	70	W	12	5.4	.....	2c	0	W	.....	0	0	Fair	
Cape Henry, Virginia	30.19	766.8	30.21	767.3	52	11.1	73	SW	18	8.0	.....	0	0	.....	.....	0	0	Clear	
Cape Lookout, N. Carolina	30.31	769.9	30.33	770.4	56	13.3	93	W	5	2.2	.....	0	2ks	.....	W	0	0	Fair	
Cape May, New Jersey	30.11	764.8	30.14	765.5	48	8.9	77	SW	18	8.0	.....	.....	8s	.....	W	0	0	Cloudy	
Charleston, South Carolina	30.30	769.6	30.37	771.4	53	11.7	86	E	2	0.9	.....	0	Sm'e	.....	Calm	0	0	Clear	
Cheyenne, Wyoming	28.07	608.8	29.91	759.7	31	— 0.6	69	W	4	1.8	.....	0	5s	.....	W	0	0	Fair	
Chicago, Illinois	29.39	746.5	30.10	764.5	38	3.3	81	SW	5	2.2	.....	0	Fog	.....	Calm	0	0	Foggy	
Cincinnati, Ohio	29.51	749.5	30.15	765.8	53	11.7	86	SW	1	0.4	.....	4k	6s	W	SW	Inap.	Inap.	Cloudy	
Cleveland, Ohio	29.44	747.8	30.17	766.3	46	7.8	85	S	9	4.0	.....	0	1s	.....	Calm	0.03	0.8	Clear	
Concho, Texas	28.14	714.7	29.8	756.9	63	17.2	88	SE	4	1.8	.....	8c	0	SE	.....	0	0	Cloudy	
Corsicana, Texas	29.67	753.6	30.13	765.3	63	17.2	94	S	7	3.1	.....	.....	10s	.....	Calm	0.02	0.5	Cloudy	
Davenport, Iowa	29.46	748.3	30.13	765.3	35	1.7	79	Calm	0	0	.....	.....	Fog	.....	Calm	0	0	Foggy	
Denison, Texas	29.33	745.0	30.12	765.0	61	16.1	94	SE	6	2.7	.....	.....	10ks	.....	SE	0.10	2.5	Cloudy	
Denver, Colorado	24.71	627.6	29.93	760.2	36	2.2	62	S	4	1.8	.....	.....	10s	.....	Calm	0	0	Cloudy	
Detroit, Michigan	29.43	747.5	30.12	765.0	37	2.8	100	Calm	0	0	.....	.....	Fog	.....	Calm	0.02	0.5	Dense fog	
Dodge City, Kansas	27.38	695.4	29.73	755.1	36	2.2	100	Calm	6	0	.....	.....	Fog	.....	Calm	0	0	Foggy	
Dubuque, Iowa	29.35	745.2	30.12	765.0	30	— 1.1	78	Calm	0	0	.....	0	Fog	.....	Calm	0	0	Foggy	
Duluth, Minnesota	29.30	744.2	30.00	762.0	31	— 0.6	79	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Eagle Pass, Texas	29.28	743.7	30.01	762.2	65	18.3	100	SE	8	3.6	.....	.....	10s	.....	Calm	0.10	2.5	Cloudy	
Eastport, Maine	29.59	751.5	29.66	753.4	41	5.0	65	W	5	2.2	.....	8k	0	NW	.....	0	0	Fair	
Erie, Pennsylvania	29.49	749.7	30.12	765.0	45	7.2	92	SW	6	2.7	.....	8c	Haze	W	.....	0.13	3.3	Fair	
Escanaba, Michigan	29.43	747.5	30.11	764.8	30	— 1.1	78	N	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Florence, Arizona	28.45	722.6	30.05	763.3	55	12.8	68	Calm	.....	.....	.....	.....	10s	.....	Calm	0.25	6.3	Cloudy	
FortBayard, New Mexico	24.11	612.4	30.11	764.8	41	5.0	91	NE	4	1.8	.....	0	5ks	.....	NE	0.19	4.8	Fair	
Fort Craig, New Mexico	25.56	649.2	.....	.....	38	3.3	81	NW	2	0.9	.....	0	0	.....	.....	Inap.	Inap.	Clear	
Fort Gibson, Indian Ter	29.55	750.6	30.09	764.3	57	13.9	87	S	5	2.2	.....	.....	10n	.....	S	0.05	1.3	Light rain	
Fort Griffin, Texas	28.81	731.8	30.06	763.5	60	15.6	88	Calm	0	0	.....	.....	10s	.....	Calm	0	0	Cloudy	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	28.85	732.8	29.95	760.7	56	13.3	100	S	6	2.7	.....	.....	Fog	.....	S	0	0	Cloudy	
Galveston, Texas	30.16	766.1	30.20	767.1	62	16.7	97	SE	10	4.5	.....	0	1s	.....	Calm	0	0	Clear	
Grand Haven, Michigan	29.42	747.3	30.09	764.3	33	0.6	89	Calm	0	0	.....	.....	Fog	.....	Calm	0	0	Foggy	
Indianapolis, Indiana	29.34	745.2	30.12	765.0	53	11.7	79	S	4	1.8	.....	0	8s	.....	W	0.12	3.0	Cloudy	
Indianola, Texas	30.17	766.3	30.20	767.1	61	16.1	100	SE	4	1.8	.....	8k	Fog	S	Calm	0	0	Fair	
Jacksboro, Texas	28.95	735.3	30.07	763.8	61	16.1	88	S	8	3.6	.....	.....	10ks	.....	SW	Inap.	Inap.	Cloudy	
Jacksonville, Florida	30.33	770.4	30.35	770.9	53	11.7	79	E	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Keokuk, Iowa	29.44	747.8	30.06	763.5	46	7.8	85	Calm	0	0	.....	0	4s	.....	Calm	0	0	Fair	
Key West, Florida	30.16	766.1	30.19	766.8	67.0	19.4	94	NE	10	4.5	.....	.....	10s	.....	E	0.22	5.6	Cloudy	
Kittyhawk, North Carolina	30.24	768.1	30.26	768.6	50	10.0	93	SW	14	6.3	.....	0	0	.....	.....	0	0	Clear	
Knoxville, Tennessee	29.34	745.2	30.39	771.9	38	3.3	71	Calm	0	0	.....	.....	10ks	.....	NW	0	0	Cloudy	
La Crosse, Wisconsin	29.31	744.5	30.07	763.8	33	0.6	69	S	8	3.6	.....	0	0	.....	.....	0	0	Clear	
La Mesilla, New Mexico	26.10	662.9	30.24	768.1	42	5.6	83	Calm	0	0	.....	0	0	.....	.....	0.05	1.3	Clear	
Laredo, Texas	.....	.....	.....	.....	67	19.4	95	SE	6	2.7	.....	.....	10s	.....	Calm	0	0	Cloudy	
Leavenworth, Kansas	29.22	742.2	30.06	763.5	57	13.9	93	S	4	1.8	.....	.....	10s	.....	Calm	0	0	Cloudy	
Los Angeles, California	29.69	754.1	30.03	762.7	52	11.1	85	NE	3	1.3	.....	Haze	0	Calm	.....	0.05	1.3	Hazy	
Louisville, Kentucky	29.62	752.3	30.18	766.6	55	12.8	74	SW	6	2.7	.....	.....	10ks	.....	SW	Inap.	Inap.	Cloudy	
Lynchburg, Virginia	29.53	750.0	30.22	767.6	50	10.0	65	S	2	0.9	.....	2c	Haze	W	Calm	0	0	Fair	
Maricopa Wells, Arizona	.....	.....	.....	.....	42	5.6	58	N	.....	.....	.....	0	0	.....	.....	0.16	4.1	Clear	
Marquette, Michigan	29.31	744.5	30.04	763.0	30	— 1.1	68	W	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Mason, Texas	28.46	722.9	30.20	767.1	62	16.7	91	Calm	0	0	.....	.....	10n	.....	.....	0.12	3.0	Rainy	
Memphis, Tennessee	29.94	760.5	30.26	768.6	55	12.8	87	S	3	1.3	.....	.....	10s	.....	SW	0	0	Cloudy	
Milwaukee, Wisconsin	29.39	746.5	30.11	764.8	33	0.6	89	W	4	1.8	.....	0	Sm'e	.....	.....	0	0	Clear	
Mobile, Alabama	30.29	769.4	30.34	770.6	53	11.7	100	S	3	1.3	.....	.....	Fog	.....	Calm	0	0	Dense fog	
Montgomery, Alabama	30.13	765.3	30.38	771.6	46	7.8	88	NE	2	0.9	.....	2cs	Fg;sm'	Calm	Calm	0	0	Foggy	
Morgantown, West Virginia	29.15	740.4	30.22	767.6	49	9.4	63	S	3	1.3	.....	.....	10s	.....	SW	0	0	Cloudy	
Mt. Washington, N. H.	23.36	593.3	29.72	754.9	21	— 6.1	100	NW	90	40.2	.....	.....	Fog	.....	NW	0	0	Foggy	
Nashville, Tennessee	29.76	755.9	30.31	769.9	49	9.4	85	E	2	0.9	.....	5ck	5s	SW	Calm	0	0	Cloudy	
New Haven, Connecticut	29.86	758.4	29.98	761.5	45	7.2	67	SW	6	2.7	.....	5cs	0	Calm	.....	0	0	Fair	
New London, Connecticut	29.92	760.0	29.98	761.5	46	7.8	69	W	5	2.2	.....	0	2s;hz.	.....	W; Calm	Inap.	Inap.	Fair	
New Orleans, Louisiana	30.21	767.3	30.27	768.8	60	15.6	94	E	5	2.2	.....	.....	Fog	.....	Calm	0	0	Foggy	
Newport, Rhode Island	29.89	759.2	29.94	760.5	46	7.8	77	SW	9	4.0	.....	5c	1ks	W	W	0.01	0.3	Fair	
New York, New York	29.86	758.4	30.04	763.0	43	6.1	67	SW	16	7.2	.....	2c	2ks	Calm	SW	0	0	Fair	
Norfolk, Virginia	30.18	766.6	30.24	768.1	50	10.0	78	SW	4	1.8	.....	0	Fog	.....	Calm	0	0	Clear	
North Platte, Nebraska	27.06	687.3	29.73	755.1	26	— 3.3	82	W	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Olympia, Washington Ter.	29.61	752.1	29.64	752.8	45	7.2	92	Calm	0	0	.....	.....	10n	.....	Calm	0.42	10.7	Light rain	
Omaha, Nebraska	28.89	733.8	30.01	762.2	33	0.6	89	S	2	0.9	.....	0	2s	.....	Calm	0	0	Clear	
Oswego, New York	29.75	755.6	30.08	764.0	45	7.2	76	W	8	3.6	.....	.....	10s	.....	NW	0.01	0.3	Cloudy	
Pembina, Dakota	28.98	736.1	29.84	757.9	27	— 2.8	88	S	9	4.0	.....	0	0	.....	.....	0	0	Clear	
Philadelphia, Pennsylvania	30.07	763.8	30.13	765.3	43	6.1	66	W	8	3.6	.....	.....	10ks	.....	W	0	0	Cloudy	
Phœnix, Arizona	.....	.....	.....	.....	48	8.9	100	SE	.....	.....	.....	.....	Fog	.....	Calm	0.18	4.6	Dense fog	
Pike's Peak, Colorado	17.75	450.8	29.96	761.0	12	—11.1	61	S	12	5.4	.....	2cs	2s	Calm	S	0	0	Fair	
Pioche, Nevada	24.02	610.1	29.78	756.4	37	2.8	100	S	6	2.7	.....	.....	10a	.....	Calm	0.49	12.4	Light rain	
Pittsburg, Pennsylvania	29.34	745.2	30.16	766.1	50	10.0	78	SW	6	2.7	.....	.....	10s	.....	W	Inap.	Inap.	Cloudy	
Port Huron, Michigan	29.43	747.5	30.11	764.8	35	1.7	90	SW	9	4.0	.....	.....	Fog	.....	Calm	0	0	Foggy	
Portland, Maine	29.74	755.4	29.79	756.7	45	7.2	76	SW	8	3.6	.....	5c;k	Haze	NW	.....	0	0	Fair	
Portland, Oregon	29.64	752.8	29.74	755.4	48	8.9	85	N	2	0.9	.....	.....	8ks	.....	NE	0	0	Cloudy	
Prescott, Arizona	24.80	629.9	30.16	766.1	31	— 0.6	69	SE	.....	.....	.....	0	0	.....	.....	0.33	8.4	Clear	
Punta Rassa, Florida	30.25	768.3	30.26	768.6	61	16.1	82	NE	8	3.6	.....	2cs	Haze	Calm	Calm	0	0	Fair	
Red Bluff, California	29.55	750.6	29.91	759.7	51	10.6	79	SE	8	3.6	.....	.....	10s	.....	Calm	0	0	Cloudy	
Rochester, New York	29.46	748.3	30.08	764.0	43	6.1	83	W	6	2.7	.....	.....	10s;sm'	.....	W;C	Inap.	Inap.	Cloudy	

UNITED STATES SERIES.—Continued.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Roseburg, Oregon	29.14	740.1	29.71	754.6	43	6.1	96	Calm	0	0	.....	10k	0	Calm	.....	0	0	Cloudy	
Sacramento, California	29.86	758.4	29.95	760.7	48	8.9	77	S	1	0.4	.....	0	0	.....	.....	0	0	Clear	
St. Louis, Missouri	29.57	751.1	30.14	765.5	58.5	14.7	76	S	6	2.7	.....	.....	10s;sm	.....	Calm	0.01	0.3	Cloudy	
St. Marks, Florida	30.33	770.4	30.35	770.9	47	8.3	100	N	3	1.3	.....	0	Fog	.....	.....	0	0	Clear	
St. Paul, Minnesota	29.12	739.6	29.98	761.5	29	— 1.7	78	Calm	0	0	.....	2c	0	Calm	.....	0	0	Fair	
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salt Lake City, Utah	25.64	651.2	29.97	761.2	35	1.7	100	NW	1	0.4	.....	.....	10n	.....	Calm	0.03	0.8	Light rain	
San Antonio, Texas	29.44	747.8	30.02	762.5	65	18.5	100	SE	6	2.7	.....	.....	10n	.....	SE	0.21	5.3	L ght rain	
San Diego, California	29.99	761.7	30.06	763.5	53	11.7	79	Calm	0	0	.....	0	0	.....	.....	0.03	0.8	Clear	
Sandusky, Ohio	29.46	748.3	30.15	765.8	44	6.7	92	SW	12	5.4	.....	0	Haze	.....	Calm	Inap.	Inap.	Clear	
Sandy Hook, New Jersey	30.02	762.5	30.04	763.0	47	8.3	69	SW	25	11.2	.....	5c	Haze	W	.....	0	0	Fair	
San Francisco, California	29.86	758.4	29.92	760.0	55	12.8	87	SW	2	0.9	.....	8k	Fog	Calm	Calm	0	0	Fair	
Santa Fé, New Mexico	23.25	590.5	29.79	756.7	30	3.9	91	E	4	1.8	.....	.....	10n	.....	Calm	Inap.	Inap.	Light rain	
Savannah, Georgia	30.26	768.6	30.36	771.1	52	11.1	86	Calm	0	0	.....	1ck	Sm'e	N	.....	Inap.	Inap.	Smoky	
Shreveport, Louisiana	30.02	762.5	30.24	768.1	61	16.1	94	S	3	1.3	.....	.....	10s	.....	Calm	0	0	Cloudy	
Smithville, North Carolina	30.33	770.4	30.37	771.4	53	11.7	91	W	2	0.9	.....	0	5ks	.....	W	0	0	Fair	
Springfield, Massachusetts	29.77	756.1	29.90	759.4	52	11.1	47	NW	4	1.8	.....	5k	0	NW	.....	Inap.	Inap.	Fair	
Stockton, Texas	26 99	685.5	29.99	761.7	53	11.7	86	S	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Thatcher's Island, Mass	29.79	756.7	29.84	757.9	44	6.7	84	SW	8	3.6	.....	8cs	0	NW	.....	0	0	Smoky	
Toledo, Ohio	29.45	748.0	30.14	765.5	43	6.1	75	SW	5	2.2	.....	.....	Fog	.....	SW	Inap.	Inap.	Dense fog	
Tucson, Arizona	27.58	700.5	30.13	765.3	63	17.2	72	Calm	0	0	.....	2k	0	E	.....	1.04	26.4	Fair	
Tybee Island, Georgia	30.31	769.9	30.34	770.6	50	10 0	93	N	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Umatilla, Oregon	29.51	749.5	.....	.....	32	0.0	79	NW	4	1.8	.....	8ck	0	W	.....	0	0	Cloudy	
Vicksburg, Mississippi	30.06	763 5	30.32	770.1	67	13.9	94	S	6	2.7	.....	.....	Fog	.....	Calm	0	0	Foggy	
Virginia City, Montana	24.23	615.4	29.71	754.6	32	0.0	69	SE	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Visalia, California	29.64	752.8	30.02	762 5	48	8.9	78	E	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Washington, D. C	30.06	763.5	30.18	766.6	45	7.2	68	S	3	1.3	.....	1ck	5s	W	NW	0	0	Fair	
Wickenburg, Arizona	.....	.....	.....	.....	39	3.9	82	S	.....	.....	.....	0	5ks	.....	Calm	0	0	Fair	
Wilmington, N. Carolina	30.26	768.6	30.34	770.6	51	10.6	93	S	4	1.8	.....	0	Fog	.....	Calm	0	0	Clear	
Winnemucca, Nevada	25.60	650.2	29.96	761.0	23	— 5.0	73	NE	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Wood's Holl, Mass	29.90	759.4	29.95	760.7	47	8.3	77	NW	16	7.2	.....	0	5s	.....	NW	0	0	Fair	
Yankton, Dakota	28.70	729.0	30.06	763.5	23	— 5.0	86	NE	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Yuma, Arizona	29.84	757.9	30.10	764.5	53	11.7	86	NE	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Sub-Series.																			
York Factory, B. A	30.12	765.0	30.18	766.6	—22.0	—30.0	.....	N	2	0.9	.....	3cs	3s	N	N	0	0	Fair	J. Fortescue, W. Wood.
Havana, Cuba, W. I	30.07	763 8	30.09	764.3	70	21.1	84	E	1.2	0.5	.....	0	4ks	.....	E	0	0	Fair	Chas. Hasselbrink.
Kingston, Jamaica, W. I	30.10	764.5	30.11	764.8	77	25.0	86	Calm	0	0	.....	8c	2s	W	E	0	0	.....	James Gall.
Nassau, W. I	29.91	759.7	29.99	761.7	81	27.2	.....	NE	10	4.5	.....	.....	.....	.....	.....	0	0	Fair	F. M Everett.
St. Thomas, W. I	.....	.....	.....	.....	80	26.7	74	ESE	3	1.3	.....	2c	5ks	E	.....	0.6	15.	Cloudy	G. O. Gellich.
Paramaribo, D. Guiana, S. A	.....	.....	29.95	760.7	81	27.2	87	E	.....	.....	2	.....	10n	.....	.....	0.170	4.32	Cloudy	C. J. Hering.
Batavia, Dutch Guiana, S. A	29.99	761.8	30.00	762.0	83.8	28.8	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.069	1.75	Cloudy	Dr. H. Groot.
Medellin, Colombia, S. A	25.15	638.8	.....	.....	69.2	20.7	77	Calm	.....	.....	0	1cs	1ks	.....	.....	0	0	Fair	Thomas Herran.
Honolulu, Oahu, H. I	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Daniel Smith.
Makawao, Maui, H. I	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo; for Batavia, the barometer reduced to freezing but not to sea-level. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,883 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 760 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,916.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.67 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in; Pioche, 5.77 in.; Prescott, 5.86 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation

STATIONS AND VESSELS.	BAROMETER. As reported.* Inches.	BAROMETER. As reported.* Millimeters.	BAROMETER. Attached Thermometer. Fahrenheit.	BAROMETER. Attached Thermometer. Centigrade.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Up'er From—	CLOUDS. Direction. Low'r From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	SEA-SWELL. Character.	SEA-SWELL. Direction from—	WEATHER.	OBSERVER.
Navy Yard Mare Island, Cal.	29.92	760.0	52	11.1	52	11.1	86	E	4	1.8			9		Calm	0	0			Overcast	
Navy Yard, Pensacola, Fla.	30.41	772.4			56	13.3	91	NNE	3	1.3			7			0	0			D. clouds	
Navy Yard, Portsmouth, N.H	29.89	759.2	58	14.4	45	7.2	76	Calm	0	0						0	0			Clear	
Naval Hospital, Yokohama, Japan	30.05	763.3	50	10.0	46	7.8	96	Calm			0		Haze		Calm	0.30	7.6			Fair	
Adams. Valparaiso, Chili	29.93	760.2	66	18.9	64	17.8	78	S			1		2		S	0	0	None	N	D. clouds	
Alliance, Smyrna, Turkey	30.33	770.4	67	19.4	56	13.3	75	N			1–2		10		N					Misty	
Ashuelot. Shanghai, China	30.09	764.3	66	18.9	55	12.8	100	E			1–2		10		E					D. clouds	
Canonicus, New Orleans, La.	30.26	768.6	46	7.8	60	15.6	94	SE			2									Foggy	
Colorado, New York, N. Y.	30.05	763.3	46	7.8	45	7.2	61	WSW	13	5.8			4		W	0	0			Light fog	
Despatch, Constantinople, Turkey.	30.35	770.9	62	16.7	53	11.7	50	NE			2		10		NE					Rainy	
Essex, St. Paul de Loanda, Lower Guinea.	29.80	756.9	82	27.8	83	28.3	96	W			2		2					Smooth		D. clouds	
Franklin, Norfolk, Va.	30.32	770.1	67	19.4	53	11.7	67	W	5	2.2			2		W	0	0			Clear	
Guard, Lisbon, Portugal	30.41	772.4	55	12.8	52	11.1	60	NE			3		3		N					D. clouds	
Lackawana, Mare Island, Cal.	29.97	761.2			55	12.8	87	Calm			0		8							D. clouds	
Marion, Villefranche, France	30.27	768.8	55	12.8	59	15.0	38	E			1		2		Calm	0	0	Smooth	S	D. clouds	
Michigan, Erie, Pa.	29.70	754.4	65	18.3	43	6 1	67	SW			1		0							Clear	
Monocacy, Amoy, China	29.89	759 2	70	21.1	65	18.3	100	SSE			0–1		10		N&W					Drizzling	
Monongahela. Aden, Arabia	30.04	763.0	82	27.8	81	27.2	100	SSE			1		ck					Smooth		D. clouds	
New Hampshire, Port Royal, S.C.	30.52	775.2			53	11.7	93	Calm	0	0			0			0	0			Blue sky	
Omaha, S. 31° 50′, W. 75° 55′	30.00	762.0	65	18.3	62	16.7	88	SSE	11	4.9			10		SSE	0	0	Mod'ate	S	Cloudy	
Onward, Callao, Perú	30.04†	763.0†	76	24.4	75	23.9	86	SE			2		10					Long	W	D. clouds	
Ossipee, Norfolk, Va.	30.31	769.9	68	20.0	54	12.2	74	SW			1		4		NW					D. clouds	
Palos, Shanghai, China	30.08	764.0	61	16.1	55	12.8	93	ESE			0–1		10		Calm					Overcast	
Plymouth, N. 18° 27′, W. 74° 51′	30.04	763.0	83	28.3	81	27.2	96	NE			4		4					Mod'ate	NE	Pleasant	
Powhatan, Norfolk, Va.					53	11.7	93	SSW	4.8	2.1			4			0	0			Pleasant	
Ranger, Shanghai, China	30.24	768.1			58	14.4	88	E			1–2		10		Calm					Overcast	
Rio Bravo, Brownsville, Texas	30.04	763.0			68	20.0	95	E			1		6		SE					D. clouds	
Santee, Annapolis, Md.	30.25	768.3	72	22.2	49	9.4	71	W			0–1		9		NW	0	0			Cloudy	
Saratoga, Norfolk, Va.					50	10.0	100	SW			0–1		5		Calm	0	0			Clear	
St. Louis, League Island, Pa	29.98	761.5	39	3.9	38	3.3	100	SW	10	4.5			7		SW	0	0			Cloudy	
Swatara, Norfolk, Va.	30.34	770.6			66	18.9	50	WSW			1		3		SW					D. clouds	
Tennessee, Nagasaki, Japan	30.04	763.0	71	21.7	55	12.8	93	NNE			1		2		N&W	0	0			D. clouds	
Trenton, Villefranche, France	30.38	771.6			60	15.6	44	E	4	1.8			2		E	0	0			D clouds	
Vandalia, N. 41° 24′, E. 11° 47′	30.19	766.8	59	15.0	55	12.8	68	ENE			3		1		Calm			Mod'ate	ESE	D. clouds	
Wabash, Boston, Mass.	29.90	759 4	60	15.6	52	11.1	60	W	5	2.2			8			0	0			D. clouds	
Wyoming, Washington, D. C.	30.59†	777.0†			47	8.3		Calm			0		6							D. clouds	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. The position given for the Plymouth is that at noon, local time, instead of that at 7:35 a. m., Washington time.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Character.	Direction from—		
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama, N. 44° 35′, W. 124° 23′			29.47*	748.5*	59	15.0		S			4		10			Moderate	WSW	Squally	Capt. Seabury.
S. S. City of Peking, N. 29° 21′, W. 179° 35′			30.23*	767.8*	67	19.4	84	S			3		5		S	Small	NNW	D. clouds	Lt. Z. L. Tanner, U.S.N.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio, Hong-Kong, China			29.89	759.2	78	25.6		SSW			4		8		SSW			D. clouds	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

NOTE.—The originals give the wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. *Aneroid.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.

S. S. Belgic, N. 35° 25′, E. 140° 12′			30.02*	762.5*				Var.			3		Light		NE	Long	ENE	D. clouds	Capt. John Metcalf.
S. S. Gaelic, N. 30° 20′, E. 126° 40′			29.87†	758.7†	70	21.1	??	Var.			4		8		SW	Smooth	SW	Overcast	Capt. W. H. Kidley
S. S. Oceanic																			Capt. H. Parsell.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. * Corrected for temperature and elevation; instrumental error not known. †Aneroid.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig, N. 48° 23′, W. 34° 15′			29.78	756.4	51.0	10.6	86	WSW			6		8		WSW	High	WSW	Squally	Capt. Undütsch.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds.

UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Lo'wr	Upper.	Lower.	Character	Direction from—		
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second	0—10.	0—10.	0—10.	From—	From—				
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, Philadelphia, Pa			30.51*?	774.9*?	44	6.7	??	N			3		0					Fine	Captain Sargent.
S. S. Ohio, N. 50° 40′, W. 29° 13′			29.78	756.4	53	11.7	90	SW			6		10		SW	Very rough.	SSW	Misty	Captain Morrison.
S. S. Pennsylvania, N. 49° 37′, W. 28° 53′			29.93†	760.2†	54	12.2	100	SSW			5		10		SSW	Heavy	SW to NW	Cloudy	Captain Harris.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. * Aneroid † Corrected for temperature and elevation, instrumental error not known.

RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

S. S. Nederland																			Capt. Randle.
S. S. Switzerland, N. 48° 34′, W. 29° 26′			29.87*	758.7*				SSW	30	13.4		10		W	Confused	SW	Raining		Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

*Aneroid: regulated to standard at Antwerp.

ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

S. S. Hibernian																			Capt. W. Richardson.
S. S. Scandinavian																			

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, Kennebunk, Maine			29.81	757.2	46	7.8	69	Calm	0	0			5k		NW			Cloudy	Capt. James Jorgensen.

NOTE.—The originals for the schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.,) Chief Signal Officer. U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON DECEMBER 17, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Barometer: Corrected for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours	.....	.....	30.39	771.8	60.8	16.0	69	E	.....	.....	1	.....	1	.....	.....	0	0	Very fair.....	Michel.
Algiers	.....	.....	30.30	769.7	57.6	14.2	65	N	.....	.....	1	.....	10	.....	.....	0	0	Covered	Peter.
La Calle	.....	.....	30.17	766.2	56.5	13.6	82	NW	.....	.....	3	.....	8	.....	.....	0.394	10.0	Very cloudy	Fleury.
Tunis	.....	.....	30.09	764.2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Jaoques.
Sfax	.....	.....	30.13	765.2	50.0	10.0	.....	NW	.....	.....	3	.....	9	.....	.....	0	0	Covered.....	Husson.
Saida	.....	.....	30.29	769.4	49.6	9.8	84	NNE	.....	.....	1	.....	2	.....	.....	0.012	0.3	Fair.....	Millot.
Tebessa	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Bassières.
Geriville	.....	.....	30.24	768.0	41.7	5.4	94	NNE	.....	.....	4	.....	8	.....	.....	0	0	Very cloudy	Lemaitlot.
Laghouat	.....	.....	30.24	768.2	53.6	12.0	64	E	.....	.....	2	.....	0	.....	.....	0	0	Clear.....	Guyot.
Biskra	.....	.....	30.21	767.3	63.0	17.2	44	NW	.....	.....	1	.....	0	.....	.....	0	0	Clear.....	Kuntz.
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NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m.; or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

Agram	29.72	754.9	30.27	768.8	29.7	— 1.3	92	Calm	.....	.....	0	.....	3	.....	.....	0.016	0.4	.....	Prof. Ivan Stozir
Cracow, I. R. Observatory	29.35	745.4	30.15	765.0	32.7	0.4	92	W	.....	.....	1	.....	10	.....	.....	0.051	1.3	.....	Dr. Wierzbiski.
Eperies	29.27	743.4	30.20	767.1	29.1	— 1.6	90	Calm	.....	.....	0	.....	10	.....	.....	0	0	.....	Julius Mikolik.
Gratz	28.94	735.1	30.26	768.7	30.7	— 0.7	79	S	.....	.....	2	.....	4	.....	.....	0	0	.....	Andreas Rospini.
Hermannstadt	28.71	729.3	30.23	767.7	28.8	— 1.8	90	NE	.....	.....	1	.....	10	.....	.....	0	0	.....	Prof. Reissenberger.
Kremsmünster	28.84	732.4	30.24	768.1	34.5	1.4	93	W	.....	.....	3	.....	10	.....	.....	0.252	6.4	.....	Prof. C. Wagner.
Lemberg	29.13	739.9	30.18	766.6	26.2	— 3.2	96	S	.....	.....	1	.....	3	.....	.....	0.031	0.8	.....	Dr. T. Stanecki.
Pola	29.99	761.8	30.11	764.7	47.1	8.4	38	NE	.....	.....	2	.....	1s	.....	.....	0	0	.....	I.R.HydrographicOffice
Szathmar	29.78	756.5	30.28	769.1	29.5	— 1.4	92	SW	.....	.....	2	.....	9	.....	.....	0	0	Light fog.....	Johann Tamas, S. J.
Szegedin	29.95	760.7	30.24	768.2	34.3	1.3	94	N	.....	.....	1	.....	10	.....	.....	0.028	0.70	.....	Karl Stancel.
Trieste	30.07	763.6	30.17	766.2	42.4	5.8	51	ENE	.....	.....	2	.....	0	.....	.....	0	0	.....	P. Busin.
Vienna	29.48	748 8	30.21	767.4	35.8	2.1	85	W	.....	.....	2	.....	10	.....	.....	0.126	3.2	.....	I. R. Central Met. Obs'y
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NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 843.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

Arlon	28.87	733.2	30.44	773.1	38.1	3.4	88	W	.....	.....	1	.....	10	.....	.....	0.051	1.3	.....	Prof. M. Passau.
Brussels	30.18	766.6	30.39	771.9	45.0	7.2	83	WNW	.....	.....	2	.....	10	.....	W	0.051	1.30	.....	Royal Observatory.
Furnes	30.36	771.2	30.39	771.8	45.9	7.7	100	SW	.....	.....	2	.....	10	.....	.....	0.031	0.8	Dense fog....	M. E. de Cae.
Maeseyck	30.25	768.4	30.38	771.7	40.8	4.9	95	SSW	.....	.....	2	.....	10	.....	.....	0.031	0.8	.....	M. Pierrot.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

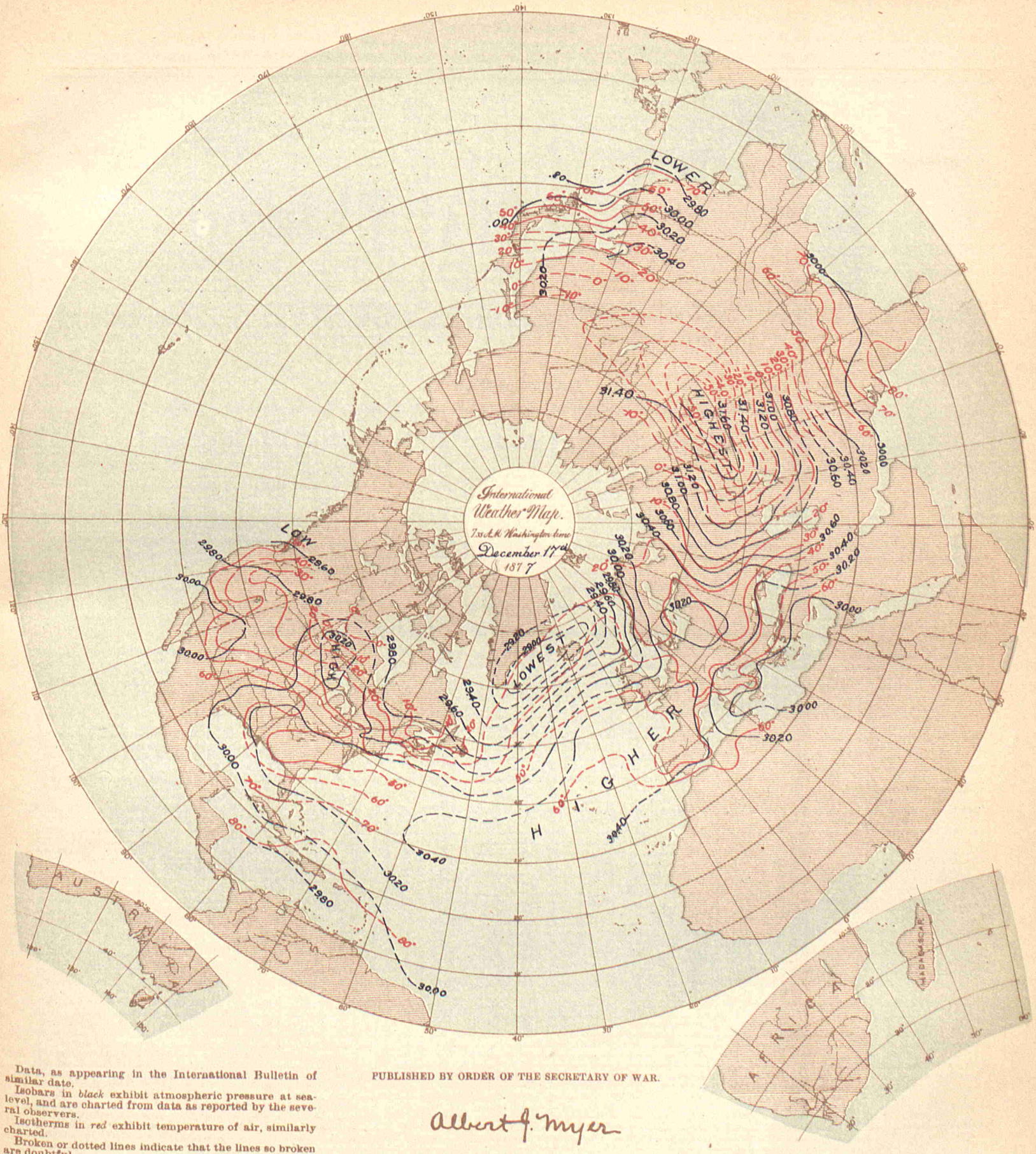
Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	29.89	759.2	29.99	761.7	45.4	7.4	.....	S	13	5.8	.....	.....	3	.....	.....	0.015	0.38	Blue sky.....	W. Boswell.
Ardrossan	30.10	764.5	30.12	765.0	50	10.0	.....	WSW	.....	.....	4	.....	7	.....	.....	.....	.....	Raining.....	William McNeil.
Armagh, Observatory	.....	.....	30.28	769.1	47.8	8.8	.....	SW	6	2.7	.....	.....	10	.....	.....	.....	.....	Gloomy.....	S. Call, for Dr. Robinson
Bidston, (Liverpool Obs.)	.....	.....	30.28	769.1	46.9	8.3	.....	WSW	8	3.6	.....	.....	10	.....	.....	.....	.....	Overcast.....	John Hartnup.
Birr Castle, (Parsonstown)	.....	.....	30.33	770.4	50.7	10.4	.....	W	.....	.....	3	.....	4	.....	.....	.....	.....	D. clouds....	J. Dreyer.
Bradford, Yorkshire	29.82	757.4	30.21	767.3	46.7	8.2	.....	N	.....	.....	5	.....	10	.....	.....	0.01	0.3	Overcast.....	J. McLandsborough.
Bridgetown, (Barbados)	29.90	759.4	29.93	760.2	81	27.2	.....	NE	.....	.....	2	.....	3	.....	.....	.....	.....	D. clouds....	Pvt. G. W. Roberts, A.
Cambridge, Observatory	.....	.....	30.35	770.9	45.0	7.2	.....	W	.....	.....	1	.....	10	.....	.....	.....	.....	Overcast.....	H. Todd. [H. C.
Cardington	.....	.....	30.35	770.9	45.6	7.6	.....	W	.....	.....	1	.....	8	.....	.....	.....	.....	Overcast.....	John McLaren.
Chatham, School M. E	30.22	767.6	30.36	771.1	41.2	5.1	.....	SW	.....	.....	2	.....	9	.....	.....	.....	.....	Overcast.....	Lt. W. G. Morris, R. E.
Dartmoor	29.04	737.6	30.57	776.5	41.6	5.3	.....	W	.....	.....	3	.....	5	.....	.....	.....	.....	D. clouds....	Alexander Watt.
Davos Platz (Switzerland)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Francis Redford, M. A.
Donaghadee	30.17	766.3	30.20	767.1	48	8.9	.....	WSW	.....	.....	3	.....	5	.....	.....	.....	.....	D. clouds....	J. Mac Gowan.
Dover	30.35	770.9	30.38	771.6	48	8.9	.....	W	.....	.....	3	.....	7	.....	.....	.....	.....	Gloomy.....	J. Costello.
Eccles, (near Manchester)	.....	.....	30.28	769.1	46.0	7.8	.....	SW	2.2	1.0	.....	.....	10	.....	.....	.....	.....	Gloomy.....	Thomas Mackereth.
Falmouth, Observatory	30.24	768.1	30.48	774.2	49.0	9.4	.....	W	.....	.....	2	.....	9	.....	.....	.....	.....	Overcast.....	The Staff.
Fort Napier, (Natal)	27.60	701.0	29.81	757.2	77.2	25.1	.....	E	.....	.....	2	.....	0	.....	.....	.....	.....	Blue sky.....	Pvt. G. Salmon, A.H. C
Free Town, (Sierra Leone)	.....	.....	29.90	759.4	88	31.1	.....	W	.....	.....	0	.....	3	.....	.....	.....	.....	D. clouds....	
Galway, Queen's College	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	30.27	768.8	30.32	770.1	58.2	14.6	.....	E	.....	.....	5	.....	0	.....	.....	.....	.....	Blue sky.....	Corpl. C. Aitken, A.H.C.
Glasgow, Observatory	29.89	759.2	30.09	764.3	47.4	8.6	.....	WSW	.....	.....	5	.....	10	.....	.....	.....	.....	Raining.....	D. G. Maclean.
Great Yarmouth	30.32	770.1	30.33	770.4	45	7.2	.....	W	.....	.....	3	.....	7	.....	.....	.....	.....	Misty.....	G. T. Watson.
Greenwich, Royal Obs'y	30.21	767.3	30.38	771.6	45.9	7.7	.....	W	.....	.....	2	.....	10	.....	.....	.....	.....	Overcast.....	The Staff, for G. B. Airy.
Guernsey	30.24	768.1	30.47	773.9	49	9.4	.....	WNW	.....	.....	2	.....	10	.....	.....	.....	.....	Gloomy.....	Dr. S. E. Hoskins, F.R.S.
Helston	.....	.....	30.44	773.2	52	11.1	.....	SW	.....	.....	2	.....	8k	.....	.....	0	0	Gloomy.....	M. P. Moyle.
Holyhead	30.25	768.3	30.30	769 6	48	8.9	.....	WSW	.....	.....	3	.....	10	.....	.....	.....	.....	Drizzling.....	John Tilston.
Jersey	30.23	767.8	30.53	775.4	48.5	9.2	.....	NW	.....	.....	3	.....	10	.....	.....	.....	.....	Overcast.....	J. Fisher.
Kew, Observatory	.....	.....	30.39	771.9	46.3	7.9	.....	W	17	7.6	.....	.....	10	.....	.....	.....	.....	Threatening	The Staff.
Kingstown	30.27	768.8	30.29	769.4	51	10.6	.....	W	.....	.....	4	.....	8	.....	.....	.....	.....	Overcast.....	George Mitchell.
Leicester, Museum	.....	.....	30.33	770.4	45.4	7.4	.....	SW	.....	.....	2	.....	10	.....	.....	.....	.....	Overcast.....	Wm. I. Harrison, F.G.S.
Malta, (Mediterranean)	29.85	758.2	29.93	760.2	58.6	14.8	.....	N	.....	.....	4	.....	8	.....	.....	.....	.....	D. clouds....	Sgt. Fred. Travis, A. H.
Nairn	29.85	758.2	29.94	760.5	47	8.3	.....	SW	.....	.....	1	.....	2	.....	.....	.....	.....	¼ clouded....	W. D. Penny. [C.
Nassau, (Bahamas)	.....	.....	30.16	766.1	71.8	22.1	.....	NE	.....	.....	4	.....	4	.....	.....	.....	.....	D. clouds....	C. S. Duncombe.
Nottingham, Observatory	30.12	765.0	30.31	769.9	47.1	8.4	.....	W	.....	.....	2	.....	10k;d	.....	W	0	0	Overcast.....	E. J. Lowe, F. R. S
Oscott, St. Mary's College	29.78	756.4	30.32	770.1	46.3	7.9	.....	WSW	.....	.....	3	.....	9	.....	.....	.....	.....	D. clouds....	Rev. Stephen Whitty
Oxford, Radcliffe Obs'y	.....	.....	30.36	771.1	46	7.8	.....	WSW	.....	.....	1	.....	10	.....	.....	.....	.....	Gloomy.....	Mr. Lucas.
Plymouth	30.40	772.1	30.48	774.2	47.3	8.5	.....	Calm	.....	.....	0	.....	10	.....	.....	.....	.....	Misty.....	John Merrifield.
Roche's Point	30.35	770.9	30.40	772.1	51	10.6	.....	W	.....	.....	2	.....	8	.....	.....	.....	.....	Dull	W. Kennedy.
Saint Ann's Head	.....	.....	30.39	771.9	50	10.0	.....	WSW	.....	.....	3	.....	10	.....	.....	.....	.....	Overcast.....	John C. Walker.
Sandwick Manse, (Orkneys.)	.....	.....	29.86	758.4	47.6	8.7	.....	WSW	27	12.1	.....	.....	10	.....	.....	.....	.....	Misty.....	Rev. C. Clouston, LL. D
Scutari, Cemetery, (Turkey)	.....	.....	29.99	761.7	48.8	9.3	.....	N	.....	.....	2	.....	10	.....	.....	.....	.....	Raining.....	Sergt. W. H. Lyne.
Sheffield	30.00	762.0	30.28	769.1	47.9	8.8	.....	Calm	.....	.....	0	.....	7	.....	.....	0	0	Overcast.....	W. F. Cooper.
Silloth Rectory	30.15	765.8	30.18	766.6	45.8	7.7	94	SW	.....	.....	2	.....	10	.....	.....	0	0	Overcast.....	Rev. F. Redford, M. A.
Stonyhurst, Observatory	.....	.....	.....	.....	44.9	7.2	.....	SW	.....	.....	3	.....	10	.....	.....	.....	.....	Overcast.....	Rev. S. J. Perry.
Stornoway, Lews C., (Hebr.)	.....	.....	29.95	760.7	45	7.2	.....	W	.....	.....	4	.....	10	.....	.....	.....	.....	Raining.....	John Smith.
Stratfield Turgiss	30.19	766.8	30.42	772.7	45.4	7.4	.....	W	.....	.....	1	.....	8	.....	.....	.....	.....	Overcast.....	Rev. C. H. Griffith, F.M.S
Thurso	.....	.....	29.87	758.7	48	8.9	.....	WSW	.....	.....	2	.....	10	.....	.....	.....	.....	Raining.....	John Trotter.
Truro, Royal Institution	.....	.....	30.44	773.2	51	10.6	.....	W	.....	.....	4	.....	10	.....	.....	.....	.....	Gloomy.....	W. Newcombe.
Valencia, Observatory	.....	.....	30.43	772.9	52.0	11.1	.....	WNW	14	6.3	.....	.....	7	.....	.....	.....	.....	D. clouds....	The Staff.
SUB-SERIES.																			
Calf of Man, (Isle of Man)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Henry Mercer.
Cape Good Hope, Obs'y	29.97	761.2	30.01	762.2	78.2	25.7	48	S	8	3.6	.....	2	3	.....	.....	.....	.....	.....	The Staff, for E. J. Stone.
Hobart Town, (Tasmania)	.....	.....	29.62	752.3	60.0	15.6	77	W	.....	.....	3	.....	10n	.....	.....	0.01	0.3	Raining.....	Francis Abbott, F.R.A.S.
Leith, Restalrig Park	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Andrew Gibb.
Mauritius, Observatory	29.83	757.7	30.02	762.4	79.0	26.1	74	ESE	11.0	4.9	.....	0	10	.....	E	0	0	Overcast.....	C. Meldrum.
Melbourne, Observatory	29.55	750.6	29.64	752.8	73.2	22.9	39	NNE	17	7.6	.....	.....	10	.....	W	0	0	Threatening	R. L. J. Ellery.
Monach L't-house, (Hebrides)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Youngclause.
North Unst, (Shetland Is.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Robert Burnet.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,1057 ft., or 1,556.07 m.; Fort Napier, 2,200 ft., or 670.6 m.

MARINE SERIES. VESSELS.	Sea or swell. Height scale 0—9	Sea or swell. Direction from—	Weather.	Observer.
S. S. Algeria	.....	.....	.....	Capt. W. Watson.
S. S. Batavia	.....	.....	.....	Capt. J. E. Mouland.
Ship Camperdown	.....	.....	.....	Capt. A. T. Miller.
Brig Catherine	.....	.....	.....	Capt. Adam Smith.
Barque Celeste	.....	.....	.....	Capt. D. F. McKechnie
S. S. Hibernia	.....	.....	.....	Capt. W. R. Cato
Barque Maroon	.....	.....	.....	Capt. A. T. Brown.
Ship Mikado	.....	.....	.....	Capt. C. C. Prehn.
Royal Alice, N. 41° 10′, W. 68° 45′	2	SW	Blue sky.....	Capt. E. M. Hughes.
S. S. Seine	.....	.....	.....	Capt. H. Manning.
Barque Sorata	.....	.....	.....	Capt. Jas. J. Price.
Schooner Traveller	.....	.....	.....	Capt. Alex Simpson.
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instru'tal error and temperature. Inches.	Barometer. Corrected for instru'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
San José	26.17	664.7			64.8	18.2	92	NE			3		1k			0	0		Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	30.18	766.5	30.23	767.7	31.8	— 0.1	98	NNW			4		2						
Farõe	30.22	767.6	30.24	768.1	33.8	1.0	94	SE			4		10						
Godthaab, (Greenland)	29.31	744.4	29.35	745.5	14.9	— 9.5	77	N			2		8						
Stykkisholm, (Iceland)	28.95	735.3	28.99	736.4	36.9	2.7	96	SW			8		8						
Thorshavn, (Farõe)	29.61	752.1	29.65	753.0	44.4	6.9	76	W			5		3						Snowing
Vestervig	30.08	763.9	30.24	768.2	30.9	— 0.6	96	ESE			2		2						Raining

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

Alençon, Normal School	29.98	761.5	30.53	775.5	44.6	7	54	N			1		5		N	0	0	Cloudy	Collignon, Director.
Amiens, Normal School	30.29	769.4	30.41	772.3	46.4	8.0	97	WNW			3		10			0.039	1.0	Covered	Bonvarne, Director.
Avignon, Normal School	30.12	765.1	30.20	767.1	50.5	10.3	62	NNW			8		0			0	0	Very clear	Mr. Giraud, Director
Bar-sur-Seine	29.85	758.2	30.44	773.1	44.8	7.1	74	NE			1		8cn		NE	0.185	4.7	Very cloudy	C. Saillard.
Beaumette Obs'y (Angers)	30.34	770.6	30.52	775.1	49.8	9.9	73	NW	1.8	0.8					NNW	0	0		Albert Cheux.
Beauvais	30.14	765.6	30.44	773.1	46.6	8.1	90	WSW			2		10		WNW	0.010	0.25	Covered	Normal School.
Besançon	29.52	749.7	30.45	773.5	39.9	4.4	97	SSW			2		8		SW	0.528	13.4	Very cloudy	Normal School.
Bourg-en-Bresse	29.55	750.6	30.46	773.7	38.7	3.7	93	S			2		10		S	0.35	9.	Foggy	Normal School.
Bourges, Normal School	29.94	760.5	30.51	775.0	46.6	8.1	97	NW			2		10		NW	0	0	Covered	A. Wagner, Director.
Brest, Naval Observatory	30.25	768.3	30.47	773.9	48.7	9.3	78	WNW			2		10		WNW	0	0		The Staff.
Carcassonne, Normal School	30.07	763.8	30.47	773.8	42.1	5.6	91	W			4		2		NW	0	0	Slightly cl'dy	Vateau, Director.
Caen	30.39	771.9	30.47	773.9	51.8	11	73	NNW			1		2		NNW	0	0	Slightly cl'dy	Normal School.
Chartres, Normal School	29.84	758.0	30.43	772.9	46.4	8		NW			1		10			0.020	0.5	Covered	Lequin, Director.
Châlons-sur-Marne, N. Sch'l	30.10	764.4	30.35	770.8	44.6	7.0	85	Calm			0		8ck			0.157	4.0	Very cloudy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	29.03	737.3	30.43	772.9	44.6	7.0	77	N			2		10		NW	0	0	Covered	Alluard, Director.
Commercy, Normal School	29.51	749.5	30.42	772.7	41.2	5.1	84	WNW			2		10		WNW	0.217	5.5	Covered	Dr. Goulet, Director.
Commune de Gréasque*	29.04	737.7	30.19	766.7	54.1	12.3	52	W			2		2		W	0	0	¼ Covered	M. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	30.31	769.9	30.54	775.6	47.8	8.8	86	NW			1		10			0	0	Covered	Mouillot, Director.
Le Mans, Normal School	30.18	766.6	30.50	774.7	47.8	8.8	73	N			2		5		N	0.016	0.4	Cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.47	748.6	30.42	772.7	41.6	5.3	97	NE			2		10			0.535	13.60	Foggy	Voudez, Director.
Lorient, Naval Observatory	30.47	773.8	30.56	776.3	50.4	10.2	62	W			3		10			0	0	Covered	T. Carré, Director.
Mâcon, Normal School	29.66	753.4	30.37	771.4	46.9	8.3	89	WNW			2		5		NE	0.16	4.	Cloudy	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	29.34	745.3	30.55	776.0	39.4	4.1	93	SW			2		10		SE	0	0	Covered	Normal School.
Nismes, Normal School	30.03	762.8	30.24	768.1	54.7	12.6	74	N			4		0			0	0	Clear	Boyer, Director.
Orleans, Normal School	30.02	762.6	30.42	772.7	45.3	7.4	94	NNW			2		8		NNW	0.063	1.6	Very cloudy	Bernard, Director.
Paris, Observatory	30.21	767.2	30.46	773.5	46.0	7.8	86	NE			1		10			0.021	0.52	Foggy	National Observatory.
Privas	29.17	741.0	30.27	768.9	44.6	7	75	N			6		5		N	0	0	Cloudy	Normal School
Rochefort, Naval Obs'y	30.51	774.9	30.54	775.7	46.8	8.2	97	NW			1		10		SE	0	0	Covered	Lt. Decante, Director.
Rouen, Normal School	30.34	770.7	30.43	772.9	51.4	10.8	77	NW			2		10		W	0	0	Covered	F. Lucard, Director.
Tarbes, Normal School	29.44	747.7	30.57	776.4	42.8	6	85	SW			1		5		E	0	0	Cloudy	T. Hugues, Director.
Villefranche	29.87	758.5	30.41	772.5	39.2	4.0	93	NW			1		8		N	0.102	2.6	Very cloudy	Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.78	756.3	29.80	757.0	78.8	26										0.16	4.		L'Abbé Marchesi.
Marseilles, Observatory	30.15	765.8			54.0	12.2	50	NW			2-3		0			0	0		The Staff.
Mont-Louis	25.04	636.0	30.36	771.0	34.5	1.4	57	N	28.0	12.50			2		W	0	0		Mr. Falguère.
Nice			30.11	764.7	52.5	11.4	69	Calm			0		1			0	0	Clear	Dr. A. Niepce.
Paris, Montsouris Obs'y	30.15	765.9	30.43	772.9	45.5	7.5	91	NW			1		10			0.016	0.4		Marié Davy, Director.
Perpignan			30.36	771.1	51.8	11.0	60	NW	28.0	12.50			7		NW	0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.	21.38	543.0			24.4	— 4.2		N			4		5					Cloudy	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.71	576.9			25.5	— 3.6		N			4		4			0	0	Cloudy	Gen'l de Nansouty.
Saint Maur, (near Paris)	30.27	768.9	30.44	773.1	46.4	8.0	85	SW			1		10			0.024	0.6	Covered	E. Renou.
Toulouse, Observatory	29.80	757.0	30.54	775.7	42.4	5.8	88	W			3		9			0	0		The Staff.
Tours	30.27	768.9	30.47	773.9	47.1	8.4	93	NW			1		10		N	0.020	0.5		C. Marquet.
Versailles, (near Paris)			30.43	772.8	45.7	7.6	94	N			1		10			0.028	0.70	Light fog	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.15	765.9	30.18	766.6	46.9	8.3	93	NNE	14.3	6.4			10n			0.299	7.6	Raining	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published. At Mirecourt and Rochefort the cloud directions are apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg																			Prof. Dr. Hoh.
Berlin	30.10	764.5	30.28	769.1	39.2	4.0	91	N			1		4			0.031	0.79		Prof. Arndt.
Breslau	29.60	751.8	30.13	765.3	33.1	0.6	95	WNW			3		10			0.124	3.16		Royal University Obs'y.
Carlsruhe	29.94	760.4	30.39	771.9	37.0	2.8	94	SW			1		10			0	0		Albert Senz.
Cassel	29.79	756.6	30.40	772.2	36.3	2.4	91	NNW			4		10	W		0.748	19.00		Dr. H. Möhl.
Crefeld	30.19	766.8	30.35	771.0	42.8	6.0	81	NW			2		7			0.20	5.		Director Lose.
Emden	30.37	771.5	30.41	772.4	40.8	4.9	96	W			0		10			0	0		Prof. Prestel.
Frankfort on the Main	30.00	761.9	30.38	771.6	39.4	4.1		SSW			1		8			0.331	8.4		Physical Society.
Friedrichshafen	29.06	738.0	30.41	772.3	38.8	3.8	90	N			4		10	WNW		0.280	7.1	Hy. clouds	M. Wilhelm.
Hamburg	30.21	767.4	30.29	769.3	38.7	3.7	86	Calm			0		10			0.138	3.5	Light fog	Captain F. Hegemann.
Kiel	30.25	768.3	30.26	768.7	34.7	1.5	88	NE			1		10			0.043	1.11		Prof. G. Karsten.
Königsberg, (Prussia)	29.91	759.7	29.99	761.7	33.4	0.8	95	SE								0.169	4.31	Snowing	Prof. E. Luther.
Köslin			30.06	763.5	33.8	1.0		NW			4		4			0	0		H. Müller.
Leipsic, Observatory	29.87	758.8	30.32	770.0	36.9	2.7	94	NNW			4		10	NW		0.315	8.0	Rainy	Prof. Bruhns.
Memel, Naval School	29.97	761.3	30.02	762.5	33.1	0.6	98	SE			2		10					Snowing	Reinbrech von Skalweit.
Neufahrwasser	30.00	762.1	30.02	762.5	33.4	0.8	83	NW			3		7	SW		0.051	1.3		A. Lothes.
Posen	29.84	757.9	30.14	765.5	33.8	1.0	74	NW			2					0.032	0.79	Fair	Dr. Magener.
Strassburg Obs., (in Alsace	29.86	758.4	30.43	773.0	38.1	3.4	95	S			1		10			0.693	17.6		Dr. Schur.
Stuttgart	29.38	746.3	30.37	771.3	37.9	3.3	85	W			1		10			0.110	2.8		Prof. Schoder.
Treves, (Trier)	29.75	755.7	30.28	769.1	39.7	4.3	86	SW			0–1		10			0.057	1.44	Dense fog	Prof. Flesch.
Weissenburg, (Bavaria)	28.77	730.7	30.35	771.0	33.6	0.9	96	Calm	0	0			10			0.177	4.5	Dense fog	Dr. Von Bebber.
Wustrow, Naval School	30.26	768.6	30.30	769.6	34.9	1.6	70	N			3		4			0.093	2.35	Fair	E. F. Schütz.
German Naval Series.																			

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet: Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4. Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines, Königsberg, Posen and Wustrow in cubic zolls. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.54	750.2	29.93	760.3	54.5	12.5		NE			1							Cloudy	Dr. J. F. J. Schmidt.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and wind-force; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.87	758.8	29.93	760.1	60.9	15.6	100	NE	27.0?	12.1?			10			0.01	0.3	Overcast	
Deesa	29.47	748.6	29.96	761.0	76.2	24.6	75	SE					8	SSW	SW	0	0	D. clouds	
Bombay	29.87	758.8	29.91	759.8	81.7	27.6	82	W	5.0	2.2			6		SW	0	0	D. clouds	
Poona	27.93	709.3	29.93	760.1	81.0	27.2	55	SE					10	S		0	0	D. clouds	
Lahore	29.28	743.6	30.06	763.5	56.6	13.7	94	NW	0.7	0.3			10			0	0	Cloudy	
Belgaum	27.40	696.0	29.95	760.8	74.5	23.6	58	SE	5.0	2.2			7	W		0	0	D. clouds	
Bangalore																			
Roorkee	29.11	739.4	30.05	763.3	59.2	15.1	88	Calm	0.9	0.4			3			0	0	Foggy	
Agra	29.45	747.9	30.03	762.8	65.8	18.8	64	E					5			0	0		
Trichinopoly																			
Nagpur	28.96	735.6	30.02	762.6	72.9	22.7	65	Calm	2.5	1.1			5	NE		0	0	D. clouds	
Madras																			
Lucknow	29.68	753.9	30.07	763.8	60.9	16.1	88	Calm	0.6	0.3			5	E		0	0	Blue sky	
Allahabad	29.74	755.4	30.07	763.7	60.1	15.6	74	Calm	0.4	0.2			0			0	0	D. clouds	
Patna	29.90	759.4	30.09	764.2	67.8	19.9	46	W	1.0	0.4			4	W	W	0	0		
Hazaribagh	27.99	710 9	30.08	764.1	59.8	15.4	54	Calm	6.3	2.8			10			0	0	D. clouds	
Cuttack	29.95	760.8	30.04	762.9	72.0	22.2	64	NNE	0.6	0.3			3			0	0	D. clouds	
Calcutta (Alipore)	30.03	762.8	30.05	763.3	59.9	15.5	65	NW	1.0	0.4			8	SW		0	0	D. clouds	
Goalpara	29.62	752.3	30.02	762.5	67.5	19.7	69	Calm	0.5	0.2			6	W		0	0	D. clouds	
Chittagong	29.93	760.1	30.02	762.5	68.4	20.2	74	Calm	4.1	1.8			0			0	0	Blue sky	
Sibsagar	29.72	754.9	30.07	763.8	60.9	16.1	91	ENE	0.7	0.3			8			0	0	D. clouds	
Rangoon																			
Jubbulpore	28.65	727.4	30.02	762.5	76.9	24.9	53	SE	2.1	0.9			9	SE		0	0	Overcast	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instru'n'tal error and temperature. Inches.	Barometer. Corrected for instru'n'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 1—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	22.17	563.2	30.25	768.4	20.7	— 6.3	83	WNW	.....	.....	4	.....	2	N	.....	0	0	.....	Ab. Dom. Mongini.
Stelvio	22.16	562.8	30.28	769.2	17.1	— 8.3	.....	NNE	.....	.....	1	.....	10	.....	.....	0.039	1.0	.....	Signora Ernesta Manfredi.
Udine	29.71	754.5	30.13	765.4	42.6	5.9	35	Calm	0	0	.....	.....	0	.....	.....	0	0	.....	Prof. Giovanni Clodig.
Padua	30.03	762.8	30.15	765.7	40.5	4.7	51	NW	4.9	2.2	.....	.....	0	.....	.....	0	0	.....	Prof. Dott. Lorenzoni.
Vicenza	29.95	760.7	30.15	765.8	42.3	5.7	57	SW	0	0	.....	.....	0	.....	.....	0	0	.....	Conte Alm. Da Schio.
Verona	29.94	760.4	30.17	766.3	42.1	5.6	65	NNW	0	0	.....	.....	0	.....	.....	0	0	.....	Dott. B. Bertoncelli.
Bergamo	28.82	731.9	30.20	767.1	38.3	3.5	65	Calm	.....	.....	0	.....	0	.....	.....	0	0	.....	Prof. Trionfini Carlo.
Domodossola	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Giuseppe Calza.
Milan	29.67	753.6	30.22	767.5	35.2	1.8	.....	WNW	.....	.....	2	.....	3	ENE	.....	0.024	0.6	.....	Ab. Gio. Capelli.
Pavia	29.85	758.2	30.22	767.5	30.4	— 0.9	94	SSW	.....	.....	1	.....	10	.....	.....	0	0	.....	Prof. Gio. Cantoni.
Moncalieri	29.26	743.3	30.22	767.5	36.0	2.2	79	NNW	1.8	0.8	.....	.....	1	.....	.....	0	0	.....	Prof. P. F. Denza.
Mondovi	28.21	716.6	30.21	767.4	39.6	4.2	62	NW	.....	.....	2	.....	1	NE	.....	0	0	.....	Prof. D. C. Bruno.
Porto Maurizio	29.92	759.9	30.15	765.7	52.3	11.3	56	SSW	.....	.....	2	.....	0	.....	.....	0	0	.....	Prof. L. Vassallo.
Genoa	29.94	760.4	30.11	764.9	51.1	10.6	23	N	4.9	2.2	.....	.....	0	.....	.....	0	0	.....	Prof. G. M. Garibaldi.
Piacenza	29.94	760.5	30.21	767.3	33.1	0.6	87	NW	4.9	2.2	.....	.....	0	.....	.....	0	0	.....	Dott. G. Manzi.
Parma	29.88	759.0	30.21	767.4	38.1	3.4	69	WSW	.....	.....	2	.....	1	.....	.....	0	0	.....	Prof. P. Pigorini.
Florence	29.86	758.5	30.13	765.3	48.2	9.0	25	NE	.....	.....	4	.....	0	.....	.....	0	0	.....	Cav. F. Meucci.
Leghorn	30.00	761.9	30.08	764.1	45.7	7.6	40	NE	0.9	3.1	.....	.....	0	.....	.....	0	0	.....	Prof. P. Monte.
Siena	28.84	732.5	30.09	764.3	40.3	4.6	54	W	4.9	2.2	.....	.....	1	NW	.....	0	0	.....	Prof. L. Toscani.
Urbino	28.57	725.7	30.20	767.0	35.4	1.9	74	NNE	.....	.....	2	.....	1	.....	.....	0	0	.....	Prof. P. Serpieri.
Pesaro	30.10	764.5	30.15	765.8	40.5	4.7	86	NW	0	0	.....	.....	1	.....	.....	0	0	.....	Prof. Luigi Guidi.
Ancona	30.03	762.8	30.14	765.6	42.4	5.8	68	NW	.....	.....	6	.....	10	NW	.....	0	0	.....	Prof. F. DeBosis.
Grosseto	29.97	761.2	30.08	764.1	47.5	8.6	42	NE	.....	.....	2	.....	4	NE	.....	0	0	.....	Avv. P. Ponticelli.
Rome	29.86	758.4	30.04	763.0	46.6	8.1	58	N	7.4	3.3	.....	.....	10	.....	.....	0	0	.....	Prof. P. A. Secchi.
Naples, O. U.	29.82	757.4	30.02	762.6	52.9	11.6	46	ENE	.....	.....	4	.....	2	E	.....	0	0	.....	Prof. L. Palmieri.
Lecce	29.81	757.2	30.07	763.8	50.0	10.0	80	NNW	18.1	8.1	.....	.....	10	.....	.....	0.091	2.3	.....	Prof. C. De Giorgi.
Cosenza	29.14	740.2	30.05	763.3	47.5	8.6	75	SW	0	0	.....	.....	10	.....	.....	0.181	4.6	.....	Prof. F. D. Conti.
Cagliari	29.77	756.2	29.97	761.2	54.7	12.6	57	NE	.....	.....	2	.....	1	.....	.....	0	0	.....	Prof. A. Pacinotti.
Riposto, (Sicily)	29.90	759.5	29.93	760.7	59.5	15.3	70	NE	.....	.....	2	.....	10	SW	.....	1.969	50.0	.....	Prof. F. Caflero.
Palermo	29.69	754.2	29.95	760.8	55.9	13.3	71	WSW	0.7	0.3	.....	.....	10	.....	.....	0.295	7.5	.....	Prof. G. Cacciatore.
Caltanissetta	27.95	710.0	29.93	760.2	49.5	9.7	74	NW	.....	.....	4	.....	10	NE	.....	0	0	.....	Prof. A. Pagani.
Syracuse	29.81	757.1	29.88	759.0	58.3	14.6	78	NE	.....	.....	4	.....	10	SE	.....	0.236	6.0	.....	Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.51	749.6	30.07	763.7	49.3	9.6	50	NE	5.6	2.5	.....	.....	3	.....	.....	0	0	.....	Prof. F. Brioschi.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,543.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Siena, 348.5 m., or 1,143.3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Tokei (Yeddo)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	The Observatory.
Tokei (Yeddo) University	29.91	759.6	30.01	762.3	47	8.3	88	NNE	4.2	1.9	.....	.....	10n	.....	.....	.....	.....	Light rain	Prof. P. V. Veeder.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Aguascallentes	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	I. N. Marin, M. D.
Córdoba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	C. Peña, M. D.
Cuernavaca	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	L. Castillo, A. E.
Guadalajara	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. L. Perez.
Guanajuato	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. V. Fernandez.
Leon	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. M. Leal.
Mexico	23.13	587.6	30.26	768.6	45.3	7.4	76	Calm	0	0	.....	0	0	.....	.....	0	0	Very fine	Central Observatory.
Orizaba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	N. N.
Orizaba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	I. Orozco, M. D.
Pabellon, (Aguascalts)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. V. de Leon, M. E.
Puebla	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. B. Gonzalez.
Toluca	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. C. Velazquez.
Tlacotalpam	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. F. R. Bayly.
San Luis Potosi	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	G. Barroeta, M. D.
Vera-Cruz	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. J. Rossell.
Zacatecas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. A. Bonilla, M. E.
Puebla, (Catholic Institute)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	P. Spina. [M. M. D. D.
Morelia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Tena, F. L. Páramo

Note.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,293 m., or 7,522.9 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabell m, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m,, or 8,611.8 ft.; San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	30.37	771.5	30.37	771.5	45.1	7.3	.....	SSW	.....	.....	3	.....	.....	.....	.....	0.362	9.2	.....	
Groningen	30.25	768.3	30.30	769.7	41.9	5.5	.....	WSW	.....	.....	2	.....	.....	.....	.....	0.146	3.7	.....	.....
Helder	30.30	769.5	30.30	769.5	44.6	7.0	.....	SW	.....	.....	2	.....	.....	.....	.....	0.091	2.3	.....	.....
Hellevoetsluis	.....	.....	30.35	771.0	43.5	6.4	94	SW	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	.....
Utrecht	30.31	769.9	30.36	771.1	45.1	7.3	86	WSW	.....	.....	2	.....	8	.....	.....	0.020	0.5	Very cloudy	H. v d Brink.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the cooperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	30.01	762.3	30.07	763.7	35.2	1.8	93	S	24.6	11.0	.....	.....	7	.....	.....	0.646	16.4	Rain & snow	
Brönö	29.91	759.7	29.95	760.7	31.3	— 0.4	61	S	18	8	.....	.....	10	.....	.....	0	0	.....	
Christiania	30.11	764.8	30.27	768.9	18.7	— 7.4	89	ENE	7	3	.....	.....	3	.....	.....	0	0	.....	
Tromsö	29.93	760.1	29.97	761.2	25.6	— 3.6	82	NE	4	2	.....	.....	0	.....	.....	0	0	.....	

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Dom Luiz at Lisbon.

Angra, (Azores)	30.38	771.7	30.58	776.6	63.0	17.2	76	ESE	6.9	3.1	.....	.....	3	.....	.....	0	0	.....	Dr. J. A. Sampaio.
Campo Major	29.99	746.6	30.45	773.3	48.2	9.0	43	ENE	6.3	2.8	.....	.....	1	.....	.....	0	0	.....	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.20	767.1	30.27	768.9	64.4	18.0	66	ENE	6.9	3.1	.....	.....	3	.....	.....	0.134	3.4	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	30.08	764.0	30.45	773.4	47.7	8.7	88	NE	12.5	5.6	.....	.....	0	.....	.....	0	0	.....	The Staff.
Ponta Delgada, (Azores)	30.49	774.4	30.56	776.2	62.6	17.0	68	NE	2.5	1.1	.....	.....	5	.....	.....	0	0	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

Naval Series. Vessels.	Sea or swell. Height scale 0–9	Sea or swell. Direction from—		
S. Bartholomew Dias	.....	.....	.....	R, A. T. Pinha, Com'd't.
S. S. India	.....	.....	.....	A. D. Pedroso, Com'd't.
S. S. Mindello	.....	.....	.....	J. F. R. R. Bastos, Com'd't.
S. S. Sado	.....	.....	.....	A. N. P. Sampaio, Com'd't.
S. S. Sá da Bandeira	.....	.....	.....	F. Texeira da Silva, Com'd't.
S. S. Tejo	.....	.....	.....	F. J. Ferreira,dos Amas,Com'd't.
.....	.....	.....	.....	.....

Note.—The originals, except for S. S. Tejo, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the cooperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.63	752.6	30.07	763.8	31.8	— 0.1	96	S	11	5	.....	.....	10n	.....	.....	.....	.....	Snowing	Astronomical Obs.
Wilna	29.75	755.7	30.19	766.9	32.2	0.1	93	S	9	4	.....	.....	8	.....	.....	.....	.....	Heavy clouds	Astronomical Obs.
Dorpat	29.98	761.6	30.24	768.1	32.7	0.4	100	SE	4	2	.....	.....	10n	.....	.....	.....	.....	.....	Prof. Dr. Welhrauch.
St. Petersburg	30.32	770.2	30.34	770.6	31.6	— 0.2	92	SE	11	5	.....	.....	10n	.....	.....	.....	.....	Light snow	Central Physical Obs.
Knopio	29.95	760.8	30.29	769.4	27.5	— 2.5	100	E	7	3	.....	.....	10	.....	.....	.....	.....	.....	Ch. Forsten.
Kieff	29.60	751.9	30.28	769.2	22.1	— 5.6	100	NE	4	2	.....	.....	10ks	.....	.....	.....	.....	.....	Physical Cabinet.
Nikolaiev	30.17	766.3	30.24	768.1	33.3	0.7	94	NE	13	6	.....	.....	10n	.....	.....	.....	.....	.....	Kurdakof.
Kertch	30.16	766.1	30.18	766.6	43.5	6.4	88	NE	4	2	.....	.....	2	.....	.....	.....	.....	.....	Lugorio.
Moscow	30.09	764.2	30.70	779.8	8.8	—12.9	88	ESE	4	2	.....	.....	10s	.....	.....	.....	.....	.....	Meteorological Obs.
Lugan	30.16	766.1	30.38	771.7	21.9	— 5.6	80	E	31	14	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Archangel	30.35	771.0	30.37	771.5	24.4	— 4.2	95	SSW	13	6	.....	.....	10	.....	.....	.....	.....	.....	Ogorodnikof.
Tiflis	29.13	739.9	30.65	778.6	29.8	— 1.2	78	Calm	0	0	.....	.....	10	.....	.....	.....	.....	.....	Physical Observatory
Astrakhan	30.91	785.2	30.83	783.1	13.3	—10.4	57	ESE	27	12	.....	.....	4s	.....	.....	.....	.....	Light clouds	Sebastianof.
Kasan	30.83	783.1	31.14	791.0	2.8	—16.2	71	SSE	2	1	.....	.....	10	.....	.....	.....	.....	.....	Physical Cabinet.
Orenburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Tschernischef.
Ekaterinburg	30.21	767.2	31.29	794.7	2.7	—16.3	70	W	7	3	.....	.....	9ck	.....	.....	.....	.....	.....	Meteorological Obs.
Nukuss	30.74	780.8	31.01	787.7	— 3.6	—19.8	49	ENE	22	10	.....	.....	0	.....	.....	.....	.....	.....	
Kasaly	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Bobrof.
Tashkend	29.07	738.3	31.04	788.3	0.7	—17.4	84	Calm	0	0	.....	.....	6	.....	.....	.....	.....	.....	Michelson.
Barnaul	30.96	786.4	31.63	803.5	—50.3	—45.7	72	Calm	0	0	.....	.....	1	.....	.....	.....	.....	.....	Meteorological Obs.
Yeniseisk	30.95	786.0	31.34	796.0	—22.0	—30.0	84	SW	2	1	.....	.....	10	.....	.....	.....	.....	Light clouds	Marks.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Usolzef.
Oorga	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Mossin.
Krotkowo*	30.62	777.8	31.15	791.1	2.7	—16.3	61	E	9	4	.....	.....	10s	.....	.....	.....	.....	.....	Cand. Fatjanow.
Peking, (China)	30.45	773.3	30.59	776.9	24.1	— 4.4	63	N	13	6	.....	.....	7n	.....	.....	.....	.....	.....	Physical Observatory
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Vladivostock	30.26	768.7	30.30	769.7	9.1	—12.7	61	NW	7	3	.....	.....	0	.....	.....	.....	.....	.....	
Nikolaievsk, on the Amoor	.....	.....	.....	.....	—12.5	—24.7	.....	W	13	6	.....	.....	.....	.....	.....	.....	.....	Lunar corona	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall; for Krotkowo, the barometer reduced to freezing but not to sea-level. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 502 m., or 1,650 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft. * N. 53° 47′, E. 48° 34′.

SPANISH SERIES.

Furnished by the cooperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Rave, Director.
Bilbao, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Manuel de Naveran
Burgos, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Domingo Martin y Perez.
Madrid, Royal Observatory	28.14	714.8	30.47	773.9	42.4	5.8	67	NE	0.8	0.34	.....	2	0	NE	.....	0	0	Light clouds	The Staff.
Murcia, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Olayo Diaz, Director.
Santiago, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	30.06	763.4	30.12	765.0	70.3	21.3	82	E	5.8	2.6	.....	0	1k	.....	.....	0	0	Clear	Benito Vines, S. J.
San Fernando, Naval Obs'y	30.27	768.9	30.38	771.5	54.3	12.4	74	N	11.5	5.1	.....	0	3	.....	N	0	0	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de PortoRico, W. I.	.....	.....	29.91	759.6	79.5	26.4	89	NE	0	0	.....	4k;cs	3kn	E	E	0.197	5.00	Cloudy	Leonardo de Tejeda, Chief of Engineers.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

STATIONS.	Barometer. Corrected for instru-m'tal error and temperature. Inches.	Barometer. Corrected for instru-m'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	30.26	768.5	30.30	769.5	24.4	— 4.2	.....	Calm	.....	.....	0	.....	10	.....	.....	0.354	9.0	Foggy	
Umea	30.17	766.3	30.22	767.6	23.7	— 4.6	100	N	.....	.....	2	.....	10	.....	.....	0	0	.....	
Hernosand	30.27	768.9	30.32	770.2	22.6	— 5.2	88	N	.....	.....	2	.....	9	.....	.....	0.035	0.9	.....	
Stockholm	29.95	760.8	30.13	765.3	32.0	0.0	90	N	.....	.....	4	.....	10	.....	.....	0.126	3.2	.....	
Wisby	29.97	761.3	30.03	762.8	35.2	1.8	90	NE	.....	.....	6	.....	5	.....	.....	0.083	2.1	.....	
Sub-Series.																			
Upsala	30.11	764.7	30.18	766.6	26.2	— 3.2	99	NW	6.7	3.0	.....	.....	9	.....	NE	0.002	0.06	.....	Dr. Hildebrandsson.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.91	734.8	30.38	771.7	39.6	4.2	82	S	.....	.....	1	.....	7	.....	.....	0.071	1.8	Cloudy	The Observatory.
Zurich	28.70	729.0	30.39	772.0	37.0	2.8	85	NW	.....	.....	1	.....	10	.....	.....	0.028	0.7	Covered	The Observatory.

Note.—For Geneva the corresponding departures from the normal values are: Barometer, +6.8 mm; Thermometer, +1.9 cent.; Relative Humidity, +2 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	30.03	762.8	48.2	9.0	94	N.	15	6.5	.....	.....	10	.....	N	0	0	.....	The Observatory.
Fao, (Persian Gulf)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salonica	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	B. Stefanides.
Valona	.....	.....	29.93	760.3	58.1	14.5	.....	W	.....	.....	1	.....	10	.....	.....	0	0	Covered	A. Bertrand.
Varna	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Imperial Observatory.
Sub-Series.																			
Beirut,(Syria,) Lee Obs'y	29.85	758.2	29.97	761.3	63.5	17.5	57	NE	.....	.....	1	.....	10cs	.....	.....	0	0	Overcast	Prof. C. V. A. Van Dyck

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	29.91	759.7	29.98	761.5	9.7	—12.4	87	Calm	0	0	.....	10	.....	.....	.....	.....	.....	.....	Hon. J. Ferguson.
Brockville, Ontario	29.70	754.4	30.01	762.2	39	3.9	.....	SW	8	3.6	.....	.....	10s	.....	SW	0	0	Cloudy	W. R. Bigg.
*Chatham, N. B	.....	.....	30.01	762.2	9	—12.8	94	S	5	2.2	.....	.....	10s	.....	SW	0	0	Cloudy	G. A. Blair.
Charlottetown, P. E. Island.	30.00	762.0	30.04	763.0	15	— 9.4	95	Calm	0	0	.....	5cs	0	Calm	.....	0	0	Cloudy	H. J. Cundall, C. E.
Cornwall, Ontario	29.71	754.6	29.91	759.7	39.3	4.1	93	SW	.....	.....	4	.....	9s	.....	.....	0	0	Stormy	James Smith, M. A.
Dalhousie, N. B	29.90	759.4	29.93	760.2	9	—12.8	95	SW	.....	.....	1	.....	.....	.....	.....	0	0	Gloomy	H. A. Johnson.
Esquimault, B. C	29.57	751.1	29.62	752.3	47.3	8.5	100	Calm	.....	.....	.....	.....	10	.....	.....	.....	.....	Rainy	W. H. Bevis.
*Father Point, Quebec	29.82	757 4	29.84	757.9	12	—11.1	98	SE	20	8.9	.....	.....	10n	.....	.....	0.04	1.0	Light snow	J. McWilliams.
Fredericton, N. B	29.98	761.5	30.05	763.3	13.4	—10.3	85	E	6.0	2.7	.....	10ck	0	W	.....	0.4	10.	Cloudy	Prof. Harrison.
*Fort Garry, Manitoba	29.39	746.5	30.30	769.6	10	—12.2	92	NE	4	1.8	.....	0	0	.....	.....	0	0	Clear	James Stewart.
Goderich, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	H. J. Strang, M. A.
Granton, Ontario	28.87	735.8	30.11	764.8	35	1.7	100	W	.....	.....	2	0	0	.....	.....	0	0	Clear	James Grant.
*Halifax, N. S	29.97	761.2	30.11	764.8	21	— 6.1	87	SW	3	1.3	.....	.....	10ks	.....	.....	0.040	1.02	Cloudy	F. Allison, M. A.
Hamilton, Ontario	29.72	754.9	30.10	764.5	41.9	5.5	79	SW	.....	.....	1	.....	.....	.....	.....	0	0	Clear	Geo. Dickson, M. A
Heart's Content, N. F	29.77	756.1	29.79	756.7	20	— 6.7	100	W	.....	.....	4	2k	3ks	W	W	0	0	Fine	E. Weedon.
*Kingston, Ontario	29.69	754.1	30.03	762.7	39	3.9	94	SW	7	3.1	.....	.....	10ks	.....	SW	0	0	Cloudy	S. Woods, M. A.
Little Glace Bay, N. S	30.03	762.7	30.07	763.8	23.0	— 5.0	.....	W	5	2.2	.....	6k	0	W	.....	0.11	2.8	Cloudy	C. H. Rigby.
*Montreal, Quebec	29.70	754.4	29.91	759.7	34	1.1	79	W	16	7.2	.....	.....	10s	.....	SW	0	0	Cloudy	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.31	744.5	30.03	762.7	38	3.3	92	W	11	4.9	.....	2cs	0	SW	.....	0	0	Fair	Rev. R. Mosley.
Peterboro, Ontario	29.26	742.9	30.04	763.0	29.6	— 1.3	62	Calm	.....	.....	0	.....	Fog	.....	.....	0	0	Foggy	J. F. Jeffers, B. A.
Port Dover, Ontario	29.40	746.7	30.11	764.8	38	3.3	100	S	8	3.6	.....	5ck	0	W	.....	0	0	Fair	H. Morgan.
Port Hastings, N. S	29.95	760.7	30.00	762.0	27.5	— 2.5	.....	SW	4	1.8	.....	.....	.....	.....	.....	0	0	Fine	Peter Grant.
Port Stanley, Ontario	29.47	748.5	30.14	765.5	34	1.1	96	W	1	0.4	.....	.....	Fog	.....	W	0.04	1.0	Foggy	M. Payne.
*Quebec, Quebec	29.53	750.0	29.87	758.7	18	— 7.8	84	NW	8	3.6	.....	.....	10n	.....	NW	0.02	0.5	Light rain	Capt. Ashe, R. N
*Rockliffe, Ontario	29.47	748.5	29.95	760.7	27	— 2.8	87	Calm	0	0	.....	.....	10s	.....	NW	0	0	Cloudy	W. H. McIntyre.
St. John, N. B	29.87	758.7	30.05	763.3	21	— 6.1	85	SW	1	0.4	.....	7k	0	.....	.....	0.02	0.5	Cloudy	G. Murdock, C. E.
*Saugeen, Ontario	29.36	745.5	30.07	763.8	38	3.3	98	SW	3	1.3	.....	5cs	0	.....	.....	0	0	Fair	K. Stewart.
Stayner, Ontario	29.25	742.9	30.05	763.3	39	3.9	82	NW	18	8.8	.....	0	0	.....	.....	0	0	Clear	R. J. Cole.
Stratford, Ontario	28.88	732.3	30.16	766.1	35.3	1.8	99	W	6.0	2.7	.....	.....	Fog	.....	.....	0	0	Foggy	C. J. MacGregor, M. A.
*Sydney, C. B	30.05	763.3	30.08	764.0	23	— 5.0	80	W	5	2.2	.....	0	8ks	.....	NW	0.05	1.3	Fair	T. C. Hill.
*Toronto, Ontario	29.66	753.4	30.05	763.3	35	1.7	94	SW	5	2.2	.....	0	2s	.....	Calm	0	0	Clear	Magnetic Observatory.
Windsor, N. S	29.99	761.7	30.10	764.5	22.0	— 5.6	86	S	8	3.6	.....	2c	7k	.....	.....	0	0	Fair	Prof. John E. Oram.
Woodstock, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Montgomery.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	18.0	— 7.8	.....	W	.....	.....	.....	5k	5s	W	.....	0.10	2.5	Threatening	John Delany

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.89	759.2	30.13	765.3	35	1.7	80	SE	8	3.6	.....	.....	10ks	.....	W	0	0	Cloudy	
Alpena, Michigan	29.42	747.3	30.08	764.0	35	1.7	80	NW	7	3.1	.....	0	0	.....	.....	0	0	Clear	
Atlantic City, New Jersey	30.22	767.6	30.24	768.1	44	6.7	100	S	1	0.4	.....	5cs	0	Calm	.....	0	0	Fair	
Augusta, Georgia	30.18	766.6	30.37	771.4	42	5.6	91	Calm	0	0	.....	0	Sm'e	.....	S	0	0	Smoky	
Baltimore, Maryland	30.19	766.8	30.24	768.1	45	7.2	76	W	2	0.9	.....	2k	5s; sm	NW	Calm	0	0	Smoky	
Barnegat, New Jersey	30.18	766.6	30.21	767.3	42	5.6	100	S	7	3.1	.....	5c	Fog	W	Calm	0	0	Fair	
Bismarck, Dakota	28.25	717.5	30.01	762.2	25	— 3.9	88	E	2	0.9	.....	0	1s	.....	Calm	0	0	Clear	
Boise City, Idaho	27.06	687.3	29.94	760.5	30	— 1.1	78	S	1	0.4	.....	2k	0	Calm	.....	0	0	Fair	
Boston, Massachusetts	29.96	761.0	30.12	765.0	39	3.9	73	SW	14	6.3	.....	5ck	Sm'e	W	.....	0	0	Fair	
Brackettville, Texas	28.90	734.0	29.91	759.7	67	19.4	79	SE	8	3.6	.....	.....	10s	.....	SE	0.05	1.3	Cloudy	
Breckenridge, Minnesota	29.07	738.4	30.11	764.8	27	— 2.8	94	SE	6	2.7	.....	.....	10s	.....	Calm	0	0	Cloudy	
Brownsville, Texas	30.05	763.3	30.12	765.0	65	18.3	90	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Buffalo, New York	29.34	745.2	30.05	763.3	42	5.6	100	SW	16	7.2	.....	.....	Fog	.....	SW	0	0	Foggy	
Burkes, Arizona	.....	.....	.....	.....	46	7.8	77	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Burlington, Vermont	29.72	754.9	29.98	761.5	39	3.9	63	S	12	5.4	.....	5c	0	S	.....	0	0	Fair	
Cairo, Illinois	29.83	757.7	30.23	767.8	60	15.6	88	S	6	2.7	.....	.....	10s	.....	Calm	0.05	1.3	Cloudy	
Camp Grant, Arizona	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Camp Verde, Arizona	26.81	681.0	30.30	769.6	36	2.2	71	W	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Campo, California	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Cape Hatteras, N. Carolina	30.29	769.4	30.30	769.6	51	10.6	86	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Cape Henry, Virginia	30.23	767.8	30.25	768.3	47	8.3	85	SW	4	1.8	.....	5cs	0	Calm	.....	0	0	Fair	
Cape Lookout, N. Carolina	30.29	769.4	30.31	769.9	56	13.3	87	W	1	0.4	.....	8k	0	NW	.....	0	0	Cloudy	
Cape May, New Jersey	30.20	767.1	30.23	767.8	48	8.9	85	S	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Charleston, South Carolina	30.29	769.4	30.35	770.9	53	11.7	86	NW	4	1.8	.....	0	Sm'e	.....	Calm	0	0	Smoky	
Cheyenne, Wyoming	23.98	609.1	29.92	760.0	35	1.7	70	W	4	1.8	.....	0	5s	.....	Calm	0	0	Fair	
Chicago, Illinois	29.40	746.7	30.09	764.3	53	11.7	93	W	2	0.9	.....	.....	Fog	.....	N	0.02	0.5	Foggy	
Cincinnati, Ohio	29.49	749.0	30.13	765.3	58	14.4	94	W	1	0.4	.....	.....	10n; fg	.....	Calm	0.10	2.5	Light rain	
Cleveland, Ohio	29.49	749.0	30.13	765.3	53	11.7	93	SW	4	1.8	.....	.....	10n	.....	Calm	0.03	0.8	Light rain	
Concho, Texas	28.09	713.5	29.73	755.1	60	15.6	94	W	4	1.8	.....	8cs	0	W	.....	0	0	Cloudy	
Corsicana, Texas	29.66	753.4	30.13	765.3	62	16.7	88	S	7	3.1	.....	5ck	0	Calm	.....	0.01	0.3	Fair	
Davenport, Iowa	29.47	748.5	30.12	765.0	51	10.6	100	Calm	0	0	.....	.....	Fog	.....	Calm	0.04	1.0	Foggy	
Denison, Texas	29.30	744.2	30.09	764.3	62	16.7	88	SE	14	6.3	.....	.....	10ks	.....	SE	0.21	5.3	Cloudy	
Denver, Colorado	24.74	628.4	29.96	761.0	35	1.7	80	SW	4	1.8	.....	0	5s	.....	Calm	0.02	0.5	Fair	
Detroit, Michigan	29.42	747.3	30.10	764.5	43	6.1	100	Calm	0	0	.....	.....	Fog	.....	Calm	0.04	1.0	Foggy	
Dodge City, Kansas	27.33	694.2	29.63	752.6	43	6.1	100	W	6	2.7	.....	.....	Fog	.....	Calm	0	0	Foggy	
Dubuque, Iowa	29.40	746.7	30.11	764.8	45	7.2	92	Calm	0	0	.....	.....	Fog	.....	Calm	0	0	Foggy	
Duluth, Minnesota	29.51	749.5	30.22	767.6	34	1.1	61	N	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Eagle Pass, Texas	29.24	742.7	29.97	761.2	66	18.9	95	SE	8	3.6	.....	.....	10s	.....	Calm	Inap.	Inap.	Cloudy	
Eastport, Maine	29.97	761.2	30.04	763.0	31	— 0.6	79	S	7	3.1	.....	8cs; c	Haze	NW	.....	Inap.	Inap.	Fair	
Erie, Pennsylvania	29.37	746.0	30.08	764.0	54	12.2	79	W	8	3.6	.....	.....	10s	.....	.....	0	0	Cloudy	
Escanaba, Michigan	29.52	749.8	30.20	767.1	33	0.6	80	N	7	3.1	.....	0	0	.....	.....	0	0	Clear	
Florence, Arizona	28.38	720.8	29.98	761.5	50	10.0	64	W	.....	.....	.....	0	0	.....	.....	0	0	Clear	
FortBayard, New Mexico	24.12	612.6	30.12	765.0	37	2.8	80	N	11	4.9	.....	0	0	.....	.....	0	0	Clear	
Fort Craig, New Mexico	25.59	650.0	.....	.....	32	0.0	79	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Fort Gibson, Indian Ter	29.53	750.0	30.06	763.5	62	16.7	88	S	7	3.1	.....	.....	10s	.....	S	0.05	1.3	Cloudy	
Fort Griffin, Texas	28.76	730.5	30.01	762.2	62	16.7	94	S	4	1.8	.....	.....	10s	.....	Calm	0	0	Cloudy	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	28.79	731.3	29.88	758.9	61	16.1	100	S	5	2.2	.....	.....	10n	.....	S	0.55	14.0	Light rain	
Galveston, Texas	30.13	765.3	30.17	766.3	61	16.1	100	SE	8	3.6	.....	0	Fog	.....	SE	0.01	0.3	Fair	
Grand Haven, Michigan	29.45	748.0	30.12	765.0	39	3.9	91	Calm	0	0	.....	.....	Fog	.....	.....	0	0	Foggy	
Indianapolis, Indiana	29.35	745.5	30.12	765.0	57	13.9	93	Calm	0	0	.....	.....	Fog	.....	.....	0.01	0.3	Foggy	
Indianola, Texas	30.13	765.3	30.16	766.1	60	15.6	100	SE	6	2.7	.....	.....	Fog	.....	Calm	0	0	Foggy	
Jacksboro, Texas	28.91	734.3	30.03	762.7	61	16.1	94	S	13	5.8	.....	.....	10s	.....	S	0	0	Threatening	
Jacksonville, Florida	30.30	769.6	30.32	770.1	54	12.2	93	NE	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Keokuk, Iowa	29.43	747.5	30.05	763.3	60	13.3	93	SW	4	1.8	.....	.....	10s	.....	Calm	0.03	0.8	Cloudy	
Key West, Florida	30.12	765.0	30.16	766.1	67.5	19.7	90	NE	10	4.5	.....	2k	Fog	E	Calm	Inap.	Inap.	Clear	
Kittyhawk, North Carolina	30.27	768.8	30.30	769.6	48	8.9	92	SW	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Knoxville, Tennessee	29.29	744.0	30.33	770.4	46	7.8	92	Calm	0	0	.....	.....	10ks	.....	NW	0	0	Cloudy	
La Crosse, Wisconsin	29.36	745.7	30.12	765.0	40	4.4	100	N	2	0.9	.....	.....	Fog	.....	.....	0	0	Foggy	
La Mesilla, New Mexico	26.11	663.2	30.26	768.6	37	2.8	85	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Laredo, Texas	.....	.....	.....	.....	68	20.0	90	SE	6	2.7	.....	10k	0	S	.....	0.01	0.3	Cloudy	
Leavenworth, Kansas	29.16	740.7	29.99	761.7	57	13.9	100	S	12	5.4	.....	.....	10n	.....	Calm	0.13	3.3	Light rain	
Los Angeles, California	29.63	752.6	29.98	761.5	49	9.4	81	N	3	1.3	.....	0	2s	.....	Calm	0	0	Clear	
Louisville, Kentucky	29.62	752.3	30.18	766.6	59	15.0	94	SW	8	3.6	.....	.....	10s	.....	SW	0.05	1.3	Threatening	
Lynchburg, Virginia	29.56	750.8	30.27	768.8	43	6.1	75	Calm	0	0	.....	2c	2s	W	Calm	0	0	Fair	
Maricopa Wells, Arizona	.....	.....	.....	.....	36	2.2	45	N	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Marquette, Michigan	29.46	748.3	30.19	766.8	36	2.2	70	NW	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Mason, Texas	28.42	721.9	30.15	765.8	63	17.2	89	SE	12	5.4	.....	.....	10s	.....	.....	0.53	13.5	Cloudy	
Memphis, Tennessee	29.94	760.5	30.26	768.6	57	13.9	93	S	6	2.7	.....	.....	10n	.....	SW	0.04	1.0	Light rain	
Milwaukee, Wisconsin	29.44	747.8	30.14	765.5	44	6.7	100	N	3	1.3	.....	.....	Fog	.....	Calm	0.01	0.3	Dense fog	
Mobile, Alabama	30.27	768.8	30.32	770.1	50	10.0	93	N	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Montgomery, Alabama	30.12	765.0	30.36	771.1	47	8.3	51	NE	3	1.3	.....	Haze	Fg, sm	Calm	Calm	0	0	Hazy	
Morgantown, West Virginia	29.13	739.9	30.19	766.8	54	12.2	83	S	4	1.8	.....	.....	10s	.....	SW	0	0	Threatening	
Mt. Washington, N. H.	23.52	597.4	29.88	758.9	22	— 5.6	85	NW	78	34.8	.....	8c	0	NW	.....	0	0	Fair	
Nashville, Tennessee	29.74	755.4	30.28	769.1	55	12.8	87	SE	1	0.4	.....	2cs	8s	Calm	E	Inap.	Inap.	Threatening	
New Haven, Connecticut	30.06	763.5	30.18	766.6	39	3.9	71	SW	4	1.8	.....	5c	5s; fg	Calm	sw; calm	0	0	Cloudy	
New London, Connecticut	30.14	765.5	30.19	766.8	36	2.2	80	W	4	1.8	.....	2cs	Hz; fog	SW	Calm	0	0	Fair	
New Orleans, Louisiana	30.21	767.3	30.27	768.8	55	12.8	93	E	4	1.8	.....	.....	Fog	.....	Calm	0	0	Foggy	
Newport, Rhode Island	30.11	764.8	30.16	766.1	45	7.2	92	SW	6	2.7	.....	1c	0	Calm	.....	0	0	Clear	
New York, New York	30.02	762.5	30.20	767.1	42	5.6	74	W	2	0.9	.....	5cs	Fog	W	.....	0	0	Fair	
Norfolk, Virginia	30.23	767.8	30.30	769.6	46	7.8	92	SW	4	1.8	.....	5c	Haze	W	Calm	0	0	Fair	
North Platte, Nebraska	27.02	686.3	29.65	753.1	32	0.0	94	NW	12	5.4	.....	.....	10n	.....	Calm	Inap.	Inap.	Light rain	
Olympia, Washington Ter.	29.58	751.3	29.62	752.3	50	10.0	93	S	3	1.3	.....	.....	10n	.....	Calm	1.36	34.5	Heavy rain	
Omaha, Nebraska	28.89	733.8	29.98	761.5	43	6.1	92	S	2	0.9	.....	.....	Fog	.....	Calm	0	0	Dense fog	
Oswego, New York	29.72	754.9	30.04	763.0	48	8.9	81	S	4	1.8	.....	.....	Fog	.....	.....	0	0	Foggy	
Pembina, Dakota	29.39	746.5	30.30	769.6	12	—11.1	80	NW	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Philadelphia, Pennsylvania	30.18	766.6	30.23	767.8	42	5.6	83	N	2	0.9	.....	.....	8ks; fg	.....	NW; Calm	0	0	Cloudy	
Phœnix, Arizona	.....	.....	.....	.....	44	6.7	100	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Pike's Peak, Colorado	17.67	448.8	29.88	758.9	7	—13.9	77	NW	1	0.4	.....	5cs	0	Calm	.....	0.07	1.8	Fair	
Pioche, Nevada	24.02	610.1	29.79	756.7	37	2.8	81	S	3	1.3	.....	.....	10s	.....	Calm	0.07	1.8	Cloudy	
Pittsburg, Pennsylvania	29.32	744.7	30.13	765.3	54	12.2	93	SW	6	2.7	.....	.....	10n	.....	SW	0.10	2.5	Light rain	
Port Huron, Michigan	29.40	746.7	30.09	764.3	35	1.7	90	SW	10	4.5	.....	0	5s	.....	SW	0	0	Fair	
Portland, Maine	30.00	762.0	30.05	763.3	34	1.1	70	SW	10	4.5	.....	5k	Haze	NW	.....	0	0	Fair	
Portland, Oregon	29.64	752.8	29.74	755.4	48	8.9	92	Calm	0	0	.....	.....	10n	.....	Calm	0.21	5.3	Light rain	
Prescott, Arizona	24.78	629.4	30.14	765.5	29	— 1.7	89	NE	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Punta Rassa, Florida	30.21	767.3	30.23	767.8	62	16.7	88	NE	12	5.4	.....	1k	0	NE	.....	0	0	Clear	
Red Bluff, California	29.42	747.3	29.78	756.4	54	12.2	87	S	18	8.0	.....	.....	10n	.....	Calm	0.32	8.1	Light rain	
Rochester, New York	29.40	746.7	30.01	762.2	49	9.4	85	W	13	5.8	.....	0	8s	.....	W	0	0	Fair	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Roseburg, Oregon	29.20	741.7	29.76	755.9	46	7.8	100	Calm	0	0	.....	.....	10n	.....	Calm	0.80	20.3	Light rain ...	
Sacramento, California	29.72	754.9	29.80	756.9	55	12.8	77	S	9	4.0	.....	.....	10u	.....	Calm	Inap.	Inap.	Light rain...	
St. Louis, Missouri	29.57	751.1	30.13	765.3	61	16.1	88	S	7	3.1	.....	.....	10s	.....	Calm	0.03	0.8	Cloudy.....	
St. Marks, Florida	30.30	769.6	30.31	769.9	46	7.8	96	NE	3	1.3	.....	0	0	.....	.....	0	0	Clear.....	
St. Paul, Minnesota	29.26	742.9	30.11	764.8	33	0.6	79	E	1	0.4	.....	0	Fog	.....	Calm	0	0	Clear.....	
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salt Lake City, Utah	25.63	651.0	29.96	761.0	42	5.6	83	SE	4	1.8	.....	.....	10s	.....	Calm	0.02	0.5	Cloudy.....	
San Antonio, Texas	29.40	746.7	29.98	761.5	66	18.9	95	SE	6	2.7	.....	.....	10s	.....	SE	0.16	4.1	Threatening	
San Diego, California	29.94	760.5	30.01	762.2	64	12.2	79	NE	4	1.8	.....	.....	10s	.....	Calm	0	0	Cloudy.....	
Sandusky, Ohio	29.46	748.3	30.13	765.3	55	12.8	87	SW	8	3.6	.....	.....	Fog	.....	.....	0.05	1.3	Light rain...	
Sandy Hook, New Jersey	30.18	766.6	30.20	767.1	41	5.0	91	W	7	3.1	.....	8k	Haze	W	.....	0	0	Cloudy.	
San Francisco, California	29.73	755.1	29.79	756.7	55	12.8	87	Calm	0	0	.....	.....	10n	.....	Calm	0.79	20.1	Heavy rain..	
Santa Fé, New Mexico	23.26	590.8	29.80	756.9	32	0.0	100	N	3	1.3	.....	0	0	.....	.....	0.31	7.9	Clear	
Savannah, Georgia	30.25	768.3	30.34	770.6	51	10.6	93	NW	5	2.2	.....	0	Fog	.....	NW	0	0	Foggy.....	
Shreveport, Louisiana	30.02	762.5	30.24	768.1	57	13.9	94	Calm	0	0	.....	.....	Fog	.....	Calm	Inap.	Inap.	Foggy	
Smithville, North Carolina	30.31	769.9	30.35	770.9	52	11.1	100	Calm	0	0	.....	2ck	Fog	W	Calm	0	0	Fair	
Springfield, Massachusetts	29.95	760.7	30.08	764.0	33	0.6	69	S	3	1.3	.....	5ck	0	W	.....	0	0	Fair	
Stockton, Texas	26.97	685.0	29.97	761.2	53	11.7	93	S	2	0.9	.....	0	0	.....	.....	0	0	Clear.....	
Thatcher's Island, Mass	30.05	763.3	30.10	764.5	42	5.6	74	SW	24	10.7	.....	2cs	0	NW	.....	0	0	Fair	
Toledo, Ohio	29.44	747.8	30.12	765.0	52	11.1	100	SW	2	0.9	.....	.....	Fog	.....	SW	0	0	Foggy.....	
Tucson, Arizona	27.57	700.3	30.12	765.0	60	15.6	44	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear.....	
Tybee Island, Georgia	30.30	769.6	30.34	770.6	50	10.0	93	Calm	0	0	.....	0	Fog	.....	.....	0	0	Clear.....	
Umatilla, Oregon	29.40	746.7	.....	.....	36	2.2	90	Calm	0	0	.....	.....	10s	.....	Calm	0	0	Cloudy.....	
Vicksburg, Mississippi	30.03	762.7	30.30	769.6	57	13.9	87	SE	4	1.8	.....	10k	0	SE	.....	0	0	Cloudy.....	
Virginia City, Montana	24.18	614.2	29.66	753.4	31	— 0.6	79	SE	10	4.5	.....	0	0	.....	.....	0	0	Clear.....	
Visalia, California	29.52	749.8	29.90	759.4	46	7.2	84	W	3	1.3	.....	0	1s	.....	Calm	0	0	Clear.....	
Washington, D. C.	30.13	765.3	30.25	768.3	41	5.0	91	Calm	0	0	.....	.....	.....	.....	Calm	0	0	Clear.....	
Wickenburg, Arizona	.....	.....	.....	.....	35	1.7	80	SW	.....	.....	.....	8ck	10ks;fg	.....	NW;W	0	0	Cloudy.....	
Wilmington, N. Carolina	30.25	768.3	30.34	770.6	51	10.6	93	SW	2	0.9	.....	.....	0	Calm	.....	0	0	Fair	
Winnemucca, Nevada	25.52	648.2	29.88	758.9	29	— 1.7	89	NE	12	5.4	.....	0	10s;fg	.....	SW;Calm	0	0	Cloudy	
Wood's Holl, Mass	30.14	765.5	30.19	766.8	45	7.2	84	S	18	8.0	.....	Haze	0	.....	.....	0	0	Clear	
Yankton, Dakota	28.72	729.5	30.06	763.5	32	0.0	84	SE	4	1.8	.....	.....	10s	.....	Calm	0	0	Cloudy.....	
Yuma, Arizona	29.83	757.7	30.00	762.0	51	10.6	93	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.....	
Sub-Series.																			
York Factory, B. A.	29.86	758.4	29.91	759.7	— 1.0	—18.3	84	W	10	4.5	.....	.....	10n	.....	.....	0.02	0.5	Snowing.....	J. Fortescue, W. Wood.
Havana, Cuba, W. I.	30.09	764.3	30.11	764.8	71	21.7	75	SE	2.4	1.1	.....	2k	0	E	.....	0	0	Fair	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.09	764.3	30.10	764.5	78	25.6	90	Calm	0	0	.....	5c	5n	Calm	NE	0.02	0.5	.....	James Gall.
Navassa, W. I.	29.87	758.7	29.95	760.7	80	26.7	.....	NE	10	4.5	.....	.....	.....	.....	.....	0.10	2.5	Fair	F. M Everett.
St. Thomas, W. I.	.....	.....	.....	.....	81	27.2	82	E	3	1.3	.....	2c	2n	NE	....	0.4	10.	.....	G. O. Gellich.
Paramaribo, D. Guiana, S. A.	.....	.....	29.94	760.5	83	28.3	79	SE	.....	.....	2	.....	8ks	.....	.....	1.175	29.85	Cloudy.....	C. J. Hering.
Batavia, Dutch Guiana, S. A	29.95	760.7	29.96	760.9	84.2	29	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0	Cloudy	Dr. H. Groot.
Medellin, Colombia, S. A.	25.14	638.5	.....	.....	69.0	20.6	76	Calm	.....	.....	0	2k	3ks	.....	.....	0	0	Fair.....	Thomas Herran.
Honolulu, Oahu, H. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Daniel Smith.
Makawao, Maui, H. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo; for Batavia, the barometer reduced to freezing but not to sea-level. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,838 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft.. or 1,846.2 m.; Clifton, about 2,892 ft., or 881.6 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,102 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.8 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,916.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Ploche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,862.2 ft.. or 1,329.6 m.; Santa Fe, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m. Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft.. or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.67 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Ploche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation

STATIONS AND VESSELS.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard Mare Island, Cal.	29.79	756.7	57	13.9	52	11.1	100	SSE	0.6	0.3	.....	.....	10	.....	Calm	0.223	5.67	.....	.....	Raining	
Navy Yard, Pensacola, Fla.	30.40	772.1	.....	.....	55	12.8	100	NNE	4	1.8	.....	.....	2	.....	.....	0	0	.....	.....	D. clouds.....	
Navy Yard, Portsmouth, N.H.	30.09	764.3	63	17.2	33	0.6	80	SW	.....	.....	1	.....	.....	.....	.....	0	0	.....	.....	Clear.....	
Naval Hospital, Yokohama, Japan.....	29.92	760.0	57	13.9	49	9.4	85	NE	.....	.....	3	.....	10n	.....	NNE	0.01	0.3	.....	.....	Raining.....	
Alliance, Smyrna, Turkey.....	30.02	762.5	62	16.7	52	11.1	79	ENE	.....	.....	2	.....	10	.....	E	.....	.....	.....	.....	Rainy.....	
Ashuelot. Shanghai, China.....	30.20	767.1	58	14.4	47	8.3	100	NNE	.....	.....	3–6	.....	10	.....	N&E	.....	.....	.....	.....	Drizzling.....	
Canonicus, New Orleans, La.....	30.21	767.3	44	6.7	55	12.8	93	E	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	Foggy	
Colorado, New York, N. Y.....	30.20	767.1	38	3.3	40	4.4	82	WSW	2	0.9	.....	.....	8	.....	W	0	0	.....	.....	Dense fog....	
Despatch, Constantinople, Turkey.	30.18	766.6	80	26.7	50	10.0	86	NE	.....	.....	3–4	.....	10	.....	NE	.....	.....	.....	.....	Rainy.....	
Essex, St. Paul de Loanda, Lower Guinea.	29.79	756.7	82	27.8	85	29.4	87	W	.....	.....	1	.....	10	.....	.....	.....	.....	Smooth	.....	Overcast.....	
Franklin, Norfolk, Va.....	30.36	771.1	65	18.3	48	8.9	85	WSW	4	1.8	.....	.....	.....	.....	WSW	0	0	.....	.....	Clear	
Guard, Lisbon, Portugal.....	30.38	771.6	67	19.4	52	11.1	54	NE	.....	.....	1	.....	3	.....	.....	.....	.....	.....	.....	Hazy.....	
Lackawana, Mare Island, Cal....	29.86	758.4	.....	....	58	14.4	82	Calm	.....	.....	0	.....	10	.....	.....	.....	.....	.....	.....	Raining.....	
Marion, Villefranche, France.....	30.11	764.8	58	14.4	54	12.2	74	SW	.....	.....	1	.....	1	.....	.....	0	0	Smooth	S	D. clouds.....	
Michigan, Erie, Pa.....	29.62	752.3	64	17.8	50	10.0	64	W	.....	.....	1	.....	10	.....	W	.....	.....	.....	.....	Cloudy...	
Monocacy, Formosa Channel.....	29.88	758.9	69	20.6	68	20.0	100	SSW	.....	.....	1	.....	0	.....	.....	0	0	.....	.....	Foggy	
New Hampshire, Port Royal, S.C.....	30.50	774.7	.....	.....	53	11.7	93	Calm	0	0	.....	.....	0	.....	.....	0	0	.....	.....	Blue sky.....	
Omaha, Valparaiso, Chili.....	29.82	757.4	65	18.3	63	17.2	83	Calm	0	0	.....	.....	1	.....	Calm	0	0	.....	.....	Pleasant.....	
Onward, Callao, Peru.....	29.92†	760.0†	76	24.4	74	23.3	86	SE	.....	.....	2	.....	10	.....	.....	.....	.....	Long	W	D. clouds.....	
Ossipee, Norfolk, Va.....	30.33	770.4	75	23.9	48	8.9	85	SSW	.....	.....	1	.....	2	.....	W	.....	.....	.....	.....	D. clouds. ...	
Palos, Shanghai, China.....	30.17	766.3	54	12.2	47	8.3	100	NNE	.....	.....	4	.....	10	.....	Calm	.....	.....	.....	.....	Rainy.....	
Plymouth. N. 16° 25,′ W. 75° 28′.....	29.97	761.2	82	27.8	81	27.2	96	ENE	.....	.....	5	.....	8	.....	.....	.....	.....	Mod'ate	NE	Overcast.....	
Powhatan, Norfolk, Va.....	....	.....	.....	.....	47	8.3	100	S	2.4	1.1	.....	.....	6	.....	.....	0	0	.....	.....	Pleasant.....	
Ranger, Shanghai, China.....	30.28	769.1	.....	.....	51	10.6	86	N	.....	.....	3–5	.....	10	.....	N	.....	.....	.....	.....	Rainy...	
Rio Bravo, Brownsville, Texas.....	30.01	762.2	.....	.....	66	18.9	94	E	.....	.....	1	.....	2	.....	E	.....	.....	.....	.....	Hazy.....	
Santee, Annapolis, Md.....	30.29	769.4	62	16.7	41	5.0	91	S	.....	.....	1	.....	2	.....	W	0	0	.....	.....	Hazy.....	
Saratoga, Norfolk, Va.....	.....	.....	.....	.....	43	6.1	92	W	.....	.....	0–1	.....	2	.....	Calm	0	0	.....	.....	Clear.....	
St. Louis, League Island, Pa	30.05	763.3	35	1.7	36	2.2	90	SW	2	0.9	.....	.....	8	.....	SW	0	0	.....	.....	Cloudy.....	
Swatara, Norfolk, Va.....	30.34	770.6	.....	.....	55	12.8	80	W	.....	.....	1	.....	2	.....	S&W	.....	.....	.....	.....	D. clouds.....	
Tennessee, N. 32° 10, E. 127° 20′.....	29.93	760.2	68	20.0	61	16.1	88	NNE	.....	.....	3	.....	9	.....	N&W	0.08	2.0	Mod'ate	N&E	D clouds.....	
Trenton, Villefranche, France.....	30.19	766.8	.....	.....	66	18.9	40	NNW	5	2.2	.....	.....	1	.....	N&E	0	0	.....	.....	D. clouds.....	
Vandalia, Naples, Italy.....	30.01	762.2	59	15.0	54	12 2	55	NE	.....	.....	1–2	.....	2	.....	N	.....	.....	.....	.....	D. clouds.....	
Wabash, Boston, Mass.....	30.14	765.5	48	8.9	39	3.9	82	SW	14	6.3	.....	.....	7	.....	SW	0	0	.....	.....	D. clouds....	
Wyoming, Washington, D. C.....	30.59†	777.0†	.....	.....	41	5.0	.....	Calm	.....	.....	0	.....	8	.....	.....	.....	.....	.....	.....	D. clouds.....	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. The position given for the Plymouth is that at noon; local time, instead of that at 7:35 a. m., Washington time.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Character.	Direction from—		
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama, Victoria, B. C.			29.49*	749.0*	53	11.7		Calm			0		0			Mod'ate	WSW	Clear.	Capt. Seabury.
S. S. City of Peking, N. 29° 23′, W. 179° 05′			30.32*	770.1*	66	18.9	89	N			5		10		N	Mod'ate	NNW	Showery	Lt. Z. L. Tanner, U.S.N.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio, Hong-Kong, China			29.90	759.4	78	25.6		SSE			2		2		SSE			D. clouds	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

NOTE.—The originals give the wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. *Aneroid.

WHITE STAR LINE MARINE SERIES.																			
Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.																			
S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.																			
S. S. Belgic																			Capt. John Metcalf.
S. S. Gaelic, N. 27° 00′, E. 122° 54′			29.82†	757.4†	68	20.0	??	NW			8		k		SE	Heavy	NW	Raining	Capt. W. H. Kidley
S. S. Oceanic																			Capt. H. Parsell.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. †Aneroid.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.																			
Furnished by the coöperation of A. Schumacher & Co., Agents.																			
S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig N. 49° 24′, W. 26° 55′			30.47	773.9	52.0	11.1	66	S			4		10		S	High	WSW	Overcast	Capt. Undütsch.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds.

UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Lo'wr	Upper.	Lower.	Character.	Direction From—		
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second	0—10.	0—10.	0—10.	From—	From—				
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, Philadelphia, Pa			30.22*	767.6*	42	5.6	??	SW			4		9		W			Fine	Captain Sargent.
S. S. Ohio, N. 51° 02′, W. 21° 16′			30.53	775.4	54	12.2	87	SSE			2		6		SSE	Rough	WSW	Misty	Captain Morrison.
S. S. Pennsylvania, N. 48° 54′, W. 33° 44′			30.24†	768.1†	52	11.1	93	SW			5		5		SW	Heavy	SW to NW	Cloudy	Captain Harris.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. * Aneroid † Corrected for temperature and elevation, instrumental error not known.

RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

S. S. Nederland																			Capt. Randle.
S. S. Switzerland, N. 49° 16′, W. 22° 24′			30.57*	776.5*				S	5	2.2			2		S	Mod'ate	W	Fine	Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

*Aneroid: regulated to standard at Antwerp.

ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

S. S. Hibernian																			Capt. W. Richardson.
S. S. Scandinavian																			

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller. Kennebunk, Maine			30.12	765.0	35	1.7	90	SW	7	3.1			2ck		NW			Clear	Capt. James Jorgensen.

NOTE.—The originals for the schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^{d}.,) Chief Signal Officer, U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON DECEMBER 18, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
0:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:48 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:18 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:38 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours	.....	.....	30.44	773.1	58.3	14.6	63	Calm	.....	.....	0	.....	0	.....	.....	0	0	Clear	Michel.
Algiers	.....	.....	30.27	768.9	57.2	14.0	71	NE	.....	.....	1	.....	5	.....	.....	0.122	3.1	Cloudy	Peter.
La Calle	.....	.....	30.07	763.7	59.2	15.1	64	NNW	.....	.....	2	.....	5	.....	.....	0.354	9.0	Cloudy	Fleury.
Tunis	.....	.....	30.11	764.7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Jacques.
Sfax	.....	.....	30.07	763.7	59.0	15.0	.....	NNW	.....	.....	3	.....	1	.....	.....	.....	.....	Very fair	Husson.
Saida	.....	.....	30.29	769.8	47.7	8.7	84	NNW	.....	.....	1	.....	2	.....	.....	0	0	Fair	Millot.
Tebessa	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Bassières.
Geriville	.....	.....	30.23	767.9	43.2	6.2	91	N	.....	.....	4	.....	4	.....	.....	0	0	Cloudy	Lemaillot.
Laghouat	.....	.....	30.27	768.8	51.8	11.0	41	N	.....	.....	4	.....	0	.....	.....	0	0	Clear	Guyot.
Biskra	.....	.....	30.18	766.6	61.5	16.4	36	NW	.....	.....	1	.....	5	.....	.....	0	0	Cloudy	Kuntz.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890 ? meters, or 2,919.9 ? feet; Tebessa, 1,088 ? m., or 3,569.4 ? ft.; Geriville, 1,380 ? m.; or 4,461.7 ? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

Agram	29.53	750.0	30.11	764.8	32.5	0.3	89	Calm	.....	.....	0	.....	6	.....	.....	0.008	0.2	.....	Prof. Ivan Stozir
Cracow, I. R. Observatory	29.35	745.5	30.16	766.0	30.2	— 1.0	90	W	.....	.....	1	.....	10	.....	.....	0	0	.....	Dr. Wierzbiski.
Eperies	29.19	741.3	30.11	764.9	30.2	— 1.0	94	Calm	.....	.....	0	.....	10	.....	.....	0	0	.....	Julius Mikolik.
Gratz	28.80	731.5	30.11	764.9	31.1	— 0.5	83	S	.....	.....	2	.....	10	.....	.....	0.067	1.7	.....	Andreas Rospini.
Hermannstadt	28.55	725.2	30.06	763.4	28.2	— 2.1	96	NE	.....	.....	1	.....	10	.....	.....	0.240	6.10	Snowing	Prof. Reissenberger.
Kremsmünster	28.70	729.0	30.10	764.6	33.8	1.0	96	Calm	.....	.....	0	.....	10	.....	.....	0.118	3.0	.....	Prof. C. Wagner.
Lemberg	29.08	738.7	30.13	765.3	27.9	— 2.3	98	S	.....	.....	1	.....	10	.....	.....	0.268	6.8	.....	Dr. T. Stanecki.
Pola	29.94	760.4	30.05	763.3	45.7	7.6	92	W	.....	.....	1	.....	2s	.....	.....	0	0	.....	I.R.Hydrographic Office.
Szathmar	29.02	752.4	30.11	764.8	32.0	0.0	94	NE	.....	.....	2	.....	10	.....	.....	0.039	1.0	Snowing	Johann Tamas, S. J.
Szegedin	29.77	756.1	30.07	763.7	29.1	— 1.6	96	Calm	.....	.....	0	.....	10	.....	.....	0.055	1.40	.....	Karl Stancel.
Trieste	30.00	761.9	30.10	764.5	44.6	7.0	49	Calm	.....	.....	0	.....	2	.....	.....	0	0	.....	P. Busin.
Vienna	29.38	746.2	30.12	765.0	28.8	— 1.8	94	Calm	.....	.....	0	.....	10	.....	.....	0.646	16.4	Snowing	I. R. Central Met. Obs'y.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

Arlon	28.80	731.6	30.36	771.2	39.9	4.4	83	NW	.....	.....	5	.....	5	.....	.....	0.012	0.3	.....	Prof. M. Passau.
Brussels	30.18	766.6	30.39	771.9	46.0	7.8	79	NW	.....	.....	5	.....	9	.....	NNW	0.002	0.05	.....	Royal Observatory.
Furnes	30.45	773.5	30.48	774.1	47.1	8.4	78	NW	.....	.....	4	.....	4	.....	.....	0.024	0.6	.....	M. E. de Cae.
Maeseyck	30.18	766.6	30.31	769.9	45.7	7.6	80	NW	.....	.....	4	.....	7	.....	.....	0	0	.....	M. Pierrot.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	30.33	770.4	30.43	772.9	41.6	5.3		WSW	8	3.6			2			0	0	Blue sky	W. Boswell.
Ardrossan	30.48	774.2	30.49	774.4	48	8.9		WSW			3		7					D. clouds	William McNeil.
Armagh, Observatory			30.58	776.7	43.6	6 1		SSW	4	1.8			10					Gloomy	S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)			30.56	776.2	45.5	7.5		W	13	5.8			6					D. clouds	John Hartnup.
Birr Castle, (Parsonstown)			30.58	776.7	38.8	3.8		SSE			1		7					D. clouds	J. Dreyer.
Bradford, Yorkshire	30.03	762.7	30.42	772.7	44.9	7.2		N			1		5			0	0	D. clouds	J. McLandsborough.
Bridgetown, (Barbados)	29.88	758.9	29.91	759.7	81	27.2		NE			1		2					D. clouds	Pvt. G. W. Roberts, A.
Cambridge, Observatory			30.52	775.2	46.0	7.8		NNW			1		1					D. clouds	H. Todd. [H. C.
Cardington			30.54	775.7	43.6	6.4		NW			1		2					Blue sky	John McLaren.
Chatham, School M. E	30.37	771.4	30.50	774.7	45.2	7.3		W			1		3					Hazy	Lt. W. G. Morris, R. E.
Dartmoor	29.10	739.1	30.64	778.2	40.6	4.8		NE			2		2					Fine	Alexander Watt.
Davos Platz (Switzerland)																			Francis Redford, M. A.
Donaghadee	30.50	774.7	30.53	775.4	42	5.6		WNW			2		3					D. clouds	J. Mac Gowan.
Dover	30.47	773.9	30.50	774.7	44	6.7		NNW			3		2					Hazy	J. Costello.
Eccles, (near Manchester)			30.54	775.7	40.8	4.9		WNW					10					Foggy	Thomas Mackereth.
Falmouth, Observatory	30.39	771.9	30.63	778.0	47.2	8.4		NW			0		1					Hazy	The Staff.
Fort Napier, (Natal)	27.44	697.0	29.63	752.6	87.2	30.7		E			3		0					Blue sky	Pvt. G. Salmon, A. H. C
Free Town, (Sierra Leone)			29.88	758.9	86	30.0		W			2		3					D. clouds	
Galway, Queen's College																			Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	30.31	769.9	30.36	771.1	57.0	13.9		E			4		2					D. clouds	Corpl. C. Aitken, A. H. C.
Glasgow, Observatory	30.27	768.8	30.48	774.2	42.9	6.1		SSW			1		9					Gloomy	D. G. Maclean.
Great Yarmouth	30.46	773.7	30.47	773.9	45	7.2		NNW			3		2					Misty	G. T. Watson.
Greenwich, Royal Obs'y	30.35	770.9	30.53	775.4	43.3	6.3		N			1		3					Blue sky	The Staff, for G. B. Airy.
Guernsey	30.34	770.6	30.57	776.5	48	8.9		NNW			1		3					D. clouds	Dr. S. E. Hoskins, F. R. S.
Helston			30.61	777.5	48	8.9		N			2		3			0.05	1.3	D. clouds	M. P. Moyle.
Holyhead	30.52	775.2	30.57	776.5	46	7.8		WNW			2		1					Blue sky	John Tilston.
Jersey	30.32	770.1	30.62	777.7	48.8	9.3		N			2		7					D. clouds	J. Fisher.
Kew, Observatory			30.54	775.7	44.7	7.1		NNW	7	3.1			7					D. clouds	The Staff.
Kingstown	30.56	776.2	30.58	776.7	47	8.3		W			1		1					Blue sky	George Mitchell.
Leicester, Museum			30.56	776.2	44.5	6.9		W			1		10					Overcast	Wm. J. Harrison, F. G. S.
Malta, (Mediterranean)	29.82	757.4	29.90	759.4	56.0	13.3		NW			3		6					D. clouds	Sgt. Fred. Travis, A. H.
Nairn	30.28	769.1	30.38	771.6	44	6.7		W			2		2					¾ clouded	W. D. Penny. [C.
Nassau, (Bahamas)			30.10	764.5	73.5	23.1		NE			5		5			Blank	Blank	D. clouds	C. S. Duncombe.
Nottingham, Observatory	30.35	770.9	30.55	776.0	45.7	7.6		WNW			1		3c					D. clouds	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	30.02	762.5	30.56	776.2	43.0	6.1		NW			2		9		NW	0	0	Hazy	Rev. Stephen Whitty
Oxford, Radcliffe Obs'y			30.54	775.7	45	7.2		N			1		3					Blue sky	Mr. Lucas.
Plymouth	30.53	775.4	30.61	777.5	45.2	7.3		N			1		0					Blue sky	John Merrifield.
Roche's Point	30.57	776.5	30.60	777.2	43	6.1		N			2							Foggy	W. Kennedy.
Saint Ann's Head			30.61	777.5	49	9.4		S			1		2					Blue sky	John C. Walker.
Sandwick Manse, (Orkneys.)			30.34	770.6	45.5	7.5		SW	13	5.8			10					Snowing	Rev. C. Clouston, LL. D
Scutari, Cemetery, (Turkey			29.79	756.7	52.0	11.1		N			2		9			Blank	Blank	D. clouds	Sergt. W. H. Lyne.
Sheffield	30.27	768.8	30.56	776.2	46.9	8.3		NW			1		2			0.03	0.8	Blue sky	W. F. Cooper.
Silloth Rectory	30.47	773.9	30.50	774.7	43.8	6.6	83	W			2		8			0.080	2.03	D. clouds	Rev. F. Redford, M. A.
Stonyhurst, Observatory					41.8	7.1		S			0		7					Hazy	Rev. S. J. Perry.
Stornoway, Lews C., (Hebr.)			30.32	770.1	45	7.2		W			1		10					Overcast	John Smith.
Stratfield Turgiss	30.33	770.4	30.56	776.2	42.8	6.0		NW			1		0					Blue sky	Rev. C. H. Griffith, F. M. S
Thurso			30.32	770.1	43	6.1		SSW			2		6					D. clouds	John Trotter.
Truro, Royal Institution			30.58	776.7	50	10.0		NW			2		3					D. clouds	W. Newcombe.
Valencia, Observatory			30.56	776.2	49.7	9.8		S	13	5.8			10					Misty	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)																			Henry Mercer.
Cape Good Hope, Obs'y	30.02	762.5	30.06	763.5	75.0	23.9	50	WSW	16	7.2		9	7						The Staff, for E. J. Stone.
Hobart Town, (Tasmania)			29.44	747.8	59.0	15.0	77	NW			3		8k			0.06	1.5		Francis Abbott, F. R. A. S.
Leith, Restalrig Park																			Andrew Gibb.
Mauritius, Observatory	29.76	755.9	29.94	760.6	79.9	26.6	68	ESE	21.0	9.4		0	6		ESE	0	0	Squally	C. Meldrum.
Melbourne, Observatory	29.66	753.3	29.76	755.9	54.0	12.2	84	W	7	3.1			4			0.70	17.8	Fine	R. L. J. Ellery.
Monach L't-house, (Hebrides)																			J. Youngclause.
North Unst, (Shetland Is.)																			Robert Burnet.

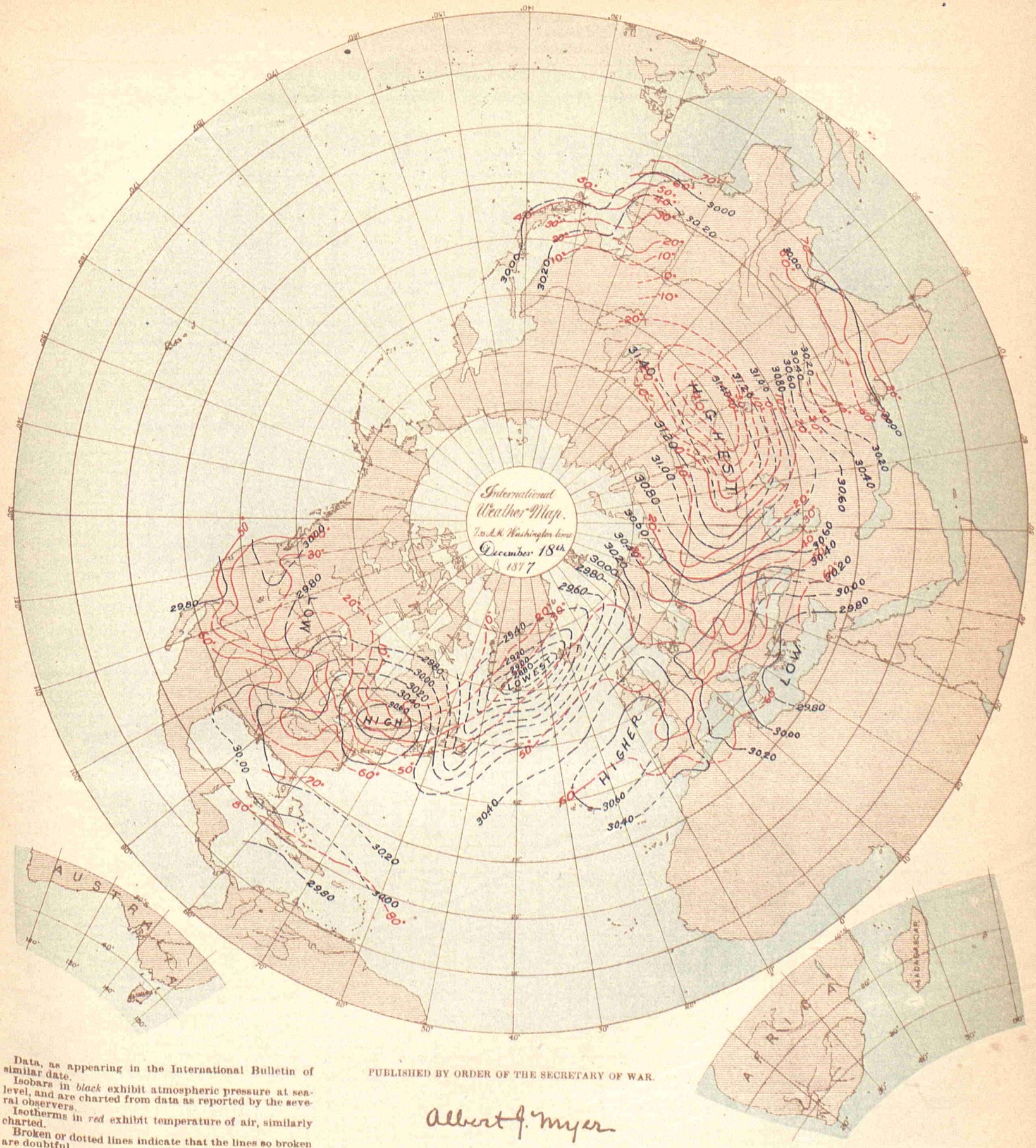
Note.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m.

Marine Series.

Vessels.

	Sea or swell. Height scale 0—9	Sea or swell. Direction from—		
S. S. Algeria				Capt. W. Watson.
S. S. Batavia				Capt. J. E. Mouland.
Ship Camperdown				Capt. A. T. Miller.
Brig Catherine				Capt. Adam Smith.
Barque Celeste				Capt. D. F. McKechnie
S. S. Hibernia				Capt. W. R. Cato
Barque Maroon				Capt. A. T. Brown.
Ship Mikado				Capt. C. C. Prehn.
Royal Alice, N. 41° 5′, W. 65° 30′	7	N	D clouds	Capt. E. M. Hughes.
S. S. Seine				Capt. H. Manning.
Barque Sorata				Capt. Jas. J. Price.
Schooner Traveller				Capt. Alex. Simpson.

Note.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	BAROMETER. Corrected for instrum'tal error and temperature. Inches.	BAROMETER. Corrected for instrum'tal error and temperature. Millimeters.	BAROMETER. Reduced to sea-level. Inches.	BAROMETER. Reduced to sea-level. Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Upper. From—	CLOUDS. Direction. Lower. From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	WEATHER.	OBSERVER.
San José	26.16	664.4	.....	.....	67.1	19.5	83	SE	.....	.....	3	pc	1k	.....	E	0	0	.....	Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	30.23	767.8	30.28	769.0	31.3	— 0.4	100	ENE	.....	.....	2	.....	7	.....	.....	.....	.....	.....	.....
Fanöe	30.25	768.3	30.27	768.8	33.6	0.9	92	NNE	.....	.....	4	.....	10	.....	.....	.....	.....	.....	.....
Godthaab, (Greenland)	29.33	744.9	29.37	746.0	8.6	—13.0	88	Calm	.....	.....	0	.....	9	.....	.....	.....	.....	Snowing	.....
Stykkisholm, (Iceland)	28.82	731.9	28.86	733.0	38.7	3.7	100	S	.....	.....	7	.....	10	.....	.....	.....	.....	Raining	.....
Thorshavn, (Faröe)	29.98	761.6	30.02	762.5	45.5	7.5	88	SW	.....	.....	6	.....	8	.....	.....	.....	.....	.....	.....
Vestervig	30.15	765.8	30.32	770.1	30.9	— 0.6	94	Calm	.....	.....	0	.....	8	.....	.....	.....	.....	.....	.....

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

Alençon, Normal School	30.02	762.6	30.58	776.6	46.4	8	43	NE	.....	.....	1	.....	5	.....	NE	0	0	Cloudy	Collignon, Director.
Amiens, Normal School	30.35	771.0	30.47	773.9	47.8	8.8	60	WNW	.....	.....	3	.....	2	.....	W	0.063	1.6	Slightly cl'dy	Bonvarne, Director.
Avignon, Normal School	30.18	766.5	30.26	768.5	48.2	9	65	NNW	.....	.....	6	.....	0	.....	.....	0	0	Very clear	Mr. Giraud, Director
Bar-sur-Seine	29.84	758.0	30.43	773.0	44.8	7.1	83	N	.....	.....	1	.....	10	.....	N	0.055	1.4	Covered	C. Saillard.
Beaumette Obs'y (Angers)	30.37	771.5	30.54	775.8	48.0	8.9	83	N	2.7	1.2	.....	.....	.....	.....	N	0	0	.....	Albert Cheux.
Beauvais	30.21	767.3	30.51	774.9	45.5	7.5	76	N	.....	.....	2	.....	5	.....	N	0.010	0.25	Cloudy	Normal School.
Besançon	29.47	748.4	30.39	772 0	40.3	4.6	97	S	.....	.....	2	.....	8	.....	SW	0.16	4.	Very cloudy	Normal School.
Bourg-en-Bresse	29.55	750.6	30.46	773.7	40.5	4.7	84	NE	.....	.....	2	.....	10n	.....	N	0.08	2.	Covered	Normal School.
Bourges, Normal School	29.94	760.5	30.51	775.0	41.8	7.1	88	W	.....	.....	4	.....	10	.....	W	0.126	3.2	Covered	A. Wagner, Director.
Brest, Naval Observatory	30.32	770.0	30.54	775.6	49.8	9.9	73	NNE	.....	.....	3	.....	1k	.....	NNE	0.039	1.00	.....	The Staff.
Carcassonne, Normal School	30.05	763.3	30.48	774.2	45.5	7.5	88	W	.....	.....	4	.....	0	.....	.....	0	0	Clear	Vateau, Director.
Caen	30.46	773.7	30.54	775.6	49.6	9.8	74	SSW	.....	.....	4	.....	2	.....	NNW	0.04	1.	Slightly cl'dy	Normal School.
Chartres, Normal School	29.85	758.3	30.44	773.2	46.4	8	.....	N	.....	.....	4	.....	9	.....	S	0	0	.....	Lequin, Director.
Châlons-sur-Marne, N. Sch'l	30.07	763.8	30.40	772.2	44.6	7.0	85	N	.....	.....	4	.....	8kn	.....	N	0.039	1.0	Very cloudy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	29.00	736.0	30.47	773.8	43.3	6.3	70	NW	.....	.....	2	.....	10	.....	N	0	0	Covered	Alluard, Director.
Commercy, Normal School	29.46	748.2	30.37	771.4	43.3	6.3	82	NW	.....	.....	2	.....	10	.....	NW	0.04	1.	Covered	Dr. Goulet, Director.
Commune de Gréasque*	28.99	736.3	30.13	765.3	48.7	9.3	54	NW	.....	.....	6	.....	2	.....	NW	0	0	¼ covered	M. Kina.
Grenoble	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Normal School.
La Roche-sur-Yon, N. School	30.35	770.8	30.57	776.4	47.5	8.6	83	NW	.....	.....	2	.....	5	.....	NNW	0.016	0.4	Cloudy	Mouillot, Director.
Le Mans, Normal School	30.23	767.9	30.55	776.0	46.6	8.1	50	N	.....	.....	2	.....	2	.....	N	0	0	Slightly cl'dy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.44	747.7	30.40	772.1	40.5	4.7	97	SSW	.....	.....	1	.....	10	.....	.....	0.102	2.60	Covered	Voudez, Director.
Lorient, Naval Observatory	30.51	774.9	30.61	777.4	52.9	11.6	69	NNW	.....	.....	3	.....	5	.....	N	0	0	½ covered	T. Carré, Director.
Mâcon, Normal School	29.67	753.7	30.38	771.7	46.0	7.8	88	NNW	.....	.....	4	.....	10	.....	NW	0.16	4.	Covered	M. Marchal, Director.
Metz	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. A. Schuster, Dir.
Mirecourt	29.27	743.4	30.35	770.8	43.0	6.1	79	NW	.....	.....	4	.....	10	.....	N	0.51	13.	Covered	Normal School.
Nismes, Normal School	30.10	764.6	30.39	771.8	52.9	11.6	78	NW	.....	.....	4	.....	2	.....	S	0	0	Slightly cl'dy	Boyer, Director.
Orleans, Normal School	30.08	764.1	30.48	774.1	45.7	7.6	83	N	.....	.....	2	.....	8	.....	.....	0.047	1.2	Very cloudy	Bernard, Director.
Paris, Observatory	30.25	768.3	30.50	774.6	45.1	7.3	77	WNW	.....	.....	1	.....	8k	.....	NE	0.027	0.68	Very cloudy	National Observatory.
Privas	29.21	742.0	30.28	769.1	44.6	7	77	N	.....	.....	2	.....	10	.....	N	0	0	Covered	Normal School
Rochefort, Naval Obs'y	30.54	775.6	30.57	776.4	47.5	8.6	97	N	.....	.....	1	.....	10	.....	S	0	0	Covered	Lt. Decante, Director.
Rouen, Normal School	30.45	773.3	30.53	775.5	48.4	9.1	70	NW	.....	.....	2	.....	5	.....	NW	0	0	Cloudy	F. Lucard, Director.
Tarbes, Normal School	29.45	747.9	30.57	776.4	46.4	8	86	W	.....	.....	2	.....	10	.....	.....	0.04	1.	Covered	T. Hugues, Director.
Villefranche	29.97	753.5	30.40	772.2	46.2	7.9	89	N	.....	.....	3	.....	10	.....	N	0.08	2.	Covered	Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.75	755.6	29.78	756.3	80.6	27	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0	.....	L'Abbé Marchési.
Marseilles, Observatory	.....	.....	30.08	763.9	51.8	11.0	45	NW	.....	.....	6	.....	1	.....	.....	0	0	Clear	The Staff.
Mont-Louis	25.08	636.9	30.39	771.9	37.2	2.9	50	NNW	18.6	8.33	.....	.....	1	.....	NW	0	0	.....	Mr. Falguère.
Nice	.....	.....	30.02	762.4	52.0	11.1	50	E	.....	.....	3	.....	0	.....	.....	0	0	Clear	Dr. A. Niepce.
Paris, Montsouris Obs'y	30.20	767.0	30.47	774.0	40.1	4.5	82	NNW	.....	.....	2	.....	.....	.....	.....	0.020	0.5	.....	Marié Davy, Director.
Perpignan	.....	.....	30.38	771.7	51.4	10.8	59	NW	14.9	6.66	.....	.....	5	.....	NW	0	0	.....	Dr. Fines.
Pic du Midi, (Summit,) H. P.	21.47	545.4	.....	.....	24.8	— 4.0	.....	N	.....	.....	3	.....	9	.....	.....	.....	.....	Fair	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.77	578.3	.....	.....	29.8	— 1.2	.....	N	.....	.....	1	.....	9	.....	.....	0	0	Fair	Gen'l de Nansouty.
Saint Maur, (near Paris)	30.32	770.1	30.48	774.3	45.9	7.7	77	NW	.....	.....	1	.....	7	.....	N	0.063	1.6	.....	E. Renou.
Toulouse, Observatory	29.85	758.1	30.58	776.8	42.3	5.7	94	WNW	.....	.....	4	.....	10	.....	.....	0.022	0.55	.....	The Staff.
Tours	30.31	769.8	30.50	774 8	48.2	9.0	73	NNE	.....	.....	1	.....	5	.....	N	0.031	0.8	.....	C. Marquet.
Versailles, (near Paris)	.....	.....	30.48	774.2	45.3	7.4	77	N	.....	.....	2	.....	9	.....	.....	0.022	0.55	Almost cov'd	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.32	770.2	30.35	770.8	37.4	3.0	81	NW	4.0	1.8	.....	.....	8k	.....	W	0.626	15.9	Cloudy	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published. At Mirecourt and Rochefort the cloud directions are apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:55, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10	Clouds. Amount. Up'er 0-10	Clouds. Amount. Low'r 0-10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg																			Prof. Dr. Hoh.
Berlin	30.04	763.0	30.22	767.6	38.3	3.5	60	S			1		5			0	0		Prof. Arndt.
Breslau	29.63	752.6	30.17	766.2	29.5	— 1.4	78	ENE			2		8			Inap.	Inap.		Royal University Obs'y.
Carlsruhe	29.78	756.3	30.22	767.5	41.4	5.2	91	SW			1		10			0.193	4.9		Albert Senz.
Cassel	29.57	751.1	30.18	766.6	41.9	5.5	94	NW			7		10	NW		0.384	9.76		Dr. H. Möhl.
Crefeld	30.09	764.3	30.25	768.4	46.0	7.8	75	N			6		8			0.16	4.		Director Lose.
Emden	30.25	768.3	30.28	769.2	43.0	6.1	81	N			7		10			0.118	3.0		Prof. Prestel.
Frankfort on the Main	29.82	757.4	30.20	767.0	43.9	6.6		NNW			4		6			0.043	1.1		Physical Society.
Friedrichshafen	29.05?	737.9?	30.25	768.3	38.1	3.4	87	WNW			9		10			0.185	4.7	Raining	M. Wilhelm.
Hamburg	30.11	764.7	30.18	766.6	37.2	2.9	94	SE			2		10			0.374	9.5	Foggy	Captain F. Hegemann.
Kiel	30.21	767.2	30.22	767.6	35.4	1.9	88	E			1		8			0	0		Prof. G. Karsten.
Königsberg, (Prussia)	30.22	767.6	30.30	769.6	28.8	— 1.8	90	SE								0.016	0.41	Snowing	Prof. E. Luther.
Köslin			30.18	766.5	32.2	0.1		Calm			0		8			0	0		H. Müller.
Leipsic, Observatory	29.74	755.4	30.18	766.5	36.3	2.4	89	NNE			2		10	NE		0.024	0.6	Sleeting	Prof. Bruhns.
Memel, Naval School	30.28	769.0	30.32	770.2	25.7	— 3.5	89	ESE			3		1cs						Reinbrech von Skalweit.
Neufahrwasser	30.23	767.8	30.24	768.2	31.1	— 0.5	92	SE			1		10			0.004	0.1		A. Lothes.
Posen	29.92	760.0	30.23	767.8	29.3	— 1.5	97	NW			5					0	0	Covered	Dr. Magener.
Strassburg Obs., (in Alsace	29.71	754.7	30.28	769.1	44.1	6.7	72	NW			3		10	N		0.193	4.9		Dr. Schur.
Stuttgart	29.19	741.4	30.16	766.1	41.0	5.0	80	W			1		10			0.339	8.6	Raining	Prof. Schoder.
Treves, (Trier)	29.66	753.4	30.19	766.8	43.7	6.5	71	NW			4		3			0	0	Foggy	Prof. Flesch.
Weissenburg, (Bavaria)	28.58	725.8	30.15	765.8	34.2	1.2	94	WSW	1	0.5			10			0.343	8.7	Snowing	Dr. Von Bebber.
Wustrow, Naval School	30.24	768.1	30.29	769.4	33.8	1.0	86	E			3		7			0	0	Cloudy	E. F. Schütz.
German Naval Series.																			

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet: Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4. Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines, Königsberg, Posen and Wustrow in cubic zolls. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.40	746.7	29.80	756.8	54.1	12.3		NE			1							Cloudy	Dr. J. F. J. Schmidt.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and wind-force; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	30.01	762.1	30.06	763.5	67.8	19.9	59	NW	14.0?	6.3?			1			0.02	0.5	D. clouds	
Deesa	29.55	750.5	30.04	762.9	73.7	23.2	71	Calm					0			0.09	2.3	Blue sky	
Bombay	29.89	759.2	29.93	760.2	81.3	27.4	71	NNW	16.0	7.2			3	S		0	0	D. clouds	
Poona	27.92	709.2	29.92	760.0	80.7	27.1	58	SE					10		SE	0	0	D. clouds	
Lahore	29.26	743.2	30.04	763.1	55.6	13.1	91	Calm	4.0	1.8			4			0.83	21.1	Misty	
Belgaum	27.42	696.3	29.97	761.2	75.0	23.9	65	Calm					8	SW		0	0	D. clouds	
Bangalore																			
Roorkee	29.15	740.4	30.10	764.6	56.8	13.8	94	SE	2.3	1.0			8			0.48	12.2		
Agra	29.49	749.1	30.09	764.2	59.3	15.2	94	NE					10			0	0		
Trichinopoly																			
Nagpur	28.97	735.9	30.03	762.8	74.7	23.7	62	Calm	1.8	0.8			9	NE		0	0	D. clouds	
Madras																			
Lucknow	29.68	753.8	30.07	763.8	58.4	14.7	79	Calm	3.2	1.4			5	SE		0.05	1.3	D. clouds	
Allahabad	29.74	755.3	30.06	763.5	66.8	19.3	64	Calm	0.6	0.3			8		W	0	0	D. clouds	
Patna	29.91	759.7	30.10	764.5	64.4	18.0	63	Calm	0.8	0.4			10	E	E	0	0	Overcast	
Hazaribagh	27.99	711.0	30.07	763.7	65.3	18.5	38	WNW	4.7	2.1			10			0	0		
Cuttack	29.95	760.8	30.04	762.9	71.0	21.7	59	N	0.3	0.1						0	0	Blue sky	
Calcutta (Alipore)	30.01	762.3	30.04	762.9	63.3	17.4	76	NW	1.0	0.4			1	W		0	0	Foggy	
Goalpara	29.59	751.6	29.99	761.8	65.7	18.7	73	SSW	1.8	0.8			5	W		0	0	D. clouds	
Chittagong	29.90	759.6	30.00	762.0	69.6	20.9	70	NW	2.5	1.1			0			0	0	Blue sky	
Sibsagar	29.69	754.2	30.05	763.2	59.9	15.5	94	ENE	0.7	0.3			6			0	0	D. clouds	
Rangoon																			
Jubbulpore	28.65	727.8	30.03	762.8	77.5	25.3	54	SE	2.4	1.1			3	SE		0	0	D. clouds	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 1—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	22.10	561.2	30.11	764.9	22.3	— 5.4	70	E	.....	.....	4	.....	10	.....	.....	0	0	.....	Ab. Dom. Morgini.
Stelvio	22.04	559.8	30.07	763.7	20.1	— 6.6	.....	ESE	.....	.....	1	.....	10	.....	.....	0	0	.....	Signora Ernesta Manfredi.
Udine	29.63	752.5	30.06	763.4	41.5	5.3	44	NE	0.7	0.3	.....	.....	4	.....	.....	0	0	.....	Prof. Giovanni Clodig.
Padua	29.95	760.6	30.06	763.5	37.8	3.2	68	WNW	3.8	1.7	.....	.....	8	W	.....	0	0	.....	Prof. Dott. Lorenzoni.
Vicenza	29.87	758.7	30.07	763.8	39.4	4.1	63	NW	0.7	0.3	.....	.....	3	W	.....	0	0	.....	Conte Alm. Da Schio.
Verona	29.85	758.2	30.08	764.1	38.7	3.7	75	SW	4.9	2.2	.....	.....	0	.....	.....	0	0	.....	Dott. B. Bertoncelli.
Bergamo	28.71	729.2	30.10	764.4	39.2	4.0	61	SE	.....	.....	2	.....	0	.....	.....	0	0	.....	Prof. Trionfini Carlo.
Domodossola	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Giuseppe Calza.
Milan	29.56	750.7	30.10	764.6	37.4	3.0	.....	WNW	.....	.....	2	.....	3	SSW	.....	0.035	0.9	.....	Ab. Gio. Capelli.
Pavia	29.73	755.2	30.10	764.5	34.3	1.3	98	N	.....	.....	1	.....	10	.....	.....	0	0	.....	Prof. Gio. Cantoni.
Moncalieri	29.18	741.2	30.13	765.4	36.0	2.2	66	ESE	1.3	0.6	.....	.....	3	.....	.....	0	0	.....	Prof. P. F. Denza.
Mondovi	28.13	714.6	30.13	765.4	37.4	3.0	66	NW	.....	.....	2	.....	1	N	.....	0	0	.....	Prof. D. C. Bruno.
Porto Maurizio	29.85	758.1	30.07	763.8	52.7	11.5	54	E	.....	.....	2	.....	1	.....	.....	0	0	.....	Prof. L. Vassallo.
Genoa	29.80	759.2	30.07	763.7	52.2	11.2	48	E	2.5	1.1	.....	.....	10	S	.....	0	0	.....	Prof. G. M. Garibaldi.
Piacenza	29.82	757.4	30.09	764.2	34.0	1.1	92	E	0	0	.....	.....	1	.....	.....	0	0	.....	Dott. G. Manzi.
Parma	29.75	755.7	30.08	764.1	37.8	3.2	74	NNE	.....	.....	4	.....	2	.....	.....	0	0	.....	Prof. P. Pigorini.
Florence	29.85	758.1	30.11	764.9	41.0	5.0	52	NW	.....	.....	2	.....	9	.....	.....	0	0	.....	Cav. F. Meucci.
Leghorn	29.99	761.8	30.08	764.0	45.1	7.3	63	N	3.1	1.4	.....	.....	4	.....	.....	0	0	.....	Prof. P. Monte.
Siena	28.84	732.5	30.09	764.3	47.7	8.7	49	NW	0.7	0.3	.....	.....	3	NE	.....	0	0	.....	Prof. L. Toscani.
Urbino	28.45	722.6	30.15	765.9	39.9	4.4	68	SW	.....	.....	2	.....	0	.....	.....	0	0	.....	Prof. P. Serpieri.
Pesaro	30.03	762.8	30.08	764.1	44.4	6.9	70	SW	0	0	.....	.....	2	.....	.....	0	0	.....	Prof. Luigi Guidi.
Ancona	29.95	760.7	30.06	763.5	46.4	8.0	70	Calm	.....	.....	0	.....	1	.....	.....	0	0	.....	Prof. F. DeBosis.
Grosseto	29.98	761.6	30.10	764.5	49.6	9.8	57	ESE	.....	.....	2	.....	4	NE	.....	0	0	.....	Avv. P. Ponticelli.
Rome	29.90	759.5	30.08	764.1	50.9	10.5	60	N	5.6	2.5	.....	.....	0	.....	.....	0	0	.....	Prof. P. A. Secchi.
Naples, O. U	29.83	757.6	30.03	762.8	53.6	12.0	35	NE	.....	.....	2	.....	7	NW	.....	0	0	.....	Prof. L. Palmieri.
Lecce	29.73	755.1	29.99	761.7	47.8	8.8	82	WNW	12.5	5.6	.....	.....	10	NNW	.....	0.165	4.2	.....	Prof. C. De Giorgi.
Cosenza	29.06	738.2	29.97	761.3	48.6	9.2	69	SE	0	0	.....	.....	2	.....	.....	0	0	.....	Prof. F. D. Conti.
Cagliari	29.87	758.8	30.07	763.8	54.0	12.2	85	NW	.....	.....	4	.....	0	.....	.....	0	0	.....	Prof. A. Pacinotti.
Riposto, (Sicily)	29.80	759.1	29.93	760.3	55.9	13.3	59	Calm	.....	.....	0	.....	8	.....	.....	0	0	.....	Prof. F. Cafiero.
Palermo	29.71	754.6	29.97	761.2	53.4	11.9	50	NE	4.9	2.2	.....	.....	9	.....	.....	0.150	3.8	.....	Prof. G. Cacciatore.
Caltanissetta	27.95	709.9	29.93	760.1	46.2	7.9	55	NE	.....	.....	6	.....	4	W	.....	0	0	.....	Prof. A. Pagani.
Syracuse	29.84	757.9	29.91	759.8	57.6	14.2	80	NE	.....	.....	2	.....	10	E	.....	0.445	11.3	.....	Prof. V. Giuliano.
SUB-SERIES.																			
Naples, S. R.	29.49	749.1	30.05	763.2	49.6	9.8	32	NE	4.0	2.2	.....	.....	4	.....	.....	0	0	.....	Prof. F. Brioschi.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,548.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Siena, 348.5 m., or 1,143.3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Tokei (Yeddo)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	The Observatory.
Tokei (Yeddo) University	29.89	759.1	29.99	761.8	41.5	5.3	87	NE	2	0.9	.....	.....	10s	.....	.....	0.07	1.8	Cloudy	Prof. P. V. Veeder.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Aguascalientes	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	I. N. Marin, M. D.
Córdoba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	C. Peña, M. D.
Cuernavaca	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	L. Castillo, A. E.
Guadalajara	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. L. Perez.
Guanajuato	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. V. Fernandez.
Leon	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. M. Leal.
Mexico	23.10	586.7	30.22	767.4	46.4	8.0	71	Calm	0	0	.....	0	0	.....	.....	0	0	Very fine	Central Observatory.
Orizaba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	N. N.
Orizaba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	I. Orozco, M. D.
Pabellon, (Aguascalts)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. V. de Leon, M. E.
Puebla	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. B. Gonzalez.
Toluca	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. C. Velazquez.
Tlacotalpam	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. F. R. Bayly.
San Luis Potosi	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	G. Barroeta, M. D.
Vera-Cruz	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. J. Rossell.
Zacatecas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. A. Bonilla, M. E.
Puebla, (Catholic Institute)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	P. Spina. [M. M. D. D.
Morelia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Tena, F. L. P Áramo

NOTE.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,290 m., or 7,512.9 ft.; Orizaba, 1,223 m., or 4,012.1 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosí, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	30.44	773.1	30.44	773.1	47.3	8.5	.....	NNW	.....	.....	4	.....	.....	.....	.....	0.067	1.7	.....	
Groningen	30.19	766.8	30.24	768.2	44.1	6.7	.....	N	.....	.....	5	.....	.....	.....	.....	0.039	1.0	.....	
Helder	30.32	770.2	30.32	770.2	46.0	7.8	.....	NW	.....	.....	5	.....	.....	.....	.....	0.020	0.5	.....	
Hellevoetsluis	.....	.....	30.39	771.9	47.1	8.4	81	NNW	.....	.....	3	.....	.....	.....	.....	.....	.....	.....	
Utrecht	30.30	769.5	30.34	770.7	46.4	8.0	77	NNW	.....	.....	5	.....	5	.....	.....	0.051	1.3	Cloudy	H. v d Brink.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temi-erature of the Air. Fahrenheit.	Temi-erature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	30.22	767.5	30.27	768.9	35.6	2.0	100	SSE	6.0	2.7	.....	.....	1	.....	.....	0	0	.....	
Brönö	30.02	762.5	30.06	763.5	37.4	3.0	83	SSW	9	4	.....	.....	8	.....	.....	0.122	3.1	.....	
Christiania	30.18	766.5	30.34	770.5	39.0	3.9	91	ESE	0	0	.....	.....	10	.....	.....	.....	.....	Light snow.	
Tromsö	29.86	758.4	29.90	759.5	33.1	0.6	64	SSE	20	9	.....	.....	8	.....	.....	0	0	.....	

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	30.41	772.3	30.60	777.2	57.7	14.3	72	SE	4.9	2.2	.....	.....	5	.....	.....	0	0	.....	Dr. J. A. Sampaio.
Campo Major	29.41	746.9	30.45	773.4	52.5	11.4	46	ENE	6.9	3.1	.....	.....	0	.....	.....	0	0	.....	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.23	767.8	30.30	769.6	65.1	18.4	61	E	9.8	4.4	.....	.....	1	.....	.....	0.350	8.9	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	30.08	763.9	30.44	773.2	50.9	10.5	55	NE	18.6	8.3	.....	.....	0	.....	.....	0	0	.....	The Staff.
Ponta Delgada, (Azores)	30.53	775.4	30.60	777.2	60.8	16.0	59	ENE	1.8	0.8	.....	.....	3	.....	.....	0	0	.....	

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

Naval Series. Vessels.	Sea or swell. Height scale 0–9	Sea or swell. Direction from—		
S. Bartholomew Dias	.....	.....	.....	R, A. T. Pinha, Com'd't.
S. S. India	.....	.....	.....	A. D. Pedroso, Com'd't.
S. S. Mindello	.....	.....	.....	J. F. R. R. Bastos, Com'd't.
S. S. Sado	.....	.....	.....	A. N. P. Sampaio, Com'd't.
S. S. Sá da Bandeira	.....	.....	.....	F. Texeira da Silva, Com'd't.
S. S. Tejo	.....	.....	.....	F. J. Forreina, dos Amas, Com'd't

Note.—The originals, except for S. S. Tejo, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.76	755.8	30.21	767.2	27.3	— 2.6	94	E	2	1	.....	.....	10	.....	.....	.....	.....	.....	Astronomical Obs.
Wilna	29.93	760.3	30.38	771.7	27.1	— 2.7	86	SSE	2	1	.....	.....	10	.....	.....	.....	.....	Heavy clouds	Astronomical Obs.
Dorpat	30.21	767.4	30.47	774.0	24.8	— 4.0	94	ESE	4	2	.....	.....	10n	.....	.....	.....	.....	Snowing	Prof. Dr. Weihrauch.
St. Petersburg	30.54	775.7	30.56	776.1	8.4	—13.1	93	SE	11	5	.....	.....	10s	.....	.....	.....	.....	.....	Central Physical Obs.
Kuopio	30.05	763.3	30.39	772.0	24.8	— 4.0	100	S	22	10	.....	.....	10	.....	.....	.....	.....	Snowing	Ch. Forsten.
Kieff	29.58	751.2	30.26	768.5	23.7	— 4.6	95	ESE	7	3	.....	.....	10ks;n	.....	.....	.....	.....	.....	Physical Cabinet.
Nikolaiev	30.07	763.7	30.14	765.5	32.4	0.2	92	ENE	18	8	.....	.....	10n	.....	.....	.....	.....	.....	Kurdakof.
Kertch	30.06	763.4	30.08	763.9	40.1	4.5	82	NE	11	5	.....	.....	7	.....	.....	.....	.....	.....	Lagorio.
Moscow	30.17	766.3	30.79	782.0	8.6	—13.0	84	SSE	9	4	.....	.....	10s	.....	.....	.....	.....	.....	Meteorological Obs.
Lugan	30.23	767.7	30.45	773.4	19.2	— 7.1	75	E	34	15	.....	.....	10	.....	.....	Blank	Blank	.....	Meteorological Obs.
Archangel	30.61	777.4	30.63	777.9	17.2	— 8.2	94	SSE	22	10	.....	.....	10	.....	.....	.....	.....	.....	Ogorodnikof.
Tiflis	29.07	738.4	30.60	777.1	27.9	— 2.3	87	Calm	0	0	.....	.....	10	.....	.....	.....	.....	.....	Physical Observatory.
Astrakhan	30.95	786.1	30.87	784.0	12.2	—11.0	65	ESE	27	12	.....	.....	0	.....	.....	.....	.....	.....	Sebastianof.
Kasan	30.93	785.6	31.24	793.5	4.1	—15.5	63	SSE	2	1	.....	.....	4	.....	.....	.....	.....	.....	Physical Cabinet.
Orenburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Tschernischef.
Ekaterinburg	30.25	768.3	31.33	795.7	7.5	—13.6	51	W	2	1	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Nukuss	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Kasaly	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Bobrof.
Tashkend	29.06	738.0	31.02	787.8	2.5	—16.4	90	NNW	2	1	.....	.....	0	.....	.....	.....	.....	.....	Michelson.
Barnaul	30.78	781.9	31.45	798.8	—40.7	—40.4	75	Calm	0	0	.....	.....	10	.....	.....	.....	.....	Light clouds	Meteorological Obs.
Yeniseisk	30.93	785.7	31.32	795.6	—18.8	—28.2	82	WSW	7	3	.....	.....	10	.....	.....	.....	.....	.....	Marks.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Usolzef.
Oorga	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Mossin.
Krotkowo*	30.71	779.9	31.23	793.3	1.6	—16.9	37	E	7	3	.....	.....	1s	.....	.....	.....	.....	.....	Cand. Fatjanow.
Peking, (China)	30.25	768.4	30.39	772.0	24.4	— 4.2	61	NW	22	10	.....	.....	5ks	.....	.....	.....	.....	.....	Physical Observatory
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Vladivostock	30.24	768.2	30.28	769.2	12.9	—10.6	86	Calm	0	0	.....	.....	6n	.....	.....	.....	.....	Lunar corona	
Nikolaievsk, on the Amoor	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall; for Krotkowo, the barometer reduced to freezing but not to sea level. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft. * N. 53° 47′, E. 48° 34′.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Rave, Director.
Bilbao, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Manuel de Naveran
Burgos, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Domingo Martin y Perez.
Madrid, Royal Observatory	28.16	715.2	30.48	774.3	43.9	6.6	74	NE	0.8	0.34	.....	0	0	.....	.....	0	0	Clear	The Staff.
Murcia, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Olayo Diaz, Director.
Santiago, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I	30.01	762.3	30.08	764.0	69.0	20.6	90	SE	1.6	0.7	.....	0	1k;ks	.....	.....	0	0	Clear	Benito Vines, S. J.
San Fernando, Naval Obs'y	30.25	768.4	30.35	770.9	60.3	15.7	55	ENE	15.9	7.1	.....	0	0	.....	.....	0	0	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de PortoRico, W. I.	.....	.....	29.85	758.2	79.5	26.4	84	NE	14.6	6.53	.....	5cs	4kn	NE	NE	0.138	3.50	D. clouds	Leonardo de Tejeda, Chief of Engineers.

Note.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the cöoperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Low'r 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	30.27	768.8	30.31	769.8	30.9	— 0.6	.....	S	.....	.....	4	.....	10	.....	.....	0	0	.....	
Umea	30.21	767.3	30.26	768.6	32.0	0.0	81	Calm	.....	.....	0	.....	10	.....	.....	0.043	1.1	.....	
Hernosand	30.23	767.8	30.28	769.1	29.3	— 1.5	80	SW	.....	.....	2	.....	9	.....	.....	0	0	.....	
Stockholm	30.10	764.4	30.27	768.9	27.3	— 2.6	87	NNW	.....	.....	2	.....	10	.....	.....	0.067	1.7	.....	
Wisby	30.17	766.2	30.23	767.7	32.7	0.4	96	SSE	.....	.....	4	.....	5	.....	.....	0.016	0.4	.....	
Sub-Series.																			
Upsala	30.22	767.5	30.29	769.4	25.7	— 3.5	100	NNW	0	0	.....	.....	9	.....	.....	0.001	0.02	.....	Dr. Hildebrandsson.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.89	733.7	30.35	771.0	39.9	4.4	81	NW	.....	.....	1	.....	8	.....	.....	0.008	0.2	Cloudy.....	The Observatory.
Zurich	28.60	726.5	30.30	769.7	35.6	2.0	91	W	.....	.....	2	.....	10	.....	.....	0.157	4.0	Covered.....	The Observatory.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—For Geneva the corresponding departures from the normal values are: Barometer, +6.2 mm; Thermometer, +2.2 cent.; Relative Humidity, +1 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	29.84	758.0	51.6	10.9	74	ENE	12	5.5	.....	.....	10	.....	NE	0	0	.....	The Observatory.
Fao, (Persian Gulf)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Salonica	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	B. Stéfanidès.
Valona	.....	.....	29.84	757.8	51.3	10.7	.....	NW	.....	.....	2	.....	5	.....	.....	0.28	7.	Cloudy.....	A. Bertrand.
Varna	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Imperial Observatory.
Sub-Series.																			
Beirut,(Syria,) Lee Obs'y	29.73	755.1	29.84	758.0	66.6	19.2	50	NW	.....	.....	1	.....	2ck	.....	.....	0	0	D. clouds.....	Prof. C. V. A. Van Dyck

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	30.40	772.1	30.47	773.9	13.6	—10.2	76	NW	2.5	1.1	.....	0	.....	.....	.....	.....	.....	.....	Hon. J. Ferguson.
Brockville, Ontario	30.31	769.9	30.05	778.5	15	— 9.4	.....	NE	3	1.3	.....	2c	0	Calm	.....	0	0	Fair.....	W. R. Rigg.
*Chatham, N. B	.....	.....	30.43	772.9	12	—11.1	84	NW	11	4.9	.....	0	0	.....	.....	0.04	1.0	Clear.....	G. A. Blair.
Charlottetown, P. E. Island.	30.26	768.6	30.30	769.6	26	— 3.3	67	N	15	6.7	.....	.....	8ks	.....	N	0.075	1.91	Cloudy.....	H. J. Cundall, C. E.
Cornwall, Ontario	30.44	773.2	30.06	778.7	18.0	—10.6	92	NE	.....	.....	1	0	5s	.....	.....	0	0	Fair.....	James Smith, M. A.
Dalhousie, N. B	30.50	774.7	30.53	775.4	12	—11.1	96	W	.....	.....	1	.....	.....	.....	.....	0.15	3.8	Clear.....	H. A. Johnson.
Esquimault, B. C.	29.98	761.5	30.02	762.5	45.3	7.4	100	Calm	.....	.....	.....	9ck	0	.....	.....	0	0	Cloudy.....	W. H. Bevis.
*Father Point, Quebec	30.58	776.7	30.60	777.2	11	—11.7	86	NW	10	4.5	.....	2cs	0	Calm	.....	0.10	2.5	Clear.....	J. McWilliams.
Fredericton, N. B	30.48	774.2	30.55	776.0	9.1	—12.7	81	W	10.0	4.5	.....	0	0	.....	.....	0	0	Fine.....	Prof. Harrison.
*Fort Garry, Manitoba	29.03	737.3	29.88	758.9	32	0.0	95	SE	14	6.3	.....	.....	10n	.....	Calm	0	0	Threatening	James Stewart.
Goderich, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	H. J. Strang, M. A.
Granton, Ontario	29.31	744.5	30.49	774.4	25.2	— 3.8	98	E	.....	.....	2	0	0	.....	.....	0	0	Clear.....	James Grant.
*Halifax, N. S	30.14	765.5	30.28	769.1	20	— 6.7	82	NW	24	10.7	.....	0	2ks	.....	NW	0.014	0.36	Fair.....	F. Allison, M. A.
Hamilton, Ontario	30.17	766.3	30.57	776.5	30.7	— 0.7	87	SW	.....	.....	1	.....	.....	.....	.....	0	0	Clear.....	Geo. Dickson, M. A
Heart's Content, N. F	29.56	750.8	30.58	751.3	35	1.7	80	SW	.....	.....	2	.....	10	.....	.....	0	0	Overcast.....	E. Weedon.
*Kingston, Ontario	30.36	771.1	30.73	780.5	16	— 8.9	90	NE	3	1.3	.....	2k	0	NE	.....	0	0	Clear.....	S. Woods, M. A.
Little Glace Bay, N. S	30.06	763.5	30.10	764.5	29.0	— 1.7	.....	N	12	5.4	.....	.....	10n	.....	.....	0.12	3.0	Snow squalls	C. H. Rigby.
*Montreal, Quebec	30.44	773.2	30.66	778.7	14	—10.0	82	N	4	1.8	.....	0	2s	.....	.....	0	0	Clear.....	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.83	757.7	30.59	777.0	15	— 9.4	82	E	8	3.6	.....	0	0	.....	.....	0	0	Clear.....	Rev. R. Mosley.
Peterboro, Ontario	29.78	756.4	29.62†	752.3†	12.7	—10.7	51	E	.....	.....	1	0	0	.....	.....	0	0	Clear.....	J. F. Jeffers, B. A.
Port Dover, Ontario	29.78	756.4	30.02	775.2	26	— 3.3	88	NE	7	3.1	.....	5ck	0	NE	.....	0	0	Fair.....	H. Morgan.
Port Hastings, N. S	30.14	765.5	30.19	766.8	26.9	— 2.8	.....	NW	8	3.6	.....	.....	.....	.....	.....	0	0	Fine.....	Peter Grant.
Port Stanley, Ontario	29.79	756.7	30.48	774.2	28	— 2.2	79	E	7	3.1	.....	2ck	0	Calm	.....	0	0	Clear.....	M. Payne.
*Quebec, Quebec	30.26	768.6	30.61	777.5	10	—12.2	68	Calm	0	0	.....	0	0	.....	.....	0.01	0.3	Clear.....	Capt. Ashe, R. N
*Rockliffe, Ontario	30.15	765.8	30.67	779.0	6	—14.4	82	S	3	1.3	.....	0	0	.....	.....	0	0	Clear.....	W. H. McIntyre.
St. John, N. B	30.34	770.6	30.53	775.4	12	—11.1	90	NW	2	0.9	.....	0	0	.....	.....	0	0	Clear.....	G. Murdock, C. E.
*Saugeen, Ontario	29.74	755.4	30.49	774.4	23	— 5.0	93	Calm	0	0	.....	2cs	0	.....	.....	0	0	Clear.....	K. Stewart.
Stayner, Ontario	29.71	754.6	30.56	776.2	20	— 6.7	94	SE	8	3.6	.....	2c	0	W	.....	0	0	Fair.....	R. J. Cole.
Stratford, Ontario	29.18	741.2	30.55	776.0	24.1	— 4.4	93	SE	11.0	4.9	.....	1cs;c	2s	NW	.....	0	0	Fine.....	C. J. MacGregor, M. A.
*Sydney, C. B	30.07	763.8	30.11	764.8	25	— 3.9	69	NW	15	6.7	.....	.....	8ks	.....	N	0.08	2.0	Cloudy.....	T. C. Hill.
Windsor, N. S	30.19	766.8	30.60	777.2	27	— 2.8	71	E	9	4.0	.....	.....	10n	.....	E	0	0	Cloudy.....	Magnetic Observatory.
Woodstock, Ontario	30.35	770.9	30.45	773.4	20.0	— 6.7	92	N	16	7.2	.....	0	.....	.....	.....	0	0	Clear.....	Prof. John E. Oram.
Sub-Series.																			J. Montgomery.
St. Johns, Newfoundland	.....	.....	.....	.....	37.0	2.8	90	S	.....	.....	.....	.....	10n	.....	.....	0.23	5.8	Raining.....	John Delany.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

† Evidently 1 inch or 25.4 mm. too low.

1877.—December 18.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'per 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	30.33	770.4	30.58	776.7	20	— 6.7	70	NW	16	7.2	.....	0	0	.....	.....	0	0	Clear	
Alpena, Michigan	29.74	755.4	30.42	772.7	33	0.6	79	SE	14	6.3	.....	2cs	0	Calm	.....	0	0	Fair	
Atlantic City, New Jersey	30.42	772.7	30.44	773.2	41	5.0	83	NE	16	7.2	.....	2ck	0	Calm	.....	0	0	Clear	
Augusta, Georgia	30.15	765.8	30.35	770.9	43	6.1	87	Calm	0	0	.....	0	Sm'e	.....	Calm	0	0	Smoky	
Baltimore, Maryland	30.42	772.7	30.47	773.9	42	5.6	58	N	4	1.8	.....	2c	Sm'e	NW	Calm	Inap.	Inap.	Fair	
Barnegat, New Jersey	30.43	772.9	30.45	773.4	40	4.4	73	NE	28	12.5	.....	2cs	2s	NW	NE	0	0	Fair	
Bismarck, Dakota	28.03	711.9	29.74	755.4	30	— 1.1	69	Calm	0	0	.....	.....	10s	.....	SW	0	0	Cloudy	
Boise City, Idaho	27.15	689.6	30.03	762.7	30	— 1.1	84	Calm	0	0	.....	2k	5s	Calm	Calm	0	0	Fair	
Boston, Massachusetts	30.38	771.5	30.55	776.0	25	—3.9	60	N	13	5.8	.....	1k	0	.....	.....	0	0	Clear	
Brackettville, Texas	28.84	732.5	29.85	758.2	67	19.4	79	SE	8	3.6	.....	.....	10s	.....	SE	0.13	3.3	Cloudy	
Breckenridge, Minnesota	28.87	733.3	29.89	759.2	35	1.7	100	SE	9	4.0	.....	.....	10s	.....	Calm	0.05	1.3	Cloudy	
Brownsville, Texas	30.01	762.2	30.08	764.0	63	17.2	94	Calm	0	0	.....	5c	0	W	.....	0	0	Fair	
Buffalo, New York	29.77	756.1	30.53	775.4	24	— 4.4	74	NE	12	5.4	.....	1c	1s	Calm	E	0	0	Fair	
Burkes, Arizona	.....	.....	.....	.....	51	10.6	80	N	.....	.....	.....	0	10ks	.....	Calm	0	0	Cloudy	
Burlington, Vermont	30.36	771.1	30.65	778.5	18	— 7.8	70	N	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Cairo, Illinois	29.83	757.7	30.22	767.6	57	13.9	81	S	6	2.7	.....	8ck	0	W	.....	0	0	Fair	
Camp Grant, Arizona	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Camp Verde, Arizona	26.59	675.4	30.08	764.0	46	7.8	100	SE	.....	.....	.....	.....	10n	.....	SE	0.16	4.1	Heavy rain	
Campo, California	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Cape Hatteras, N. Carolina	30.27	768.8	30.28	769.1	55	12.8	79	N	8	3.6	.....	5k	5s	N	N	0	0	Cloudy	
Cape Henry, Virginia	30.32	770.1	30.34	770.6	50	10.0	72	NE	34	15.2	.....	0	5s	.....	NE	0	0	Fair	
Cape Lookout, N. Carolina	30.27	768.8	30.29	769.4	56	13.3	93	W	6	2.7	.....	8ck	0	W	.....	0	0	Cloudy	
Cape May, New Jersey	30.40	772.1	30.43	772.9	38	3.3	71	N	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Charleston, South Carolina	30.27	768.8	30.33	770.4	52	11.1	86	NW	2	0.9	.....	0	Fog	.....	Calm	0	0	Clear	
Cheyenne, Wyoming	23.94	608.1	29.88	758.9	24	— 4.4	48	W	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Chicago, Illinois	29.42	747.3	30.12	765.0	44	6.7	84	SE	14	6.3	.....	.....	10s	.....	SE	0.54	13.7	Cloudy	
Cincinnati, Ohio	29.57	751.1	30.21	767.3	58	14.4	91	S	3	1.3	.....	.....	Fog	.....	Calm	0.02	0.5	Foggy	
Cleveland, Ohio	29.64	752.8	30.40	772.1	35	1.7	70	NE	7	3.1	.....	5cs	0	W	.....	0.06	1.5	Fair	
Concho, Texas	28.03	711.9	29.68	753.9	60	15.6	94	S	8	3.6	.....	8cs	0	S	.....	0.04	1.0	Cloudy	
Corsicana, Texas	29.66	753.4	30.12	765.0	60	15.6	88	S	5	2.2	.....	.....	10s	.....	S	0	0	Cloudy	
Davenport, Iowa	29.40	746.7	30.03	762.7	57	13.9	93	Calm	0	0	.....	.....	10s	.....	Calm	0.50	12.7	Cloudy	
Denison, Texas	29.30	744.2	30.09	764.3	60	15.6	94	SE	12	5.4	.....	.....	10s	.....	SE	0.37	9.4	Cloudy	
Denver, Colorado	24.69	627.1	29.91	759.7	31	— 0.6	68	S	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Detroit, Michigan	29.66	753.4	30.37	771.4	34	1.1	90	E	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Dodge City, Kansas	27.35	694.7	29.72	754.9	31	— 0.6	89	Calm	0	0	.....	Haze	5s	Calm	Calm	0	0	Fair	
Dubuque, Iowa	29.31	744.5	30.02	762.5	45	7.2	92	S	4	1.8	.....	.....	10n	.....	Calm	0.58	14.7	Light rain	
Duluth, Minnesota	29.38	746.2	30.07	763.8	38	3.3	81	E	10	4.5	.....	.....	10n	.....	E	0.01	0.3	Light rain	
Eagle Pass, Texas	29.21	741.9	29.93	760.2	66	18.9	89	SE	6	2.7	.....	.....	10s	.....	Calm	0	0	Cloudy	
Eastport, Maine	30.43	772.9	30.50	774.7	16	— 8.9	74	N	18	8.0	.....	0	0	.....	.....	0.01	0.3	Clear	
Erie, Pennsylvania	29.71	754.6	30.47	773.9	34	1.1	69	Calm	0	0	.....	2c	0	.....	.....	0	0	Fair	
Escanaba, Michigan	29.60	751.8	30.29	769.4	35	1.7	69	SE	11	4.9	.....	5ck	0	SE	.....	0	0	Fair	
Florence, Arizona	28.20	716.3	29.80	756.9	55	12.8	68	Calm	.....	.....	.....	0	5s	.....	E	0	0	Fair	
Fort Bayard, New Mexico	24.01	609.8	30.01	762.2	39	3.9	72	NE	6	2.7	.....	2c	5ks	Calm	Calm	0	0	Cloudy	
Fort Craig, New Mexico	25.47	646.9	.....	.....	33	0.6	89	NW	2	0.9	.....	0	5s	.....	NW	0	0	Fair	
Fort Gibson, Indian Ter	29.51	749.5	30.04	763.0	60	15.6	82	S	11	4.9	.....	.....	10s	.....	SW	1.12	28.4	Cloudy	
Fort Griffin, Texas	28.75	730.2	29.99	761.7	63	17.2	83	SE	5	2.2	.....	.....	10ks	.....	S	0.07	1.8	Cloudy	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	28.79	731.3	29.88	758.9	60	15.6	94	S	12	5.4	.....	.....	10s	.....	SW	2.47	62.7	Cloudy	
Galveston, Texas	30.09	764.3	30.14	765.5	61	16.1	100	E	7	3.1	.....	.....	Fog	.....	Calm	0.01	0.3	Foggy	
Grand Haven, Michigan	29.54	750.3	30.21	767.3	36	2.2	80	SE	20	8.9	.....	.....	10n	.....	Calm	Inap.	Inap.	Light rain	
Indianapolis, Indiana	29.40	746.7	30.17	766.3	59	15.0	94	S	4	1.8	.....	.....	10n	.....	S	0.12	3.0	Light rain	
Indianola, Texas	30.10	764.5	30.13	765.3	60	15.6	100	E	12	5.4	.....	.....	Fog	.....	E	0	0	Foggy	
Jacksboro, Texas	28.89	733.8	30.01	762.2	61	16.1	94	SE	12	5.4	.....	.....	10s	.....	SE	0.01	0.3	Cloudy	
Jacksonville, Florida	30.25	768.3	30.27	768.8	55	12.8	93	NE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Keokuk, Iowa	29.38	746.2	29.99	761.7	58	14.4	94	SW	9	4.0	.....	.....	10n	.....	Calm	0.52	13.2	Light rain	
Key West, Florida	30.08	764.0	30.12	765.0	67.0	19.4	94	NE	15	6.7	.....	.....	10n	.....	NE	0.05	1.3	Light rain	
Kittyhawk, North Carolina	30.28	769.1	30.30	769.6	54	12.2	93	NE	21	9.4	.....	10cs	0	NE	.....	0	0	Cloudy	
Knoxville, Tennessee	29.30	744.2	30.34	770.6	44	6.7	92	Calm	0	0	.....	.....	Fog	.....	Calm	Inap.	Inap.	Dense fog	
La Crosse, Wisconsin	29.26	743.2	30.00	762.0	45	7.2	100	Calm	0	0	.....	.....	10n	.....	Calm	0.07	1.8	Light rain	
La Mesilla, New Mexico	25.98	659.9	30.13	765.3	39	3.9	81	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Laredo, Texas	.....	.....	.....	.....	66	18.9	89	SE	6	2.7	.....	.....	10ks	.....	SE	0	0	Cloudy	
Leavenworth, Kansas	29.11	739.4	29.93	760.2	59	15.0	94	S	6	2.7	.....	0	8ks	.....	S	0.92	23.4	Cloudy	
Los Angeles, California	29.37	746.0	29.70	754.4	53	11.7	80	E	10	4.5	.....	.....	10n	.....	Calm	2.20	55.9	Light rain	
Louisville, Kentucky	29.66	753.4	30.21	767.3	59	15.0	88	S	4	1.8	.....	5ck	5s	SE	S	0.04	1.0	Cloudy	
Lynchburg, Virginia	29.67	753.6	30.36	771.1	51	10.6	79	Calm	0	0	.....	.....	10s	.....	NW	0	0	Cloudy	
Maricopa Wells, Arizona	.....	.....	.....	.....	45	7.2	61	S	.....	.....	.....	0	5s	.....	Calm	0	0	Fair	
Marquette, Michigan	29.49	749.0	30.22	767.6	34	1.1	69	SE	10	4.5	.....	.....	10s	.....	Calm	0	0	Cloudy	
Mason, Texas	28.40	721.3	30.13	765.3	62	16.7	88	SE	4	1.8	.....	.....	10s	.....	.....	0.04	1.0	Cloudy	
Memphis, Tennessee	29.91	759.7	30.23	767.8	54	12.2	79	S	4	1.8	.....	2c	2s	SW	SW	Inap.	Inap.	Fair	
Milwaukee, Wisconsin	29.47	748.5	30.18	766.6	39	3.9	100	SE	16	7.2	.....	.....	10n	.....	.....	0.36	9.1	Light rain	
Mobile, Alabama	30.22	767.6	30.26	768.6	52	11.1	93	S	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Montgomery, Alabama	30.07	763.8	30.32	770.1	46.5	8.1	88	NE	2	0.9	.....	0	Fg:sm'	.....	NE	0	0	Hazy	
Morgantown, West Virginia	29.28	743.7	30.36	771.1	48	8.9	85	W	4	1.8	.....	.....	10s	.....	W	0.17	4.3	Cloudy	
Mt. Washington, N. H.	23.89	606.8	30.25	768.3	6	—14.4	76	NE	36	16.1	.....	0	0	.....	.....	0	0	Clear	
Nashville, Tennessee	29.74	755.4	30.28	769.1	50	10.0	93	S	1	0.4	.....	5k	0	SW	.....	0.01	0.3	Fair	
New Haven, Connecticut	30.40	772.1	30.53	775.4	27	— 2.8	67	N	14	6.3	.....	0	0	.....	.....	0	0	Clear	
New London, Connecticut	30.46	773.7	30.52	775.2	30	— 1.1	68	NE	11	4.9	.....	0	0	.....	.....	0	0	Clear	
New Orleans, Louisiana	30.13	765.3	30.19	766.8	58	14.4	94	E	9	4.0	.....	.....	Fog	.....	E	0	0	Foggy	
Newport, Rhode Island	30.47	773.9	30.53	775.4	29	— 1.7	67	N	9	4.0	.....	0	0	.....	.....	0	0	Clear	
New York, New York	30.30	769.6	30.49	774.4	33	0.6	79	N	17	7.6	.....	0	Fog	.....	.....	0	0	Clear	
Norfolk, Virginia	30.31	769.9	30.37	771.4	49	9.4	85	NE	14	6.3	.....	8k	0	W	.....	0.01	0.3	Cloudy	
North Platte, Nebraska	27.00	685.8	29.67	753.6	26	— 3.3	88	W	6	2.7	.....	0	0	.....	.....	0.11	2.8	Clear	
Olympia, Washington Ter.	29.96	761.0	30.00	762.0	44	6.7	100	S	4	1.8	.....	.....	10s	.....	Calm	0.21	5.3	Cloudy	
Omaha, Nebraska	28.89	731.5	29.89	759.2	42	5.0	91	S	5	2.2	.....	.....	8s	.....	Calm	0.30	7.6	Cloudy	
Oswego, New York	30.26	768.6	30.61	777.5	26	— 3.3	71	E	6	2.7	.....	2cs	Haze	NE	.....	0	0	Fair	
Pembina, Dakota	29.09	738.9	29.94	760.5	33	0.6	90	S	10	4.5	.....	.....	10s	.....	S	0	0	Cloudy	
Philadelphia, Pennsylvania	30.43	772.9	30.48	774.2	35	1.7	70	E	17	7.6	.....	1c	Sm'e	Calm	Calm	0	0	Clear	
Phœnix, Arizona	.....	.....	.....	.....	52	11.1	86	SE	.....	.....	.....	0	8ks	.....	SE	0	0	Cloudy	
Pike's Peak, Colorado	17.71	449.8	29.92	760.0	12	—11.1	61	NW	20	8.9	.....	2c	0	Calm	.....	0	0	Clear	
Pioche, Nevada	23.91	607.3	29.68	753.9	37	2.8	81	W	4	1.8	.....	.....	10s	.....	Calm	0	0	Cloudy	
Pittsburg, Pennsylvania	29.54	750.3	30.39	771.9	37	2.8	80	E	5	2.2	.....	1k	0	SE	.....	0.20	5.1	Clear	
Port Huron, Michigan	29.70	754.4	30.41	772.4	29	— 1.7	78	E	7	3.1	.....	8cs	0	Calm	.....	0	0	Fair	
Portland, Maine	30.53	775.4	30.58	776.7	25	— 3.9	62	N	10	4.5	.....	0	Haze	.....	.....	0	0	Clear	
Portland, Oregon	30.03	762.7	30.13	765.3	40	4.4	100	NW	3	1.3	.....	.....	Fog	.....	Calm	0.08	2.0	Foggy	
Prescott, Arizona	24.58	624.3	29.94	760.5	44	6.7	68	SE	.....	.....	.....	0	2ks	.....	SE	0.09	2.3	Fair	
Punta Rassa, Florida	30.18	766.6	30.20	767.1	64	17.8	88	NE	4	1.8	.....	.....	10ks	.....	E	0	0	Cloudy	
Red Bluff, California	29.50	749.3	29.86	758.4	49	9.4	85	NE	8	3.6	.....	1k	0	Calm	.....	0.73	18.5	Clear	
Rochester, New York	29.91	759.7	30.58	776.7	24	— 4.4	87	SE	10	4.5	.....	.....	10s	.....	SE	0	0	Cloudy	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	BAROMETER. Corrected for instrum'tal error and temperature. Inches.	BAROMETER. Corrected for instrum'tal error and temperature. Millimeters	BAROMETER. Reduced to sea-level. Inches.	BAROMETER. Reduced to sea-level. Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Upper. From—	CLOUDS. Direction. Lower. From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	WEATHER.	OBSERVER.
Roseburg, Oregon	29.50	749.3	30.08	764.0	43	6.1	100	Calm	0	0	.....	.....	10s	.....	Calm	0.51	13.0	Cloudy	
Sacramento, California	29.76	755.9	29.85	758.2	46	7.8	92	N	6	2.7	.....	0	0	.....	.....	0.02	15.7	Clear	
St. Louis, Missouri	29.54	750.3	30.10	764.5	59	15.0	88	S	8	3.6	.....	.....	10s	.....	S	0.10	2.5	Cloudy	
St. Marks, Florida	30.26	768.6	30.27	768.8	61	10.6	96	NE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
St. Paul, Minnesota	29.06	738.1	29.90	759.4	39	3.9	81	Calm	0	0	.....	.....	10s	.....	Calm	0.04	1.0	Threatening	
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salt Lake City, Utah	25.59	650.0	29.92	760.0	35	1.7	70	SE	4	1.8	.....	0	0	.....	.....	0	0	Clear.	
San Antonio, Texas	29.37	746.0	29.94	760.5	65	18.3	89	SE	4	1.8	.....	.....	10s	.....	SE	0	0	Cloudy	
San Diego, California	29.71	754.6	29.78	756.4	55	12.8	87	S	12	5.4	.....	.....	10n	.....	S	0.98	24.9	Light rain	
Sandusky, Ohio	29.66	753.4	30.37	771.4	41	5.0	83	E	16	7.2	.....	1k	4s	Calm	Calm	0.13	3.3	Fair	
Sandy Hook, New Jersey	30.47	773.9	30.49	774.4	33	0.6	69	NE	26	11.6	.....	1c	Sm'e	NW	.....	0	0	Clear.	
San Francisco, California	29.80	756.9	29.87	758.7	51	10.6	86	NW	4	1.8	.....	0	2s	.....	NW	0.43	10.9	Fair	
Santa Fé, New Mexico	23.18	588.8	29.72	754.9	28.5	— 1.9	83	NE	8	3.6	.....	0	1s	.....	Calm	0	0	Clear.	
Savannah, Georgia	30.23	767.8	30.32	770.1	61	10.6	79	S	3	1.3	.....	Fog	Sm'e	.....	.....	0	0	Clear	
Shreveport, Louisiana	30.00	762.0	30.22	767.6	54	12.2	93	S	2	0.9	.....	.....	10s	.....	Calm	0	0	Cloudy	
Smithville, North Carolina	30.28	769.1	30.31	769.9	54	12.2	87	W	2	0.9	.....	.....	10s	.....	NW	0	0	Cloudy	
Springfield, Massachusetts	30.36	771.1	30.50	774.7	25	— 3.9	80	N	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Stockton, Texas	26.91	683.5	29.91	759.7	58	14.4	94	S	12	5.4	.....	0	5s	.....	S	0	0	Fair	
Thatcher's Island, Mass	30.40	772.1	30.45	773.4	39	3.9	63	NW	20	8.9	.....	1k	0	NW	.....	0	0	Clear	
Toledo, Ohio	29.64	752.8	30.34	770.6	40	4.4	73	E	8	3.6	.....	0	8s	.....	E	0.05	1.3	Cloudy	
Tucson, Arizona	27.45	697.2	30.00	762.0	51	10.6	39	Calm	.....	.....	.....	5k	0	SE	.....	0	0	Fair	
Tybee Island, Georgia	30.28	769.1	30.32	770.1	59	15.0	93	N	4	1.8	.....	0	Fog	.....	Calm	0	0	Clear.	
Umatilla, Oregon	29.72	754.9	.....	.....	36	2.2	80	Calm	0	0	.....	0	1s	.....	Calm	0.05	1.3	Clear	
Vicksburg, Mississippi	30.00	762.0	30.26	768.6	55	12.8	87	SE	4	1.8	.....	0	Fog	.....	Calm	0	0	Clear	
Virginia City, Montana	24.19	614.4	29.07	758.6	32	0.0	61	Calm	0	0	.....	.....	10s	.....	Calm	0	0	Cloudy	
Visalia, California	29.46	748.3	29.83	757.7	50	10.0	93	Calm	0	0	.....	.....	10s	.....	Calm	Inap.	Inap.	Cloudy	
Washington, D. C.	30.35	770.9	30.48	774.2	41	5.0	74	NE	6	2.7	.....	0	0	.....	.....	0.01	0.3	Clear.	
Wickenburg, Arizona	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.60	15.2	.....	
Wilmington, N. Carolina	30.21	767.3	30.29	769 4	54	12.2	86	SW	8	1.3	.....	10cs	0	NW	.....	0	0	Cloudy	
Winnemucca, Nevada	25.54	648.7	29.90	759.4	32	0.0	69	NE	6	2.7	.....	10k	0	Calm	.....	0	0	Cloudy	
Wood's Holl, Mass	30.47	773.9	30.52	775.2	35	1.7	52	NE	8	3.6	.....	5ks	Haze	NE	.....	0	0	Fair	
Yankton, Dakota	28.58	725.9	29.89	759.2	36	2.2	90	W	9	4.0	.....	.....	10s	.....	Calm	0.33	8.4	Cloudy	
Yuma, Arizona	29.69	754.1	29.86	758.4	51	10.6	93	N	2	0.9	.....	.....	10s	.....	NW	0.11	2.8	Cloudy	
SUB-SERIES.																			
York Factory, B. A.	29.59	751.6	29.65	753.1	19.0	— 7.2	92	W	13	5.8	.....	3cs	6s	W	W	0	0	Cloudy	J. Fortescue, W. Wood.
Havana, Cuba, W. I.	30.06	763.5	30.08	764.0	71	21.7	85	Calm	0	0	.....	2ck	0	NW	.....	0	0	Fair	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.07	763.8	30.08	764.0	78	25.6	90	Calm	0	0	.....	8c	5n	Calm	N	0	0	.....	James Gall.
Navassa, W. I.	29.86	758 4	29.94	760.5	79	26.1	.....	NE	20	8.9	.....	.....	.....	.....	.....	1.10	27.9	Cloudy	F. M Everett.
St. Thomas, W. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	G. O. Gellich.
Paramaribo, D. Guiana, S. A.	.....	.....	29.93	760.2	82	27.8	83	E	.....	.....	2	4c	5k	E	.....	0.090	2.29	Fair	C. J. Hering.
Batavia, Dutch Guiana, S. A	29.97	761.2	29.98	761.4	83.3	28.5	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0	Cloudy	Dr. H. Groot.
Medellin, Colombia, S. A.	25.16	638.8	.....	.....	69.0	20.6	85	Calm	.....	.....	0	.....	8n	.....	.....	0.41	10.4	Cloudy	Thomas Herran.
Honolulu, Oahu, H. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Daniel Smith.
Makawao, Maui, H. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo; for Batavia, the barometer reduced to freezing but not to sea-level. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573,4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Ploche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5,22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in; Ploche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation

STATIONS AND VESSELS.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard Mare Island, Cal.	29.85	758.2	50	10.0	49	9.4	93	WSW	2	0.9	.....	.....	9	.....	W	0.387	9.83	.....	.....	Cloudy.....	
Navy Yard, Pensacola, Fla.	30.35	770.9	.....	.....	57	13.9	94	NE	6	2.7	.....	.....	2	.....	.....	0	0	.....	.....	D. clouds.....	
Navy Yard, Portsmouth, N.H	30.55	776.0	62	16.7	21	— 6.1	71	N	.....	.....	1	.....	.....	.....	.....	0	0	.....	.....	Clear	
Naval Hospital, Yokohama, Japan.....	29.93	760.2	53	11.7	42	5.6	91	NE	.....	.....	4	.....	10n	.....	NE	0.23	5.8	.....	.....	Raining.....	
Alliance, Smyrna, Turkey.....	29.88	758.9	58	14.4	56	13.3	75	ENE	.....	.....	2	.....	10	.....	Calm	.....	.....	.....	.....	Cloudy.....	
Ashuelot. Shanghai, China.....	30.34	770.6	50	10.0	45	7.2	92	Calm	.....	.....	0	.....	5	.....	Calm	.....	.....	.....	.....	D. clouds.....	
Canonicus, New Orleans, La.....	30.19	766.8	46	7.8	57	13.9	100	ESE	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	Foggy	
Colorado, New York, N. Y.....	30.48	774.2	33	0.6	30	— 1.1	89	N	14	6.3	.....	.....	2	.....	N	0	0	.....	.....	Fair.....	
Despatch, Constantinople, Turkey.	29.94	760.5	64	17.8	54	12.2	74	ENE	.....	.....	3	.....	8	.....	NE	.....	.....	.....	.....	Cloudy.....	
Essex, St. Paul de Loanda, Lower Guinea.	29.75	755.6	83	28.3	85	29.4	91	W	.....	.....	2	.....	7	.....	.....	.....	.....	Smooth	.....	D. clouds.....	
Franklin, Norfolk, Va.....	30.45	773.4	61	16.1	50	10.0	79	NNE	10.5	4.7	.....	.....	.....	.....	NNE	0.50	12.7	.....	.....	Cloudy.....	
Guard, Lisbon, Portugal.....	30.40	772.1	58	14.4	53	11.7	67	NE	.....	.....	3	.....	0	.....	.....	.....	.....	.....	.....	Hazy.....	
Lackawana, Mare Island, Cal....	29.93	760.2	.....	.....	53	11.7	86	Calm	.....	.....	0	.....	8	.....	S	.....	.....	.....	.....	D. clouds.....	
Marion, Villefranche, France.....	30.04	763.0	60	15.6	58	14.4	53	S	.....	.....	1	.....	1	.....	.....	0	0	Smooth	S	D. clouds.....	
Michigan, Erie, Pa.....	29.94	760.5	61	16.1	31	— 0.6	48	E	.....	.....	1	.....	0	.....	.....	.....	.....	.....	.....	Fair.....	
Monocacy, Formosa Channel.....	29.96	761.0	69	20.6	66	18.9	89	NNE	.....	.....	3-4	.....	10	.....	S	Blank	Blank	.....	.....	D. clouds.....	
New Hampshire, Port Royal, S.C.....	30.44	773.2	.....	.....	53	11.7	93	N	2	0.9	.....	.....	0	.....	.....	0	0	.....	.....	Blue sky.....	
Omaha, Valparaiso, Chili.....	29.95	760.7	63	17.2	61	16.1	88	NNE	3	1.3	.....	.....	1	.....	S	0	0	.....	.....	Pleasant.....	
Onward, Callao, Peru.....	29.94†	760.5†	78	25.6	75	23.9	86	SE	.....	.....	2	.....	5	.....	.....	.....	.....	Long	W	D. clouds.....	
Ossipee, Norfolk, Va.....	30.42	772 7	65	18.3	50	10.0	86	NNE	.....	.....	4	.....	8	.....	NW	.....	.....	.....	.....	D. clouds.....	
Palos, Shanghai, China.....	30.33	770.4	51	10.6	40	4.4	82	WNW	.....	.....	2	.....	7	.....	N&W	.....	.....	.....	.....	Cloudy.....	
Plymouth. N. 13° 22,′ W. 77° 08′.....	29.98	761.5	43	6.1	82	27.5	100	ENE	.....	.....	3	.....	8	.....	NE	.....	.....	Mod'ate	NE	Overcast.....	
Powhatan, Norfolk, Va.....	.....	.....	.....	.....	50	10.0	??	NNE	15.6	7.0	.....	.....	8	.....	.....	0	0	.....	.....	Threatening	
Ranger, Shanghai, China.....	30.45	773.4	.....	.....	44.5	6.9	80	NW	.....	.....	2	.....	8	.....	N	.....	.....	.....	.....	Cloudy.....	
Rio Bravo, Brownsville, Texas.....	29.94	760.5	.....	.....	64	17.8	100	E	.....	.....	1	.....	2	.....	SSE	.....	.....	.....	.....	Hazy.....	
Santee, Annapolis, Md.....	30.52	775.2	65	18.3	41	5.0	65	NNE	.....	.....	4	.....	2	.....	.....	0	0	.....	.....	Clear	
Saratoga, Norfolk, Va.....	.....	.....	.....	.....	50	10.0	100	NE	.....	.....	4	.....	9	.....	NE	0	0	.....	.....	Overcast.....	
St. Louis, League Island, Pa	30.20	767.1	36	2.2	40	4.4	75	NE	8	3.6	.....	.....	2	.....	NE	0	0	.....	.....	Clear.....	
Swatara, Norfolk, Va.....	30.45	773.4	.....	.....	51	10.6	72	NE	.....	.....	4	.....	10	.....	N&E	.....	.....	.....	.....	D. clouds.....	
Tennessee, N. 31° 21′, E. 123° 51′.....	30.11	764.8	70	21.1	50	10.0	72	NW	.....	.....	4	.....	9	.....	N&W	1.2	30.	Mod'ate	N&W	D. clouds.....	
Trenton, Villefranche, France.....	30.11	764.8	.....	.....	56	13.3	51	Calm	0	0	.....	.....	0	.....	.....	0	0	.....	.....	Blue sky.....	
Vandalia, Naples, Italy.....	30.06	763.5	56	13.3	53	11.7	48	NE	.....	.....	1	.....	2	.....	N	.....	.....	.....	.....	D clouds.....	
Wabash, Boston, Mass.....	30.51	774.9	47	8.3	47	8.3	77	N	7	3.1	.....	.....	2	.....	E	0	0	.....	.....	D. clouds.....	
Wyoming, Washington, D. C.....	30.67†	779.0†	.....	.....	42	5.6	.....	E	.....	.....	1	.....	2	.....	.....	.....	.....	.....	.....	D. clouds.....	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. The position given for the Plymouth is that at noon, local time, instead of that at 7:35 a. m., Washington time.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.		Character.	Direction from—		
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	Up'er 0—10.	Low'r 0—10.	Upper. From—	Lower. From—				
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama, Off Fraser River			29.85*	758.2*	51	10.6		NNE			1		5		NNW				Capt. Seabury.
S. S. City of Peking, N. 29° 28′, E. 175° 11′			30.35*	770.9*	69	20.6	100	ESE			4		10		S	Small	ESE	Raining	Lt. Z. L. Tanner, U.S.N.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio, Hong-Kong, China			30.05	763.3	71	21.7		Calm			0		10					Overcast	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

NOTE.—The originals give the wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. *Aneroid.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson
S. S. Celtic																			Capt. R. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.

S. S. Belgic																			Capt. John Metcalf.
S. S. Gaelic, N. 24° 45′, E. 119° 20′			29.97†	761.2†	67	19.4	??	NE			5		Haze		SW	Heavy	NE	Overcast	Capt. W. H. Kidley
S. S. Oceanic																			Capt. H. Parsell.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. †Aneroid.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig, N. 49° 30′, W. 20° 16′			30.45	773.4	56.0	13.3	94	SSW			6		10		SSW	Mod'ate	SW	Overcast	Capt. Undütsch.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds.

UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Lo'wr	Upper.	Lower.	Character.	Direction from—		
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second	0—10.	0—10.	0—10.	From—	From—				
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, Philadelphia, Pa			30.51*	774.9*	40	4.4	??	WSW			5		9		WNW			Fine	Captain Sargent.
S. S. Ohio, N. 51° 24′, W. 12° 45′			30.51	774.9	54	12.2	93	SSW			4		10?		Calm	Mod'ate	Conf's'd	Clear?	Captain Morrison.
S. S. Pennsylvania, N. 48° 07′, W. 40° 00′			30.37†	771.4†	45	7.2	??	WSW			4		6		WSW	Heavy	SW to NW	Cloudy	Captain Harris.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. * Aneroid † Corrected for temperature and elevation, instrumental error not known.

RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

S. S. Nederland																			Capt. Randle.
S. S. Switzerland, N. 49° 25′, W. 15° 23′			30.60*	777.2*				SW	20	8.9			10		SW	Mod'ate	W	Misty	Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

*Aneroid: regulated to standard at Antwerp.

ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

S. S. Hibernian																			Capt. W. Richardson.
S. S. Scandinavian, Baltimore, Md.			30.40	772.1	40	4.4		NNE			3							D. clouds	

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, N. 43° 28′, W. 69° 30′			30.48	774.2	28	— 2.2	77	N	14	6.3			1k			Rough	ENE	Clear	Capt. James Jorgensen.

NOTE.—The originals for the schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer, U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON DECEMBER 19, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:48 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:38 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Barometer: Corrected for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours	.....	.....	30.28	769.0	59.0	15.0	58	Calm	.....	.....	0	.....	0	.....	.....	0	0	Clear.	Michel.
Algiers	.....	.....	30.18	766.5	52.9	11.6	86	N	.....	.....	2	.....	10	.....	.....	0.209	5.3	Covered...	Peter.
La Calle	.....	.....	30.01	762.2	48.4	9.1	92	NW	.....	.....	3	.....	9	.....	.....	1.024	26.0	Covered	Fleury.
Tunis	.....	.....	30.02	762.4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.213	30.8	.....	Jacques.
Sfax	.....	.....	30.04	763.0	57.2	14.0	.....	NNW	.....	.....	4	.....	9	.....	.....	0	0	Covered	Husson.
Saida	.....	.....	30.22	767.5	49.6	9.8	81	NNW	.....	.....	1	.....	1	.....	.....	0	0	Very fair	Millot.
Tebessa	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Bassières.
Geriville	.....	.....	30.16	766.1	38.8	3.8	87	N	.....	.....	2	.....	5	.....	.....	0	0	Cloudy.	Lemaillot.
Laghouat	.....	.....	30.19	766.9	50.0	10.0	62	E	.....	.....	1	.....	0	.....	.....	0	0	Clear	Guyot.
Biskra	.....	.....	30.14	765.5	62.1	16.7	31	NNW	.....	.....	3	.....	6	.....	.....	0	0	Cloudy	Kuntz.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m.; or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

Agram	29.63	752.5	30.21	767.3	32.2	0.1	62	NE	.....	.....	2	.....	4	.....	.....	0.012	0.3	.....	Prof. Ivan Stozir
Cracow, I. R. Observatory	29.54	750.2	30.36	771.2	23.7	— 4.6	100	NE	.....	.....	3	.....	10	.....	.....	0.126	3.2	.....	Dr. Wierzbiski.
Eperies	29.26	743.2	30.19	766.9	27.7	— 2.4	87	N	.....	.....	4	.....	10	.....	.....	0	0	.....	Julius Mikolik.
Gratz	28.92	734.6	30.24	768.2	30.2	— 1.0	60	NW	.....	.....	6	.....	5	.....	.....	0.193	4.9	.....	Andreas Rospini.
Hermannstadt	28.53	724.7	30.04	762.9	28.9	— 1.7	84	NE	.....	.....	1	.....	10	.....	.....	0.559	14.20	Snowing	Prof. Reissenberger.
Kremsmünster	28.98	736.0	30.42	772.7	25.2	— 3.8	87	WNW	.....	.....	2	.....	10	.....	.....	0.346	8.8	.....	Prof. C. Wagner.
Lemberg	29.27	743.4	30.34	770.5	23.4	— 4.8	93	NE	.....	.....	2	.....	10	.....	.....	0.035	0.9	.....	Dr. T. Stanecki.
Pola	29.98	761.4	30.10	764.4	41.2	5.1	42	ENE	.....	.....	4	.....	0	.....	.....	0	0	.....	I.R.Hydrographic Office.
Szathmar	29.63	752.5	30.12	765.0	33.4	0.8	87	E	.....	.....	2	.....	10	.....	.....	0.248	6.3	.....	Johann Tamas, S. J.
Szegedin	29.77	756.1	30.07	763.7	28.4	— 2.0	92	N	.....	.....	2	.....	10	.....	.....	0.345	8.75	.....	Karl Stancel.
Trieste	30.05	763.2	30.15	765.8	40.8	4.9	37	NE	.....	.....	1	.....	0	.....	.....	0	0	Clear	P. Busin.
Vienna	29.57	751.0	30.32	770.0	20.6	— 3.0	98	NW	.....	.....	4	.....	10	.....	.....	0.157	4.0	Snowing	I. R. Central Met. Obs'y.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 348.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

Arlon	28.98	736.2	30.57	776.4	35.2	1.8	88	N	.....	.....	3	.....	10	.....	.....	0	0	.....	Prof. M. Passau.
Brussels	30.37	771.5	30.59	776.9	40.0	4.8	68	NW	.....	.....	4	.....	10	.....	NNE	0	0	.....	Royal Observatory.
Furnes	30.60	777.2	30.62	777.8	42.8	6.0	83	NE	.....	.....	2	.....	8	.....	.....	0.016	0.4	.....	M. E. de Cae.
Maeseyck	30.45	773.3	30.58	776.6	36.9	2.7	86	N	.....	.....	2	.....	10	.....	.....	0	0	.....	M. Pierrot.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:0, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	30.39	771.9	30.49	774.4	44.2	6.8	.....	SW	4	1.6	.....	.....	4	.....	.....	0	0	Misty	W. Boswell.
Ardrossan	30.52	775.2	30.54	775.7	49	9.4	.....	WSW	.....	.....	2	.....	3	.....	.....	.....	.....	Blue sky	William McNeil.
Armagh, Observatory	.....	.....	30.42	772.7	46.1	7.8	.....	W	1	0.4	.....	.....	10	.....	.....	.....	.....	Gloomy	S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)	.....	.....	30.58	776.7	46.0	7.8	.....	WNW	10	4.5	.....	.....	10	.....	.....	.....	.....	Overcast	John Hartnup.
Birr Castle, (Parsonstown)	.....	.....	30.66	778.7	45.4	7.4	.....	Calm	.....	.....	0	.....	0	.....	.....	.....	.....	Blue sky	J. Dreyer.
Bradford, Yorkshire	30.07	763.8	30.47	773.9	44.1	6.7	.....	N	.....	.....	1	.....	10	.....	.....	0	0	Overcast	J. McLandsborough.
Bridgetown, (Barbados)	29.91	759.7	29.94	760.5	80	26.7	.....	N	.....	.....	1	.....	3	.....	.....	.....	.....	D. clouds	Pvt. G. W. Roberts, A.
Cambridge, Observatory	.....	.....	30.61	777.5	34.5	1.4	.....	S	.....	.....	1	.....	10	.....	.....	.....	.....	Drizzling	H. Todd. [H. C.
Cardington	.....	.....	30.60	777.2	37.0	2.8	.....	W	.....	.....	1	.....	10	.....	.....	.....	.....	Foggy	John McLaren.
Chatham, School M. E	30.47	773.9	30.60	777.2	32.2	0.1	.....	Calm	.....	.....	0	.....	0	.....	.....	.....	.....	Dense fog	Lt. W. G. Morris, R. E.
Dartmoor	29.09	738.9	30.62	777.7	43.8	6.6	.....	W	.....	.....	2	.....	10	.....	.....	.....	.....	Foggy	Alexander Watt.
Davos Platz (Switzerland)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Francis Redford, M. A.
Donaghadee	30.56	776.2	30.59	777.0	46	7.8	.....	W	.....	.....	3	.....	8	.....	.....	.....	.....	D. clouds	J. Mac Gowan.
Dover	30.58	776.7	30.60	777.2	40	4.4	.....	NW	.....	.....	2	.....	10	.....	.....	.....	.....	Foggy	J. Costello.
Eccles, (near Manchester)	.....	.....	30.56	776.2	40.0	4.4	.....	W	.....	.....	.....	.....	10	.....	.....	.....	.....	Foggy	Thomas Mackereth.
Falmouth, Observatory	30.38	771.6	30.61	777.5	49.6	9.8	.....	SW	.....	.....	1	.....	.....	.....	.....	.....	.....	Foggy	The Staff.
Fort Napier, (Natal)	27.58	700.5	29.82	757.4	64.6	18.1	.....	NE	.....	.....	2	.....	10	.....	.....	.....	.....	Raining	Pvt. G. Salmon, A. H. C
Free Town, (Sierra Leone)	.....	.....	29.94	760.5	83	28.3	.....	W	.....	.....	0	.....	3	.....	.....	.....	.....	D. clouds	
Galway, Queen's College	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	30.15	765.8	30.20	767.1	57.2	14.0	.....	NW	.....	.....	2	.....	1	.....	.....	.....	.....	Blue sky	Corpl. C. Aitken, A. H. C.
Glasgow, Observatory	30.32	770.1	30.53	775.4	45.0	7.2	.....	WNW	.....	.....	1	.....	2	.....	.....	.....	.....	Blue sky	D. G. Maclean.
Great Yarmouth	30.59	777.0	30.60	777.2	33	0.6	.....	NW	.....	.....	2	.....	3	.....	.....	.....	.....	Dense fog	G. T. Watson.
Greenwich, Royal Obs'y	30.44	773.2	30.62	777.7	31.4	— 0.3	.....	SW	.....	.....	1	.....	10	.....	.....	.....	.....	Misty	The Staff, for G. B. Airy.
Guernsey	30.38	771.6	30.60	777.2	48	8.9	.....	NNW	.....	.....	1	.....	5	.....	.....	.....	.....	D. clouds	Dr. S. E. Hoskins, F. R. S.
Helston	.....	.....	30.57	776.5	50	10.0	.....	E	.....	.....	0	.....	10n	.....	.....	0.14	3.6	Misty	M. P. Moyle.
Holyhead	30.55	776.0	30.60	777.2	49	9.4	.....	NNW	.....	.....	3	.....	10	.....	.....	.....	.....	Misty	John Tilston.
Jersey	30.36	771.1	30.66	778.7	48.0	8.9	.....	.....	.....	.....	1	.....	10	.....	.....	.....	.....	Overcast	J. Fisher.
Kew, Observatory	.....	.....	30.62	777.7	34.0	1.1	.....	NNW	3	1.3	.....	.....	.....	.....	.....	.....	.....	Dense fog	The Staff.
Kingstown	30.59	777.0	30.61	777.5	48	8.9	.....	WNW	.....	.....	2	.....	10	.....	.....	.....	.....	Misty	George Mitchell.
Leicester, Museum	.....	.....	29.58*	751.3*	38.3	3.5	.....	W	.....	.....	1	.....	10	.....	.....	.....	.....	Drizzling	Wm. J. Harrison, F. G. S.
Malta, (Mediterranean)	29.78	756.4	29.86	758.4	51.0	10.6	.....	NE	.....	.....	5	.....	10	.....	.....	.....	.....	Overcast	Sgt. Fred. Travis, A. H.
Nairn	30.36	771.1	30.45	773.4	45	7.2	.....	Calm	.....	.....	0	.....	5	.....	.....	.....	.....	½ clouded	W. D. Penny. [C.
Nassau, (Bahamas)	.....	.....	30.09	764.3	72.2	22.3	.....	NE	.....	.....	6	.....	6	.....	.....	.....	.....	D. clouds	C. S. Duncombe.
Nottingham, Observatory	30.38	771.6	30.58	776.7	37.5	3.1	.....	Calm	.....	.....	0	.....	10s	.....	Calm	0	0	Foggy	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	30.03	762.7	30.58	776.7	39.0	4.4	.....	Calm	.....	.....	0	.....	10	.....	.....	.....	.....	Dense fog	Rev. Stephen Whitty
Oxford, Radcliffe Obs'y	.....	.....	30.59	777.0	38	3.3	.....	Calm	.....	.....	0	.....	10	.....	.....	.....	.....	Drizzling	Mr. Lucas.
Plymouth	30.53	775.4	30.61	777.5	46.0	7.8	.....	Calm	.....	.....	0	.....	10	.....	.....	.....	.....	Overcast	John Merrifield.
Roche's Point	30.60	777.2	30.64	778.2	48	8.9	.....	NNW	.....	.....	3	.....	5	.....	.....	.....	.....	⅜ clouded	W. Kennedy.
Saint Ann's Head	.....	.....	30.60	777.2	51	10.6	.....	NE	.....	.....	1	.....	7	.....	.....	.....	.....	D. clouds	John C. Walker.
Sandwick Manse, (Orkneys.)	.....	.....	30.38	771.6	46	7.8	.....	W	27	12.1	.....	.....	0	.....	.....	.....	.....	Blue sky	Rev. C. Clouston, LL. D
Scutari, Cemetery, (Turkey)	.....	.....	29.70	754.4	50.8	10.4	.....	N	.....	.....	2	.....	10	.....	.....	.....	.....	Raining	Sergt. W. H. Lyne.
Sheffield	30.29	769.4	30.58	776.7	48.8	9.3	.....	Calm	.....	.....	0	.....	9	.....	.....	Inap.	Inap.	Overcast	W. F. Cooper.
Silloth Rectory	30.51	774.9	30.54	775.7	47.7	8.7	84	W	.....	.....	1	.....	0	.....	.....	0	0	Blue sky	Rev. F. Redford, M. A.
Stonyhurst, Observatory	.....	.....	.....	.....	43.0	6.1	.....	SW	.....	.....	0	.....	10	.....	.....	.....	.....	Foggy	Rev. S. J. Perry.
Stornoway, Lews C., (Hebr.)	.....	.....	30.36	771.1	42	5.6	.....	WSW	.....	.....	2	.....	5	.....	.....	.....	.....	D. clouds	John Smith.
Stratfield Turgiss	30.39	771.9	30.62	777.7	36.8	2.7	.....	Calm	.....	.....	0	.....	Fog	.....	.....	.....	.....	Foggy	Rev. C. H. Griffith, F. M. S.
Thurso	.....	.....	30.38	771.6	44	6.7	.....	SW	.....	.....	1	.....	6	.....	.....	.....	.....	Hazy	John Trotter.
Truro, Royal Institution	.....	.....	30.54	775.7	51	10.6	.....	NW	.....	.....	1	.....	10	.....	.....	.....	.....	Raining	W. Newcombe.
Valencia, Observatory	.....	.....	30.66	778.7	51.0	10.6	.....	N	3	1.3	.....	.....	8	.....	.....	.....	.....	Misty	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Henry Mercer.
Cape Good Hope, Obs'y	30.01	762.2	30.05	763.3	74.0	23.3	43	SSE	10	4.5	.....	8	0	.....	.....	.....	.....	.....	The Staff, for E. J. Stone.
Hobart Town, (Tasmania)	.....	.....	29.76	755.9	60.0	15.6	77	NW	.....	.....	3	.....	9k	.....	.....	0.006	1.5	.....	Francis Abbott, F. R. A. S.
Leith, Restalrig Park	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Andrew Gibb.
Mauritius, Observatory	29.75	755.6	29.94	760.4	81.1	27.3	68	NE	15.0	6.7	.....	1	2	W	E	0.01	0.3	Squally	C. Meldrum.
Melbourne, Observatory	29.98	761.5	30.07	763.8	57.0	13.9	68	W	11	4.9	.....	.....	10	.....	.....	0	0	Dull	R. L. J. Ellery.
Monach L't-house, (Hebrides)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Youngclause.
North Unst, (Shetland Is.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Robert Burnet.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 in lbs. per square foot a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m. *Evidently should read 30.58 inches, and 776.7 mm.

MARINE SERIES.

VESSELS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea or swell. Height scale 0—9	Sea or swell. Direction from—	Weather.	Observer.
S. S. Algeria	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. W. Watson.
S. S. Batavia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. J. E. Mouland.
Ship Camperdown	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. A. T. Miller.
Brig Catherine	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. Adam Smith.
Barque Celeste	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. D. F. McKechnie
S. S. Hibernia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. W. R. Cato
Barque Maroon	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. A. T. Brown.
Ship Mikado	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. C. C. Prehn.
Royal Alice, N. 40° 25′, W. 62° 20′	.....	.....	30.55	776.0	42	5.6	.....	ENE	.....	.....	4	.....	5	.....	.....	4	N	D. clouds	Capt. E. M. Hughes.
S. S. Seine	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. H. Manning.
Barque Sorata	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. Jas. J. Price.
Schooner Traveller	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. Alex Simpson.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.

Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	BAROMETER. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	Low'r 0—10.	Direction. Upper. From—	Lower. From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	Millimeters.	WEATHER.	OBSERVER.
San José	26.16	664.4			66.2	19.0	90	NE			2		1k;d		NE	0	0		Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	30.54	775.8	30.59	777.0	32.4	0.2	92	Calm			0		10						
Fanöe	30.54	775.8	30.56	776.3	31.8	— 0.1	92	S			2		1						
Godthaab, (Greenland)	29.28	743.6	29.32	744.7	13.5	—10.3	80	E			4		10						
Stykkisholm. (Iceland)	29.24	742.8	29.29	743.9	32.9	0.5	100	SW			8		8					Snowing	
Thorshavn, (Farôe)	30.07	763.7	30.10	764.6	42.3	5.7	80	WSW			5		7						
Vestervig	30.37	771.5	30.54	775.8	35.6	2.0	93	SSE			2		10						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

Alençon, Normal School	30.10	764.6	30.65	778.6	44.6	7	37	NW			1		10			0	0	Covered	Collignon, Director.
Amiens, Normal School	30.43	773.0	30.55	775.9	42.4	5.8	88	W			3		0			0	0	Clear.	Bonvarne, Director.
Avignon, Normal School	30.13	765 2	30.21	767.2	45.5	7.5	57	NNW			10		0			0	0	Very clear	Mr. Giraud, Director
Bar-sur-Seine	29.95	760.7	30.54	775.8	39.6	4.2	89	NE			1		10			0.016	0.4	Covered	C. Saillard.
Beaumette Obs'y (Angers)	30.42	772.7	30.59	777.0	41.9	5.5	97	N	0	0					N	0	0		Albert Cheux.
Beauvais	30.25	768.4	30.55	776.0	41.5	5.3	81	NNE			1		8		NNE	0	0	Very cloudy	Normal School.
Besançon	29.56	750.8	30.49	774.5	38.7	3.7	88	N			3		8		N	0.31	8.	Very cloudy	Normal School.
Bourg-en-Bresse	29.55	750.6	30.46	773.7	38.7	3.7	93	N			6		10n		N	0.20	5.	Covered	Normal School.
Bourges, Normal School	30.00	762.1	30.58	776.8	39.7	4.3	97	NW			4		10		NW	0	0	Covered	A. Wagner, Director.
Brest, Naval Observatory	30.34	770.5	30.55	776.0	45.1	7.3	91	SE			1		10		SE	0.030	0.75	Rain & fog	The Staff.
Carcassonne, Normal School	29.98	761.4	30.41	772.3	41.4	5.2	97	W			4		2		NW	0.08	2.	Slightly cl'dy	Vateau, Director.
Caen	30.57	776.4	30.64	778.3	45.0	7.2	85	W			2		10			0	0	Covered	Normal School.
Chartres, Normal School	29.91	759.7	30.50	774.8	40.5	4.7		N			2		10			0.08	2.	Covered	Lequin, Director.
Châlons-sur-Marne, N. Sch'l	30.20	767.1	30.54	775.6	39.9	4.4	93	N			4		10kn			0	0	Covered	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	29.09	738.9	30.51	774.9	39.7	4.3	70	N			1		10		N	0	0	Covered	Alluard, Director.
Commercy, Normal School	29.60	751.9	30.52	775.3	37.6	3.1	89	NNE			2		10		NNE	0.04	1.	Covered	Dr. Goulet, Director.
Commune de Gréasque*	29.02	737.2	30.17	766.2	47.1	8.4	31	NW			2		2		NW	0	0	¼ covered	M. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	30.40	772.2	30.63	778.0	42.4	5.8	94	NW			1		8		NW	0	0	Very cloudy	Monillot, Director.
Le Mans, Normal School	30.32	770.2	30.65	778.6	35.4	1.9	85	N			2					0	0	Dense fog	Poirrier, Director.
Lons-Le-Saulnier, N.School	29.49	749.1	30.49	774.5	38.7	3.7	90	N			6		8		S	0.047	1.20	Very cloudy	Voudez, Director.
Lorient, Naval Observatory	30.54	775.7	30.64	778.2	50.4	10.2	72	E			2		8		N	0	0	¾ covered	T. Carré, Director.
Mâcon, Normal School	29.74	755.5	30.43	772.9	40.3	4.6	93	N			2		10		NE	0	0	Covered	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	29.43	747.4	30.52	775.3	37.0	2.8	89	NW			2		10		N	0	0	Covered	Normal School.
Nismes, Normal School	30.06	763.5	30.27	768.8	49.3	9.6	69	N			6		0			0	0	Clear.	Boyer, Director.
Orleans, Normal School	30.14	765.5	30.53	775.5	37.0	2.8	97	N			2		10		N	0	0	Covered	Bernard, Director.
Paris, Observatory	30.35	770.9	30.60	777.3	41.4	5.2	78	WNW			1		10k		N	Inap.	Inap.	Foggy	National Observatory.
Privas	29.28	743.7	30.38	771 7	44.6	7	82	N			6		5		N	0	0	Cloudy	Normal School
Rochefort, Naval Obs'y	30.61	777.4	30.64	778.2	39.6	4.2	97	NE			1				SW	0	0	Misty	Lt. Decante, Director.
Rouen, Normal School	30.54	775.8	30.63	778.0	35.2	1.8	90	NW			2		10			0	0	Covered	F. Lucard, Director.
Tarbes, Normal School	29.41	746.9	30.53	775.4	44.6	7	85	N			2		10			0	0	Covered	T. Hugues, Director.
Villefranche	29.72	754.8	30.47	773.8	39.7	4.3	90	N			3		10		N	0	0	Covered	Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.70	754.4	29.73	755.1	77.7	25.4										0.20	5.		L'Abbé Marchési.
Marseilles, Observatory			30.14	765.6	50.4	10.2	74	NW			3		0			0	0		The Staff.
Mont-Louis	25.02	635.5	30.34	770.5	29.3	— 1.5	48	NNW	26.1	11.67			8		NNE	0	0		Mr. Falguère.
Nice			30.08	764.1	53.8	12.1	49	E			2		1			0	0	Clear.	Dr. A. Niepce.
Paris, Montsouris Obs'y	30.31	769.8	30.58	776.8	44.6	7.0	92	NNW			2		10		N	Inap.	Inap.		Marié Davy, Director.
Perpignan			30.36	771.2	46.8	8.2	55	N	33.6	15.00			1		NW	0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.	21.38	543.0			16.7	— 8.5		N			6–8		1					Clear.	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.68	576.0			22.6	— 5.2		N			4–6		1			0	0	Clear.	Gen'l de Nansouty.
Saint Maur, (near Paris)	30.35	770.8	30.51	775 0	41.5	5.3	76	N			1		10		NNE	0	0	Covered	E. Renou.
Toulouse, Observatory	29.81	757.2	30.55	775.9	41.2	5.1	71	NW			4		3			0	0		The Staff.
Tours	30.39	772.0	30.59	777.0	38.1	3.4	92	WSW			1		10			0	0	Misty	C. Marquet.
Versailles, (near Paris)			30.59	777.0	41.0	5.0	87	N			1		10			0.006	0.15	Foggy	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.30	769.5	30.32	770.1	40.3	4.6	79	NNE	7.2	3.2			10k			0	0	Covered	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published. At Mirecourt and Rochefort the cloud directions are apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg																			
Berlin	30.39	771.9	30.57	776.5	32.9	0.5	90	SE			1		10			0	0		Prof. Dr. Hoh.
Breslau	29.94	760.5	30.48	774.2	26.5	— 3.6	81	NE			3		10			0	0		Prof. Arndt.
Carlsruhe	30.11	764.7	30.56	776.3	37.4	3.0	58	NE			2		1			0	0		Royal University Obs'y.
Cassel	30.00	762.1	30.62	777.8	30.6	— 0.8	87	N			1		5	NNE		0.201	5.1		Albert Senz.
Crefeld	30.38	771.7	30.55	776.9	34.3	1.3	81	N			2		7			0	0		Dr. H. Möhl.
Emden	30.65	778.4	30.68	779.3	33.8	1.0	95	SSW			0		10			0	0		Director Lose.
Frankfort on the Main	30.18	766.5	30.57	776.4	36.5	2.5		NE			1		1			0	0		Prof. Prestel.
Friedrichshafen	29.09	738.9	30.53	775.5	29.5	— 1.4	72	NE			7		4	NE		0.031	0.8	Light snow..	M. Wilhelm.
Hamburg	30.54	775.7	30.61	777.6	32.5	0.3	89	NNE			2		8k			0	0	Light fog.....	Captain F. Hegemann.
Kiel	30.58	776.6	30.59	777.0	33.1	0.6	83	ENE			2		10			0	0		Prof. G. Karsten.
Königsberg, (Prussia)	30.54	775.7	30.62	777.7	25.2	— 3.8	89	SE								0	0	Cloudy.....	Prof. E. Luther.
Köslin			30.52	775.1	28.8	— 1.8		E			2		4			0	0		H. Müller.
Leipsic, Observatory	30.13	765.4	30.58	776.8	31.8	— 0.1	94	N			3		8	NNE		0	0		Prof. Bruhns.
Memel, Naval School	30.57	776.4	30.61	777.6	24.6	— 4.1	84	ENE			2		9cs						Reinbrech von Skalweit.
Neufahrwasser	30.59	777.0	30.49	774.4	29.7	— 1.3	86	E			1		10			0	0		A. Lothes.
Posen	30.33	770.4	30.64	778.2	27.5	— 2.5	70	N			5					0	0	Covered.....	Dr. Magener.
Strassburg Obs., (in Alsace	29.95	760.8	30.53	775.5	37.8	3.2	58	NE			3		1			0.039	1.0		Dr. Schur.
Stuttgart	29.52	749.9	30.52	775.2	33.4	0.8	71	NE			1		8	E		0	0		Prof. Schoder.
Treves, (Trier)	29.89	759.2	30.42	772.7	39.0	3.9	79	N			2		10			0.007	0.18	Dense fog...	Prof. Flesch.
Weissenburg, (Bavaria)	28.92	734.5	30.53	775.5	28.4	— 2.0	92	ENE	1	0.5			10					Light snow.	Dr. Von Bebber.
Wustrow, Naval School	30.65	778.5	30.69	779.5	34.9	1.6	93	ESE			3		8			0	0	Cloudy.....	E. F. Schütz.
German Naval Series.																			

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Königsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4. Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines, Königsberg, Posen and Wustrow in cubic zolls. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens

Athens	29.33	744.9	29.73	755.2	47.8	8.8		N			0.5							Cloudy.....	Dr. J. F. J. Schmidt.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and wind-force; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	30.04	763.0	30.09	764.3	68.1	20.1	58	NE	16.0?	8.0?			2			0	0	D. clouds.....	
Deesa	29.60	751.8	30.08	764.2	75.8	24.3	48	N					6	SW		0	0	D. clouds.....	
Bombay	29.92	760.0	29.96	761.0	79.8	26.6	85	NW	13.0	5.8			10		SSW	0	0	Overcast.....	
Poona	27.97	710.5	29.99	761.6	77.4	25.2	61	SE					10		SE	0	0	D. clouds.....	
Lahore	29.42	747.2	30.21	767.3	54.7	12.6	62	NW	2.3	1.0			1			0	0	Blue sky.....	
Belgaum	27.43	696.6	29.98	761.4	75.1	23.9	60	SE	11.0	4.9			10	SW		0	0	Overcast.....	
Bangalore																			
Roorkee	29.15	740.3	30.09	764.2	61.2	16.2	85	NW	3.0	1.3			5			0.19	4.8		
Agra	29.52	749.7	30.11	764.8	61.8	16.6	89	N					8			0	0		
Trichinopoly																			
Nagpur	28.97	735.8	30.03	762.7	76.6	24.8	56	Calm	1.5	0.7			9	E	NW	0	0	Gloomy.....	
Madras																			
Lucknow	29.67	753.6	30.06	763.5	62.4	16.9	80	W	3.3	1.5									
Allahabad	29.71	754.6	30.03	762.6	70.7	21.5	76	NW	2.0	0.9			0			0	0	Blue sky.....	
Patna	29.80	756.8	29.98	761.6	69.9	21.1	64	W	2.2	1.0			0			0	0	Blue sky.....	
Hazaribagh	27.94	709.7	29.99	761.8	71.0	21.7	66	WNW	9.7	4.3			0			0	0	Blue sky.....	
Cuttack	29.88	759.1	29.97	761.2	76.8	24.9	59	Calm					0			0	0	Blue sky.....	
Calcutta (Allpore)	29.96	760.9	29.98	761.4	67.9	19.9	67	NW	2.0	0.9			2			0	0	D. clouds.....	
Goalpara	29.53	750.1	29.93	760.3	68.7	20.4	71	Calm	0.9	0.4			0			0	0	Blue sky.....	
Chittagong	29.88	758.9	29.97	761.3	71.8	22.1	65	NNW	2.3	1.0			9		WNW	0	0	D. clouds.....	
Sibsagar	29.65	753.2	30.01	762.2	59.7	15.4	94	Calm	0.4	0.2			2			0	0	Blue sky.....	
Rangoon													7			0	0	D. clouds.....	
Jubbulpore	28.66	727.8	30.04	763.1	75.0	23.9	58	SW	1.7	0.8			9	W		0	0	Overcast.....	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,361 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 1—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	22.11	561.6	30.24	768.0	16.7	— 8.5	73	WNW	.....	.....	6	.....	8	N	.....	0	0	.....	Ab. Dom. Morgini.
Stelvio	22.08	560.9	30.44	770.7	8.4	—13.1	.....	NNE	.....	.....	1	.....	7	.....	.....	0	0	.....	Signora Ernesta Manfredi.
Udine	29.69	754.0	30.11	764.9	39.9	4.4	54	W	2.5	1.1	.....	.....	1	.....	.....	0	0	.....	Prof. Giovanni Clodig.
Padua	30.02	762.4	30.13	765.3	43.0	6.1	52	SW	4.9	2.2	.....	.....	5	W	.....	0	0	.....	Prof. Dott. Lorenzoni.
Vicenza	29.93	760.2	30.13	765.3	43.0	6.1	52	SW	3.1	1.4	.....	.....	3	W	.....	0	0	.....	Conte Alm. Da Schio.
Verona	29.93	760.1	30.16	766.0	45.7	7.6	54	SE	0	0	.....	.....	0	.....	.....	0	0	.....	Dott. B. Bertoncelli.
Bergamo	28.81	731.8	30.20	767.0	39.9	4.4	55	Calm	.....	.....	0	.....	8	.....	.....	0	0	.....	Prof. Giuseppe Calza.
Uomodossola	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Ab. Gio. Capelli.
Milan	29.65	753.2	30.20	767.0	37.0	2.8	.....	NE	.....	.....	2	.....	8	NNE	.....	0.028	0.7	.....	Prof. Gio. Cantoni.
Pavia	29.82	757.3	30.18	766.6	35.1	1.7	87	NE	..	.....	1	.....	9	.....	.....	0	0	.....	Prof. P. F. Denza.
Moncalieri	29.26	743.3	30.22	767.5	37.0	2.8	69	WNW	8.1	3.6	.....	.....	6	S	.....	0	0	.....	Prof. D. C. Bruno.
Mondovi	28.21	716.4	30.21	767.2	38.5	3.6	47	NW	.....	.....	4	.....	1	NE	.....	0	0	.....	Prof. L. Vassallo.
Porto Maurizio	29.88	759.0	30.11	764.7	56.1	13.4	22	ENE	.....	.....	4	.....	2	.....	.....	0	0	.....	Prof. G. M. Garibaldi.
Genoa	29.93	760.3	30.11	764.8	50.0	10.0	36	N	5.6	2.5	.....	.....	0	.....	.....	0	0	.....	Dott. G. Manzi.
Piacenza	29.91	759.8	30.18	766.6	32.9	0.5	89	E	0.7	0.3	.....	.....	10	.....	.....	0	0	.....	Prof. P. Pigorini.
Parma	29.91	759.8	30.25?	768.3?	36.7	2.6	81	SW	.....	.....	4	.....	9	.....	.....	0	0	.....	Cav. F. Mocci.
Florence	29.88	759.0	30.11	764.8	43.3	6.3	84	N	.....	.....	4	.....	4	.....	.....	0	0	.....	Prof. P. Monte.
Leghorn	30.00	762.0	30.09	764.2	45.7	7.6	44	ENE	16.8	7.5	.....	.....	3	.....	.....	0	0	.....	Prof. L. Toscani.
Siena	28.85	732.9	30.11	764.7	40.1	4.5	35	ENE	15.4	6.9	.....	.....	3	E	.....	0	0	.....	Prof. P. Serpieri.
Urbino	28.56	725.3	30.18	766.6	34.9	1.6	72	NNE	.....	.....	2	.....	4	.....	.....	0	0	.....	Prof. Luigi Guidi.
Pesaro	30.07	763.8	30.12	765.1	43.0	6.1	49	NE	45.4	20.3	.....	.....	1	NE	.....	0.008	0.2	.....	Prof. F. DeBosis.
Ancona	30.01	762.3	30.12	765.1	41.7	5.4	46	ENE	.....	.....	8	.....	1	.....	.....	0.288	7.2	.....	Avv. P. Ponticelli.
Grosseto	29.95	760.6	30.06	763.5	45.5	7.5	39	NNE	.....	.....	6	.....	4	NE	.....	0	0	.....	Prof. P. A. Secchi.
Rome	29.82	757.4	30.00	762.0	47.1	8.4	36	N	15.4	6.9	.....	.....	1	.....	.....	0	0	.....	Prof. L. Palmieri.
Naples, O. U	29.78	756.5	29.99	761.7	47.5	8.6	42	NE	.....	.....	4	.....	4	NE	.....	0	0	.....	Prof. C. De Giorgi.
Lecce	29.60	751.9	29.86	758.5	45.1	7.3	53	NNE	17.4	8.8	.....	.....	4	NE	.....	0.099	2.0	.....	Prof. F. D. Conti.
Cosenza	29.02	737.2	29.93	760.3	43.9	6.6	68	NE	1.3	0.6	.....	.....	7	.....	.....	0	0	.....	Prof. A. Pacinotti.
Cagliari	29.78	756.4	29.98	761.4	53.8	12.1	49	NW	.....	.....	2	.....	1	.....	.....	0.295	7.5	.....	Prof. F. Cafiero.
Riposto, (Sicily)	29.84	757.8	29.88	759.0	51.8	11.0	46	N	.....	.....	4	.....	8	S	.....	0.055	1.4	.....	Prof. G. Cacciatore.
Palermo	29.63	752.6	29.89	759.2	49.3	9.6	58	NE	8.7	3.9	.....	.....	10	NNE	.....	0.012	0.3	.....	Prof. A. Pagani.
Caltanissetta	27.89	708.5	29.97	758.7	44.1	6.7	46	N	.....	.....	4	.....	5	.....	.....	0	0	.....	Prof. V. Giuliano.
Syracuse	29.76	755.9	29.84	757.8	54.0	12.2	41	NNE	.....	.....	4	.....	8	NE	.....	0	0	.....	
Sub-Series.																			
Naples, S. R.	29.43	747.4	29.98	761.5	43.2	6.2	44	NE	4.9	2.2	.....	.....	2	.....	.....	0	0	.....	Prof. F. Brioschi.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,543.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Siena, 348.5 m., or 1,143.3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Tokei (Yeddo)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	The Observatory.
Tokei (Yeddo) University	29.57	758.6	29.97	761.3	41	5.	82	NNE	1.5	0.7	.....	8k	4s	.....	.....	0	0	Clearing	Prof. P. V. Veeder.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Señor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Aguascalientes	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	I. N. Marin, M. D.
Córdoba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	C. Peña, M. D.
Cuernavaca	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	L. Castillo, A. E.
Guadalajara	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. L. Perez.
Guanajuato	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. V. Fernandez.
Leon	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. M. Leal.
Mexico	23.06	585.5	30.17	766.2	49.1	9.5	72	SW	0.2	0.07	.....	0	2ks	.....	W	0	0	Clear	Central Observatory. N. N.
Orizaba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	I. Orozco, M. D.
Orizaba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. V. de Leon, M. E.
Pabellon, (Aguascalts)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. R. Gonzalez.
Puebla	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. C. Velazquez.
Toluca	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. F. R. Bayly.
Tlacotalpam	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	G. Barroeta, M. D.
San Luis Potosi	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. J. Rossell.
Vera-Cruz	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. A. Bonilla, M. E.
Zacatecas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	P. Spina. [M. M. D. D.
Puebla, (Catholic Institute)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Tena, F. L. Páramo
Morelia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,290 m., or 7,512.9 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

Furnished by the cooperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	30.16	777.6	30.61	777.6	43.2	6.2	.....	E	.....	.....	1	.....	.....	.....	.....	0	0	.....	
Groningen	30.56	776.1	30.61	777.5	36.9	2.7	.....	NE	.....	.....	2	.....	.....	.....	.....	0	0	.....	
Helder	30.57	776.5	30.57	776.5	41.7	5.4	.....	S	.....	.....	1	.....	.....	.....	.....	0	0	.....	
Hellevoetsluis	.....	.....	30.60	777.2	42.8	6.0	80	NE	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	
Utrecht	30.56	776.1	30.60	777.3	39.9	4.4	74	NNE	.....	.....	2	.....	.5	.....	.....	0	0	Cloudy	H. v d Brink.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	30.29	769.3	30.34	770.7	38.8	3.8	100	S	28.4	12.7	.....	.....	10	.....	.....	0.315	8.0	Raining.....	
Brönö	30.00	762.0	30.04	763.0	41.0	5.0	54	SW	18	8	.....	.....	10	.....	.....	0	0	.....	
Christiania	30.31	769.9	30.47	773.9	23.4	4.8	98	NNW	0	0	.....	.....	10	.....	.....	0.031	0.8	Light fog....	
Tromsö	29.80	756.9	29.84	758.0	41.7	5.4	49	S	27	12	.....	.....	10	.....	.....	0.217	5.5	.....	

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	30.35	770.9	30.54	775.8	59.0	15.0	68	ESE	8.1	3.6	.....	.....	6	.....	.....	0	0	.....	Dr. J. A. Sampaio.
Campo Major	29.34	745.1	30.38	771.6	50.9	10.5	53	ENE	4.9	2.2	.....	.....	0	.....	.....	0	0	.....	Dr. A. M. R. dos Santos
Funchal, (Madeira)	30.21	767.3	30.28	769.1	63.9	17.7	54	E	6.3	2.8	.....	.....	5	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	30.01	762.2	30.38	771.6	48.6	9.2	60	NE	21.0	9.4	.....	.....	0	.....	.....	0	0	.....	The Staff.
Ponta Delgada, (Azores)	30.46	773.6	30.53	775.4	60.4	15.8	62	NE	1.8	0.8	.....	.....	3	.....	.....	0	0	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

Naval Series. Vessels.	Sea or swell. Height scale 0–9	Sea or swell. Direction from—		
S. Bartholomew Dias	.....	.....	.....	
S. S. India	.....	.....	.....	R, A. T. Pinha, Com'd't.
S. S. Mindello	.....	.....	.....	A. D. Pedroso, Com'd't.
S. S. Sado	.....	.....	.....	J. F. R. R. Bastos, Com'd't.
S. S. Sá da Bandeira	.....	.....	.....	A. N. P. Sampaio, Com'd't.
S. S. Tejo	.....	.....	.....	F. Texeira da Silva, Com'd't.
.....	.....	.....	.....	F. J. Ferreina,dos Amas,Com'd't

NOTE.—The originals, except for S. S. Tejo, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	30.04	762.9	30.49	774.4	25.2	— 3.8	93	NE	11	5	.....	.....	10ks	.....	.....	.....	.....	.....	Astronomical Obs.
Wilna	30.19	766.8	30.64	778.3	24.1	— 4.4	86	NE	4	2	.....	.....	10	.....	.....	.....	.....	.....	Astronomical Obs.
Dorpat	30.48	774.3	30.75	781.1	17.8	— 7.9	94	ESE	2	1	.....	.....	10n	.....	.....	.....	.....	Hy. clouds ..	Astronomical Obs.
St. Petersburg	30.76	781.4	30.78	781.8	16.3	— 8.7	89	SSE	2	1	.....	.....	10n	.....	.....	.....	.....	.....	Prof. Dr. Weihrauch
Kuopio	30.21	767.4	30.56	776.1	25.2	— 3.5	100	S	27	12	.....	.....	10	.....	.....	.....	.....	.....	Central Physical Obs.
Kieff	29.79	756.7	30.49	774.5	15.1	— 9.4	94	E	13	6	.....	.....	10n	.....	.....	Blank	Blank	.....	Ch. Forsten.
Nikolaiev	30.14	765.5	30.21	767.3	28.2	— 2.1	85	NE	22	10	.....	.....	10n	.....	.....	.....	.....	Snowing.....	Physical Cabinet.
Kertch	30.13	765.4	30.15	765.9	37.0	2.8	77	NE	18	8	.....	.....	0	.....	.....	.....	.....	.....	Kurdukof.
Moscow	30.45	773.5	31.10	789.9	— 2.9	—19.4	75	SSE	9	4	.....	.....	0	.....	.....	.....	.....	.....	Lagorio.
Lugan	30.39	771.9	30.61	777.6	12.2	—11.0	59	E	34	15	.....	.....	2c	.....	.....	.....	.....	.....	Meteorological Obs.
Archangel	30.67	778.9	30.69	779.4	10.9	—11.7	100	SSW	18	8	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Tiflis	29.12	739.6	30.65	778.6	26.8	— 2.9	87	SE	4	2	.....	.....	10n	.....	.....	.....	.....	.....	Ogorodnikof.
Astrakhan	31.06	788.8	30.97	786.7	7.2	—13.6	67	E	18	8	.....	.....	0	.....	.....	.....	.....	Snowing ..	Physical Observatory.
Kasan	31.00	787.4	31.31	795.3	3.7	—15.7	71	Calm	0	0	.....	.....	1	.....	.....	.....	.....	.....	Sebastianof.
Orenburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Physical Cabinet.
Ekaterinburg	30.20	767.0	31.28	794.4	6.3	—14.3	57	W	9	4	.....	.....	1c	.....	.....	.....	.....	.....	Tschernischet.
Nukuss	30.63	777.9	30.90	784.9	—11.9	—24.4	81	NNE	0	0	.....	.....	0	.....	.....	.....	.....	Light clouds	Meteorological Obs.
Kasaly	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Tashkend	29.07	738.3	31.01	787.7	7.2	—13.8	92	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Bobrof.
Barnaul	30.71	779.9	31.36	796.4	—30.1	—34.5	72	Calm	0	0	.....	.....	6	.....	.....	.....	.....	.....	Michelson.
Yeniseisk	30.98	786.9	31.37	796.8	—17.5	—27.5	83	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Meteorological Obs.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Marks.
Oorga	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Usolzef.
Krotkowo*	30.77	781.5	31.30	794.9	1.6	—16.9	63	N	2	1	.....	.....	0	.....	.....	.....	.....	.....	Mossin.
Peking, (China)	30.39	772.0	30.54	775.6	22.6	— 5.2	43	NW	13	6	.....	.....	5ks	.....	.....	.....	.....	.....	Cand. Fatjanow.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Physical Observatory
Vladivostock	30.10	764.6	30.14	765.6	9.9	—12.3	74	Calm	0	0	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Nikolaievsk, on the Amoor	.....	.....	.....	.....	— 4.4	—20.2	80	W	16	7	.....	.....	0	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	10n	.....	.....	.....	.....	.....	

NOTE.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall; for Krotkowo, the barometer reduced to freezing but not to sea level. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 502 m., or 1,28[illegible] ft.; Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft. * N. 53° 47′, E. 48° 34′.

SPANISH SERIES.

Furnished by the cooperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Rave, Director.
Bilbao, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Manuel de Naveran
Burgos, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Domingo Martin y Perez.
Madrid, Royal Observatory	28.12	714.1	30.43	772.8	45.9	7.7	62	NE	8.9	4.00	.....	0	1	.....	.....	.....	.....	.....	The Staff.
Murcia, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0	Almost clear	Olayo Diaz, Director.
Santiago, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.98	761.4	30.05	763.1	70.3	21.3	87	ESE	6.0	2.7	.....	5c	1k	.....	.....	0	0	Fair	Benito Vines, S. J.
San Fernando, Naval Obs'y	30.18	766.6	30.29	769.2	52.5	11.4	64	N	6.3	2.8	.....	0	0	.....	.....	0	0	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de PortoRico, W.I.	.....	.....	29.84	757.9	78.8	26.0	87	NE	9.8	4.36	.....	5cs	3kn	NE	NE	0.118	3.00	D. clouds.....	Leonardo de Tejeda, Chief of Engineers.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	30.29	769.4	30.33	770.4	32.4	0.2	.....	S	.....	.....	6	.....	10	.....	.....	0	0	.....	
Umea	30.32	770.1	30.37	771.4	30.2	— 1.0	96	Calm	.....	.....	0	.....	10	.....	.....	0	0	.....	
Hernosand	30.35	770.9	30.40	772.2	19.8	— 6.8	94	Calm	.....	.....	0	.....	10	.....	.....	0	0	.....	
Stockholm	30.35	770.9	30.53	775.4	30.6	— 0.8	85	SW	.....	.....	2	.....	8	.....	.....	0	0	.....	
Wisby	30.50	774.8	30.56	776.3	30.2	— 1.0	88	S	.....	.....	4	.....	3	.....	.....	0	0	.....	
Sub-Series.																			
Upsala	30.44	773.1	30.51	775.0	28.9	— 1.7	94	SSW	9.6	4.3	.....	.....	8	.....	WSW	0.045	1.13	.....	Dr. Hildebrandsson.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.93	734.7	30.40	772.1	39.0	3.9	77	NE	.....	.....	2	.....	10	.....	.....	0.051	1.3	Covered	The Observatory.
Zurich	28.77	730.7	30.48	774.1	34.0	1.1	85	NE	.....	.....	1	.....	5	.....	.....	0.079	2.0	Cloudy	The Observatory.

Note.—For Geneva the corresponding departures from the normal values are: Barometer, +7.1 mm; Thermometer, +1.8 cent.; Relative Humidity, —3 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	29.75	755.7	51.4	10.8	86	N	2	1.0	.....	.....	10	.....	SW	0.528	13.4	.....	The Observatory.
Fao, (Persian Gulf)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salonica	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Valona	.....	.....	29.69	754.2	44.2	6.8	.....	NW	.....	.....	2	.....	5	.....	.....	0	0	Cloudy	B. Stéfanidès.
Varna	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. Bertrand.
Sub-Series.																			Imperial Observatory.
Beirut, (Syria,) Lee Obs'y	29.70	754.4	29.82	757.4	64.9	18.3	59	N	.....	.....	1	.....	7ks	.....	S	0	0	D. clouds	Prof. C. V. A. Van Dyck

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	30.24	768.1	30.31	769.9	12.6	—10.8	75	SW	2.0	0.9	.....	7	.....	.....	.....	.....	.....	.....	Hon. J. Ferguson.
Brockville, Ontario	29.89	759.2	30.21	767.3	32	0.0	.....	SW	4	1.8	.....	.....	10s	.....	SW	0.10	2.5	Light rain	W. R. Bigg.
*Chatham, N. B	.....	.....	30.37	771.4	14	—10.0	83	SW	8	3.6	.....	2c	8ks	SW	SW	0	0	Cloudy	G. A. Blair.
Charlottetown, P. E. Island	30.41	772.4	30.45	773.4	21	— 6.1	87	S	6	2.7	.....	5c	0	Calm	.....	0	0	Fair	H. J. Cundall, C. E.
Cornwall, Ontario	29.96	761.0	30.16	766.1	28.0	— 2.2	90	NE	.....	.....	1	.....	10n	.....	.....	0.066	1.65	Rainy	James Smith, M. A.
Dalhousie, N. B	30.26	768.6	30.30	769.6	14.5	— 9.7	91	W	.....	.....	1	.....	.....	.....	.....	0	0	Clear	H. A. Johnson.
Esquimault, B. C	29.827	757.47	29.831	757.77	45.3	7.4	96	N	.....	.....	.....	.....	10	.....	.....	0.14	3.6	Cloudy	W. H. Bevis.
*Father Point, Quebec	30.17	766.3	30.19	766.8	22	— 5.6	84	S	30	13.4	.....	.....	10n	.....	W	0	0	Threatening	J. McWilliams.
Fredericton, N. B	30.41	772.4	30.48	774.2	8.1	—13.3	98	Calm	0	0	.....	.....	10s	.....	.....	Inap.	Inap.	Cloudy	Prof. Harrison.
*Fort Garry, Manitoba	29.09	738.9	29.95	760.7	26	— 3.3	100	Calm	0	0	.....	Haze	Fog	Calm	Calm	0	0	Foggy	James Stewart.
Goderich, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	H. J. Strang, M. A.
Granton, Ontario	28.98	736.1	30.09	764.3	48	8.9	100	SW	.....	.....	1	.....	10n	.....	.....	0.45	11.4	Cloudy	James Grant.
*Halifax, N. S	30.37	771.4	30.52	775.2	19	— 7.2	84	W	5	2.2	.....	2k	2ks	.....	.....	0	0	Fair	F. Allison, M. A.
Hamilton, Ontario	29.74	755.4	30.11	764.8	47.7	8.7	91	SW	.....	.....	1	.....	.....	.....	.....	0	0	Clear	Geo. Dickson, M. A
Heart's Content, N. F	30.32	770.1	30.35	770.9	18	— 7.8	84	N	.....	.....	1	0	0	.....	.....	1.36	34.5	Fine	E. Weedon.
*Kingston, Ontario	29.85	758.2	30.20	767.1	37	2.8	94	S	14	6.3	.....	.....	10ks	.....	S	0.34	8.6	Cloudy	S. Woods, M. A.
Little Glace Bay, N. S	30.43	772.9	30.47	773.9	22.5	— 5.3	.....	W	8	3.6	.....	4c	0	W	.....	0	0	Fair	C. H. Rigby.
*Montreal, Quebec	30.02	762.5	30.23	767.8	30	— 1.1	78	S	16	7.2	.....	.....	10n	.....	.....	0.04	1.0	Light rain	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.90	744.2	30.02	762.5	35	1.7	95	E	11	4.9	.....	.....	10n	.....	E	0.50	12.7	Light rain	Rev. R. Mosley.
Peterboro, Ontario	29.34	745.2	30.12	765.0	34.7	1.5	98	Calm	.....	.....	0	.....	10n	.....	.....	0.32	8.1	Rain and fog	J. F. Jeffers, B. A.
Port Dover, Ontario	29.45	748.0	30.15	765.8	42	5.6	100	S	11	4.9	.....	.....	10n	.....	.....	0.12	2.8	Light rain	H. Morgan.
Port Hastings, N. S	30.45	773.4	30.50	774.7	30.5	— 0.8	.....	W	3	1.3	.....	.....	.....	.....	.....	0	0	Fine	Peter Grant.
Port Stanley, Ontario	29.50	749.3	30.15	765.8	45	7.2	99	SW	7	3.1	.....	.....	Fog	.....	W	0.25	6.3	Light rain	M. Payne.
*Quebec, Quebec	29.95	760.7	30.30	769.6	20	— 6.7	100	Calm	0	0	.....	.....	10n	.....	Calm	0	0	Cloudy	Capt. Ashe, R. N
*Rockliffe, Ontario	29.59	751.6	30.07	763.8	28	— 2.2	100	E	10	4.5	.....	.....	10s	.....	SE	0.10	2.5	Light rain	W. H. McIntyre.
St. John, N. B	30.32	770.1	30.50	774.7	16	— 8.9	100	Calm	0	0	.....	0	10ks	.....	.....	0.11	2.8	Cloudy	G. Murdock, C. E.
*Saugeen, Ontario	29.29	744.0	30.00	762.0	49	9.4	96	SW	13	5.8	.....	.....	10s	.....	.....	0.68	17.3	Cloudy	K. Stewart.
Stayner, Ontario	29.21	741.9	30.00	762.0	42	5.6	96	W	5	2.2	.....	.....	10n	.....	SW	0.22	5.6	Threatening	R. J. Cole.
Stratford, Ontario	28.82	732.0	30.11	764.8	45.2	7.3	99	S	10.0	4.5	.....	.....	Fog	.....	.....	0.280	7.11	Foggy	C. J. MacGregor, M. A.
*Sydney, C. B	30.47	773.9	30.50	774.7	22	— 5.6	86	SW	7	3.1	.....	2c	0	.....	.....	0	0	Clear	T. C. Hill.
*Toronto, Ontario	29.73	755.1	30.12	765.0	39	3.9	95	Calm	0	0	.....	.....	10n	.....	.....	0.08	2.0	Light rain	Magnetic Observatory.
Windsor, N. S	30.41	772.4	30.51	774.9	17.0	— 8.3	83	S	4	1.8	.....	4cs	.....	.....	.....	0	0	Clear	Prof. John E. Oram.
Woodstock, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Montgomery.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	20.0	— 6.7	.....	W	.....	.....	.....	0	0	.....	.....	0.03	0.8	Fair	John Delany

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

1877.—December 19.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	30.18	766.6	30.42	772.7	33	0.6	79	SE	14	6.3	.....	0	8s	.....	Calm	0	0	Fair	
Alpena, Michigan	29.31	744.5	29.97	761.2	37	2.8	100	SW	2	0.9	.....	.....	Fog	.....	Calm	0.53	13.5	Foggy	
Atlantic City, New Jersey	30.47	773.9	30.49	774.4	38	3.3	90	N	4	1.8	.....	2ck	2s	S	S	0	0	Fair	
Augusta, Georgia	30.23	767.8	30.42	772.7	56	13.3	87	NE	5	2.2	.....	.....	10s	.....	E	0	0	Cloudy	
Baltimore, Maryland	30.46	773.7	30.52	775.2	40	4.4	82	NE	2	0.9	.....	5ck	2s	SW	Calm	0	0	Fair	
Barnegat, New Jersey	30.47	773.9	30.49	774.4	37	2.8	90	N	5	2.2	.....	5c;ck	0	NW; SW	.....	0.02	0.5	Fair	
Bismarck, Dakota	28.18	715.8	29.93	760.2	27	— 2.8	77	NW	8	3.6	.....	0	1s	.....	Calm	0	0	Clear	
Boise City, Idaho	27.22	691.4	30.10	764.5	27	— 2.8	77	E	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Boston, Massachusetts	30.36	771.1	30.52	775.2	33	0.6	70	S	7	3.1	.....	.....	10s	.....	S	0	0	Cloudy	
Brackettville, Texas	28.70	729.0	29.70	754.4	66	18 9	84	E	10	4.5	.....	.....	10ks	.....	SE	0.11	2.8	Cloudy	
Breckenridge, Minnesota	28.94	735.1	29.96	761.0	34	1.1	100	W	10	4.5	.....	.....	10s	.....	Calm	0.01	0.3	Cloudy	
Brownsville, Texas	29.89	759.2	29.96	761.0	68	20.0	94	Calm	0	0	.....	.....	10s	.....	Calm	0.28	7.1	Cloudy	
Buffalo, New York	29.40	746.7	30.12	765.0	47	8.3	85	S	16	7.2	.....	.....	10s	.....	W	0.01	0.3	Cloudy	
Burkes, Arizona	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Burlington, Vermont	30.08	764.0	30.36	771.1	33	0.6	79	S	16	7.2	.....	.....	10s	.....	S	0	0	Cloudy	
Cairo, Illinois	29.85	758.2	30.25	768.3	56	13.3	75	S	7	3.1	.....	1ck	0	W	.....	0	0	Clear	
Camp Grant, Arizona	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Camp Verde, Arizona	26.69	677.9	30.18	766.6	41	5.0	91	Calm	.....	.....	.....	10k	0	SW	.....	0.14	3.6	Cloudy	
Campo, California	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Cape Hatteras, N. Carolina	30.30	769.6	30.31	769.9	58	14.4	93	NE	13	5.8	.....	.....	10n	.....	NE	1.70	43.2	Light rain	
Cape Henry, Virginia	30.43	772.9	30.45	773.4	47	8.3	85	NE	12	5.4	.....	.....	10s	.....	NE	0	0	Cloudy	
Cape Lookout, N. Carolina	30.30	769.6	30.32	770.1	54	12.2	100	N	18	8.0	.....	.....	10n	.....	N	0.30	7.6	Light rain	
Cape May, New Jersey	30.45	773.4	30.48	774.2	37	2.8	82	NE	6	2.7	.....	2k	0	S	.....	0	0	Fair	
Charleston, South Carolina	30.31	770.6	30.40	772.1	52	11.1	86	NE	17	7.6	.....	0	0	.....	.....	0	0	Clear	
Cheyenne, Wyoming	24.09	609.6	29.94	760.5	24	— 4.4	61	NW	6	2.7	.....	0	5s	.....	NW	0	0	Fair	
Chicago, Illinois	29.37	746.0	30.06	763.5	57	13.9	87	SW	8	3.6	.....	.....	10s	.....	SW	0.49	12.4	Cloudy	
Cincinnati, Ohio	29.57	751.1	30.22	767.6	56	13.3	75	SE	1	0.4	.....	7k	Fog	W	Calm	0	0	Fair	
Cleveland, Ohio	29.45	748.0	30.17	766.3	55	12.8	93	S	15	6.7	.....	.....	10n	.....	S	0.05	1.3	Light rain	
Concho, Texas	27.99	710.9	29.64	752.8	63	17.2	78	SE	20	8.9	.....	8cs	0	S	.....	Inap.	Inap.	Cloudy	
Corsicana, Texas	29.59	751.6	30.06	763.5	61	16.1	88	SE	12	5.4	.....	.....	10s	.....	SE	0	0	Cloudy	
Davenport, Iowa	29.45	748.0	30.08	764.0	57	13.9	90	SW	1	0.4	.....	.....	Fog	.....	Calm	0.02	0.5	Foggy	
Denison, Texas	29.28	743.7	30.07	763.8	61	16.1	88	SE	13	5.8	.....	.....	10ks	.....	SE	0	0	Cloudy	
Denver, Colorado	24.75	628.6	29.97	761.2	31	— 0.6	68	S	5	2.2	.....	.....	8s	.....	Calm	0	0	Cloudy	
Detroit, Michigan	29.41	747.0	30.08	764.0	52	11.1	93	SW	3	1.3	.....	.....	10s;fg	.....	Calm	0.28	7.1	Cloudy	
Dodge City, Kansas	27.31	694.4	29.58	751.3	55	12.8	100	SE	6	2.7	.....	.....	Fog	.....	Calm	0	0	Foggy	
Dubuque, Iowa	29.35	745.5	30.05	763.3	48	8.9	85	Calm	0	0	.....	.....	Fog	.....	Calm	0.14	3.6	Foggy	
Duluth, Minnesota	29.23	743.2	29.95	760.7	39	3.9	91	W	2	0.9	.....	0	0	.....	.....	0.32	8.1	Clear	
Eagle Pass, Texas	29.28	743.7	30.01	762.2	65	18.3	100	SE	8	3.6	.....	.....	10s	.....	Calm	Inap.	Inap.	Cloudy	
Eastport, Maine	30.41	772.4	30.48	774.2	31	— 0.6	89	SW	7	3.1	.....	.....	10s	.....	SW	0	0	Cloudy	
Erie, Pennsylvania	29.41	747.0	30.13	765.3	51	10.6	78	S	22	9.8	.....	.....	10s	.....	SW	0	0	Cloudy	
Escanaba, Michigan	29.33	745.0	29.99	761.7	38	3.3	90	Calm	0	0	.....	.....	10s	.....	Calm	0.33	8.4	Cloudy	
Florence, Arizona	28.30	718.8	29.90	759.4	50	10.0	64	E	.....	.....	.....	.....	10n	.....	E	0.85	21.6	Light rain	
FortBayard, New Mexico	23.90	607.0	29.90	759.4	33	0.6	89	Calm	0	0	.....	.....	10s	.....	Calm	0.06	1.5	Cloudy	
Fort Craig, New Mexico	25.37	644.4	.....	.....	39	3.9	100	SE	4	1.8	.....	.....	10n	.....	Calm	0.06	1.5	Light rain	
Fort Gibson, Indian Ter	29.53	750.0	30.07	763.8	55	12.8	87	SE	6	2.7	.....	0	8s	.....	S	0	0	Fair	
Fort Griffin, Texas	28.68	728.5	29.93	760.2	62	16.7	88	S	8	3.6	.....	.....	10ks	.....	S	0	0	Cloudy	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	28.78	731.0	29.87	758.7	60	15.6	94	SE	12	5.4	.....	.....	10s	.....	SE	1.31	33.3	Threatening	
Galveston, Texas	30.03	762.7	30.07	763.8	61	16.1	100	E	10	4.5	.....	.....	Fog	.....	Calm	Inap.	Inap.	Foggy	
Grand Haven, Michigan	29.39	746.5	30.04	763.0	50	10.0	93	SW	20	8.9	.....	.....	Fog	.....	Calm	1.49	37.8	Foggy	
Indianapolis, Indiana	29.40	746.7	30.18	766.6	57	13.9	81	S	5	2.2	.....	0	8s;n	.....	S	0.12	3.0	Threatening	
Indianola, Texas	29.99	761.7	30.02	762.5	68	17.2	100	E	18	8.0	.....	0	Fog	.....	Calm	0.03	0.8	Clear	
Jacksboro, Texas	28.85	732.8	29.96	761.0	61	16.1	94	SE	15	6.7	.....	.....	10s	.....	SE	0	0	Cloudy	
Jacksonville, Florida	30.26	768.6	30.29	769.4	60	15.6	88	NE	12	5.4	.....	.....	10s	.....	NE	0	0	Threatening	
Keokuk, Iowa	29.43	747.5	30.04	763.0	57	13.9	87	SW	7	3.1	.....	.....	10s	.....	SW	0.12	3.0	Cloudy	
Key West, Florida	30.04	763.0	30.07	763.8	68.5	20.3	90	NE	13	5.8	.....	0	5ks	.....	NE	0.15	3.8	Fair	
Kittyhawk, North Carolina	30.36	771.1	30.39	771.9	52	11.1	100	N	20	8.9	.....	.....	10s	.....	S	Inap.	Inap.	Cloudy	
Knoxville, Tennessee	29.36	745.7	30.40	772.1	47	8.3	85	Calm	0	0	.....	5ck	Sm'e	SE	.....	0	0	Smoky	
La Crosse, Wisconsin	29.29	744.0	30.03	762.7	45	7.2	100	S	6	2.7	.....	.....	Fog	.....	.....	0.24	6.1	Foggy	
La Mesilla, New Mexico	25.92	658.4	30.08	764.0	42	5.6	87	SW	1	0.4	.....	.....	10s	.....	Calm	0	0	Cloudy	
Laredo, Texas	.....	.....	.....	.....	67	19.4	90	S	6	2.7	.....	.....	10n	.....	Calm	0.01	0.3	Light rain	
Leavenworth, Kansas	29.18	741.2	30.01	762.2	57	13.9	93	S	2	0.9	.....	.....	10ks	.....	SW	0.03	0.8	Cloudy	
Los Angeles, California	29.62	752.3	29.96	761.0	48	8.9	78	N	6	2.7	.....	0	0	.....	.....	0.01	0.3	Clear	
Louisville, Kentucky	29.68	753.9	30.24	768.1	56	13.3	74	S	6	2.7	.....	0	5s	.....	S	0	0	Fair	
Lynchburg, Virginia	29.78	756.4	30.50	774.7	45	7.2	68	Calm	0	0	.....	Haze	5s	Calm	N	0	0	Fair	
Maricopa Wells, Arizona	.....	.....	.....	.....	42	5.6	83	N	.....	.....	.....	.....	10s	.....	Calm	0.05	1.3	Cloudy	
Marquette, Michigan	29.23	742.4	29.94	760.5	43	6.1	75	SW	3	1.3	.....	.....	10s	.....	Calm	0	0	Cloudy	
Mason, Texas	28.32	719.3	30.05	763.3	62	16.7	88	SE	8	3.6	.....	.....	10s	.....	.....	0.08	2.0	Cloudy	
Memphis, Tennessee	29.97	761.2	30.30	769.6	52	11.1	86	SE	3	1.3	.....	0	5s; sm	.....	SE	0	0	Fair	
Milwaukee, Wisconsin	29.35	745.5	30.04	763.0	52	11.1	93	W	8	3.6	.....	0	5ks	.....	W	0.56	14.2	Fair	
Mobile, Alabama	30.20	767.1	30.24	768.1	57	13.9	90	SE	4	1.8	.....	5k	0	SE	.....	0	0	Fair	
Montgomery, Alabama	30.09	764.3	30.33	770.4	50	10.0	85	NE	3	1.3	.....	0	fg sm'	.....	NE	0	0	Hazy	
Morgantown, West Virginia	29.23	742.4	30.31	769.9	48	8.9	77	E	1	0.4	.....	.....	10s	.....	SW	0	0	Cloudy	
Mt. Washington, N. H.	23.84	605.5	30.20	767.1	18	— 7.8	84	NW	66	29.5	.....	8ks	2s	NW	NW	0	0	Cloudy	
Nashville, Tennessee	29.78	756.4	30.33	770.4	44	6.7	81	Calm	0	0	.....	0	Haze	.....	Calm	0	0	Clear	
New Haven, Connecticut	30.39	771.9	30.52	775.2	32	0.0	69	NE	2	0.9	.....	Haze	5s	.....	Calm	0	0	Fair	
New London, Connecticut	30.46	773.7	30.51	774.9	32	0.0	79	N	6	2.7	.....	5k	2s	S	SW	0	0	Fair	
New Orleans, Louisiana	29.09	764.3	30.15	765.8	57	13.9	87	NE	12	5.4	.....	2ck	0	E	.....	0	0	Fair	
Newport, Rhode Island	30.46	773.7	30.51	774.9	41	5.0	74	SE	8	3.6	.....	0	9ks	.....	SE	0	0	Cloudy	
New York, New York	30.32	770.1	30.51	774.9	37	2.8	80	E	6	2.7	.....	.....	Fog	.....	E	0	0	Foggy	
Norfolk, Virginia	30.40	772.1	30.46	773.7	45	7.2	84	NE	8	3.6	.....	.....	10s	.....	NE	0	0	Cloudy	
North Platte, Nebraska	27.07	687.6	29.76	755.9	24	— 4.4	84	W	10	4.5	.....	2c	0	Calm	.....	0	0	Clear	
Olympia, Washington Ter.	29.87	758.7	29.91	759.7	38	3.3	90	S	3	1.3	.....	1c	0	W	.....	0.07	1.8	Clear	
Omaha, Nebraska	28.80	733.8	29.98	761.5	41	5.0	91	Calm	0	0	.....	.....	Fog	.....	Calm	0	0	Foggy	
Oswego, New York	29.88	758.9	30.21	767.3	42	5.6	83	SE	14	6.3	.....	.....	10n	.....	SE	0.22	5.6	Light rain	
Pembina, Dakota	29.08	738.6	29.96	761.0	22	— 5.6	86	NW	6	2.7	.....	.....	10s	.....	Calm	Inap.	Inap.	Cloudy	
Philadelphia, Pennsylvania	30.48	774.2	30.54	775.7	37	2.8	80	NE	3	1.3	.....	.....	10s; sm'	.....	NE; Calm	0	0	Cloudy	
Phœnix, Arizona	.....	.....	.....	.....	47	8.3	92	Calm	.....	.....	.....	.....	10s	.....	SE	0.10	2.5	Cloudy	
Pike's Peak, Colorado	17.66	448.6	29.87	758.7	6	—14.4	76	SE	1	0.4	.....	5c	5s	Calm	SE	0	0	Cloudy	
Pioche, Nevada	23.98	609.1	29.75	755.6	32	0.0	79	W	5	2.2	.....	6	0	.....	.....	0.01	0.3	Clear	
Pittsburg, Pennsylvania	29.43	747.5	30.26	768.6	48	8.9	77	SE	2	0.9	.....	.....	10s; fg	.....	S; C	0	0	Cloudy	
Port Huron, Michigan	29.39	746.5	30.06	763.3	51	10.6	100	S	10	4.5	.....	.....	Fog	.....	[illegible]	[illegible]	6.6	Foggy	
Portland, Maine	30.44	773.2	30.49	774.4	30	— 1.1	78	SW	10	4.5	.....	.....	10s	.....	SW	0	0	Cloudy	
Portland, Oregon	29.95	760.7	30.05	763.3	42	5.6	91	S	10	4.5	.....	.....	10s	.....	Calm	0	0	Cloudy	
Prescott, Arizona	24.66	626.4	30.02	762.5	33	0.6	70	Calm	.....	.....	.....	0	2s	.....	Calm	0.29	7.4	Fair	
Punta Rassa, Florida	30.14	765.5	30.16	766.1	68	17.2	78	NE	8	3.6	.....	2k	0	NE	.....	0	0	Clear	
Red Bluff, California	29.69	754.1	30.06	763.5	49	9.4	89	N	4	1.8	.....	.....	10s	.....	Calm	0	0	Cloudy	
Rochester, New York	29.51	749.5	30.14	765.5	43	6.1	83	SW	10	4.5	.....	.....	10s	.....	W	0.01	0.3	Cloudy	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Roseburg, Oregon	29.49	749.0	30.07	763.8	41	5.0	100	Calm	0	0	.....	.....	10s	.....	Calm	0	0	Cloudy	
Sacramento, California	29.98	761.5	30.06	763.5	46	7.8	92	S	8	3.6	.....	1c	0	S	.....	0	0	Clear	
St. Louis, Missouri	29.59	751.6	30.16	766.1	56	13.3	81	SW	8	3.6	.....	0	6s	.....	Calm	0.02	0.5	Fair	
St. Marks, Florida	30.24	768.1	30.26	768.6	56	13.3	87	NE	7	3.1	.....	0	0	.....	.....	0	0	Clear	
St. Paul, Minnesota	29.13	739.9	29.98	761.5	38	3.3	90	SW	2	0.9	.....	.....	Fog	.....	Calm	0.07	1.8	Foggy	
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salt Lake City, Utah	25.65	651.5	29.98	761.5	30	— 1.1	78	SW	2	0.9	.....	5c	0	N	.....	0	0	Fair	
San Antonio, Texas	29.28	743 7	29.85	758.2	66	18.9	89	SE	7	3.1	.....	.....	10n	.....	SE	Inap.	Inap.	Light rain.	
San Diego, California	29.95	760.7	30.02	762.5	48	8.9	85	NE	2	0.9	.....	0	0	.....	.....	0.25	6 3	Clear	
Sandusky, Ohio	29.48	748.8	30.15	765.8	56	13.3	87	SW	16	7.2	.....	.....	10s	.....	W	0.05	1.3	Cloudy	
Sandy Hook, New Jersey	30.48	774.2	30.60	774.7	41	5.0	83	NE	6	2.7	.....	.....	10ks	.....	W	0	0	Cloudy	
San Francisco, California	29.97	761.2	30.04	763.0	55	12.8	81	S	4	1.8	.....	.....	10s	.....	Calm	0	0	Cloudy	
Santa Fé, New Mexico	23.10	586.7	29.64	752.8	30	— 1.1	87	NE	4	1.8	.....	.....	10s	.....	Calm	0	0	Cloudy	
Savannah, Georgia	30.28	769.1	30.37	771.4	55	12.8	87	NE	6	2.7	.....	.....	10s	.....	NE	0	0	Cloudy	
Shreveport, Louisiana	29.98	761.5	30.20	767.1	52	11.1	100	Calm	0	0	.....	.....	10s	.....	Calm	0	0	Cloudy	
Smithville, North Carolina	30.34	770.6	30.38	771.6	47	8.3	100	N	10	4.5	.....	.....	10s	.....	Calm	0	0	Cloudy	
Springfield, Massachusetts	30.27	768.8	30.41	772.4	32	0.0	69	Calm	0	0	.....	.....	10s	.....	Calm	0	0	Cloudy	
Stockton, Texas	26.81	681.0	29.81	757.2	57	13.9	87	S	20	8.9	.....	0	8s	.....	S	0	0	Fair	
Thatcher's Island, Mass	30.46	773.7	30.52	775.2	37	2.8	80	SW	24	10.7	.....	.....	10s	.....	SW	0	0	Cloudy	
Toledo, Ohio	29.44	747.8	30.12	765.0	55	12.8	93	SW	8	3.6	.....	.....	10s	.....	SW	0.08	2.0	Cloudy	
Tucson, Arizona	27.51	698.7	30.06	763.5	50	10.0	64	Calm	0	0	.....	2k	0	.....	.....	0.35	8.9	Fair	
Tybee Island, Georgia	30.33	770.4	30.37	771.4	54	12.2	86	NE	20	8.9	.....	0	5ks	.....	NE	0	0	Fair	
Umatilla, Oregon	29.75	755.6	.....	.....	28	— 2.2	77	SE	4	1.8	.....	5cs	5s	Calm	Calm	0	0	Cloudy	
Vicksburg, Mississippi	29.98	761.5	30.24	768.1	56	13.3	87	E	6	2.7	.....	5c	0	W	.....	0	0	Fair	
Virginia City, Montana	24.25	615.9	29.73	755.1	24	— 4.4	74	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Visalia, California	29.71	754.6	30.08	764 0	49	9.4	85	SE	1	0.4	.....	.....	10s	.....	SE	Inap.	Inap.	Cloudy	
Washington, D. C	30.39	771.9	30.51	774.9	37	2.8	90	N	3	1.3	.....	10ck	Fog	W	NW	0	0	Cloudy	
Wickenburg, Arizona	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Wilmington, N. Carolina	30.30	769.6	30.38	771.6	47	8.3	92	NW	7	3.1	.....	.....	Fog	.....	Calm	0	0	Dense fog	
Winnemucca, Nevada	25.64	651.2	30.00	762.0	20	— 6.7	70	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Wood's Holl, Mass	30.49	774.4	30.54	775.7	40	4.4	72	SW	15	6.7	.....	.....	10s	.....	SW	0	0	Cloudy	
Yankton, Dakota	28.72	729.5	30.07	763.8	27	— 2.8	88	Calm	0	0	.....	0	Fog	.....	Calm	0	0	Fair	
Yuma, Arizona	29.83	757.7	30.00	762.0	49	9.4	85	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Sub-Series.																			
York Factory, B. A.	30.15	765.8	30.20	767.1	— 2.0	—18.9	84	SW	15	6.7	.....	3c	4s	NW	.....	0.02	0.5	Cloudy	J. Fortescue, W. Wood.
Havana, Cuba, W. I	30.02	762 5	30.03	762.7	71	21.7	85	SE	2.4	1.1	.....	4c	4n	NW	E	0	0	Cloudy	Chas. Hasselbrink.
Kingston, Jamaica, W. I	30.04	763.0	30.05	763.3	78	25.6	90	Calm	0	0	.....	8c	6s	W	N	0	0	.....	James Gall.
Navassa, W. I	29.81	757.2	29.89	759.2	78.5	25.8	.....	NE	10	4.5	.....	.....	.....	.....	.....	0	0	Cloudy	F. M Everett.
St. Thomas, W. I	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	G. O. Gellich.
Paramaribo, D. Guiana, S. A	.....	.....	29.94	760.5	83	28.3	83	E	.....	.....	2	5ck	4s	E	.....	0	0	Fair	C. J. Hering.
Batavia, Dutch Guiana, S. A	30.02	762.4	30.02	762.6	83.8	28.8	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0	Cloudy	Dr. H. Groot.
Medellin, Colombia, S. A	25.12	638.0	.....	.....	67.4	19.7	82	Calm	.....	.....	0	1cs	2ks	.....	.....	0.05	1.3	Fair	Thomas Herran.
Honolulu, Oahu, H. I	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Daniel Smith.
Makawao, Maui, H. I	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo; for Batavia, the barometer reduced to freezing but not to sea-level. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573,4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation

STATIONS AND VESSELS.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard Mare Island, Cal.	30.02	762.5	53	11.7	52	11.1	93	SW	2	0.9	.....	.....	10	.....	S&W	0	0	.....	.....	Overcast.....	
Navy Yard, Pensacola, Fla.	30.33	770.4	.....	.....	62	16.7	88	ENE	15	6.7	.....	.....	7	.....	.....	0	0	.....	.....	D. clouds.....	
Navy Yard, Portsmouth, N.H	30.49	774.4	62	16.7	33	0.6	89	WSW	.....	.....	1	.....	10	.....	.....	0	0	.....	.....	Cloudy.....	
Naval Hospital, Yokohama, Japan	29.90	759.4	51	10.6	42	5.6	83	NNW	.....	.....	3	.....	10ks	.....	SW	0.26	6.6	.....	.....	Cloudy.....	
Alliance, Smyrna, Turkey	29.76	755.9	60	15.6	56	13.3	87	ENE	.....	.....	0–1	.....	9	.....	E	.....	.....	.....	.....	Rainy.....	
Ashuelot. Shanghai, China	30.34	770.6	56	13.3	41	5.0	100	NNW	.....	.....	2	.....	9	.....	Calm	.....	.....	.....	.....	D. clouds.....	
Canonicus, New Orleans, La	30.14	765.5	45	7.2	57	13.9	87	E	.....	.....	2	.....	6	.....	.....	.....	.....	.....	.....	Cloudy.....	
Colorado, New York, N. Y	30.49	774.4	38	3.3	37	2.8	79	E	1	0.4	.....	.....	9	.....	E	0	0	.....	.....	Foggy	
Despatch, Constantinople, Turkey	29.87	758.7	80	26.7	56	13.3	87	NE	.....	.....	1	.....	10	.....	NE	.....	.....	.....	.....	Rainy.....	
Essex, St. Paul de Loanda, Lower Guinea	29.75	755.6	83	28.3	84	28.9	91	W	.....	.....	1	.....	8	.....	.....	.....	.....	Smooth	.....	D. clouds.....	
Franklin, Norfolk, Va	30.54	775.7	48	8.9	48	8.9	85	NNE	6.5	2.9	.....	.....	.....	.....	NNE	0	0	.....	.....	Cloudy	
Guard, Lisbon, Portugal	30.30	769.6	56	13.3	53	11.7	67	N	.....	.....	2	.....	0	.....	.....	.....	.....	.....	.....	Hazy.....	
Lackawana, Mare Island, Cal	30.10	764.5	.....	.....	57	13.9	75	Calm	.....	.....	0	.....	10	.....	.....	.....	.....	.....	.....	D. clouds. ...	
Marion, Villefranche, France	30.06	763.5	58	14.4	60	15.6	50	ESE	.....	.....	1	.....	4	.....	.....	0	0	Smooth	S	D. clouds.....	
Michigan, Erie, Pa	29.70	754.4	63	17.2	50	10.0	79	S	.....	.....	3	.....	8	.....	S	.....	.....	.....	.....	Cloudy.....	
Monocacy, Hong-Kong, China	29.93	760.2	68	20.0	67	19.4	95	E	.....	.....	3–5	.....	10	.....	S	.....	.....	.....	.....	Drizzling.....	
New Hampshire, Port Royal, S.C	30.52	775.2	.....	.....	54	12.2	93	NE	13	5.8	.....	.....	4	.....	NE	0	0	.....	.....	D. clouds.....	
Omaha, Valparaiso, Chili	29.98	761.5	67	19.4	62	16.7	94	Calm	0	0	.....	.....	10	.....	Calm	0	0	.....	.....	Cloudy.....	
Onward, Callao, Peru	29.92†	760.0†	78	25.6	71	21.7	86	ESE	.....	.....	2	.....	10	.....	.....	.....	.....	Long	W	Hazy.....	
Ossipee, Norfolk, Va	30.53	775.4	71	21.7	48	8.9	85	NNE	.....	.....	2	.....	10	.....	SW	.....	.....	.....	.....	Overcast.....	
Palos, Shanghai, China	30.30	769.6	51	10.6	42	5.6	83	N	.....	.....	2–3	.....	10	.....	Calm	.....	.....	.....	.....	Overcast.....	
Plymouth. N. 10° 48,′ W. 78° 35′	29.88	758.9	86	30.0	83	28.3	96	ENE	.....	.....	3	.....	3	.....	NE	.....	.....	Mod'ate	NE	Clear	
Powhatan, Norfolk, Va	.....	.....	.....	.....	48	8.9	92	NNE	10.0	4.5	.....	.....	10	.....	.....	0	0	.....	.....	Threatening	
Ranger, Shanghai, China	30.48	774.2	.....	.....	45	7.2	92	ENE	.....	.....	1	.....	10	.....	Calm	.....	.....	.....	.....	Overcast.....	
Rio Bravo, Brownsville, Texas	29.86	758.4	.....	.....	68	20.0	100	ESE	.....	.....	1	.....	9	.....	SE	.....	.....	.....	.....	Misty.....	
Santee, Annapolis, Md	30.55	776.0	59	15.0	37	2.8	81	N	.....	.....	1	.....	8	.....	NW	0	0	.....	.....	Cloudy.....	
Saratoga, Norfolk, Va	.....	.....	.....	.....	46	7.8	??	N	.....	.....	3	.....	10	.....	SE	0	0	.....	.....	Overcast.....	
St. Louis, League Island, Pa	30.32	770.1	34	1.1	36	2.2	90	NE	3	1.3	.....	.....	8	.....	NE	0	0	.....	.....	Foggy	
Swatara, Norfolk, Va	30.53	775.4	.....	.....	49	9.4	85	N	.....	.....	2	.....	10	.....	N&E	.....	.....	.....	.....	D. clouds.....	
Tennessee, Woosung, China	30.34	770.6	77	25.0	43	6.1	92	N	.....	.....	3	.....	10	.....	N	0	0	.....	.....	Overcast.....	
Trenton, Villefranche, France	30.17	766.3	.....	.....	63	17.2	67	SE	4	1.8	.....	.....	1	.....	S&E	0	0	.....	.....	D clouds....	
Vandalia, Naples, Italy	29.98	761.5	54	12.2	48	8.9	56	NNE	.....	.....	2–4	.....	2	.....	NNE	.....	.....	.....	.....	Squally	
Wabash, Boston, Mass	30.52	775.2	44	6.7	39	3.9	64	SSE	5	2.2	.....	.....	10	.....	SSE	0	0	.....	.....	D. clouds....	
Wyoming, Washington, D. C	30.73†	780.5†	.....	.....	37	2.8	.....	Calm	.....	.....	0	.....	8	.....	.....	.....	.....	.....	.....	D. clouds.....	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the hour at which the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. The position given for the Plymouth is that at noon, local time, instead of that at 7:35 a. m., Washington time.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	TRUE COURSE TOWARD—	HOURLY RATE IN KNOTS.	BAROMETER REDUCED TO SEA-LEVEL.		TEMPERATURE OF THE AIR.		RELATIVE HUMIDITY.	WIND.				CLOUDS.				SEA-SWELL.		WEATHER.	OBSERVER.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	CHARACTER.	DIRECTION FROM—		
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama, Nanaimo, B. C.			29.74*	755.4*	50	10		NNE			4		10					Showery	Capt. Seabury.
S. S. City of Peking, N. 29° 48′, E. 169° 38′			30.26*	768.6*	73	22.8	85	S			4		0			Smooth		Blue sky	Lt. Z. L. Tanner, U.S.N.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio, Hong-Kong, China			30.12	765.0	70	21.1		Calm			0		10					Overcast	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

NOTE.—The originals give the wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. *Aneroid.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.

S. S. Belgic																			Capt. John Metcalf.
S. S. Gaelic, Hong-Kong, China			30.22†	767.6†	63	17.2	??	NE			4		k		NE	Smooth	NE	Overcast	Capt. W. H. Kidley
S. S. Oceanic																			Capt. H. Parsell.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. †Aneroid.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig, N. 49° 50′, W. 12° 29′			30.09	779.5	52.5	11.4	90	NNE			2		10		NE	Smooth	WNW	Clouded	Capt. Undütsch.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds.

UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Lo'wr	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second	0—10.	0—10.	0—10.	From—	From—	Character.	Direction From—		
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, Philadelphia, Pa			30.52*	775.2*	39	3.9	100	NNE			6		10		NNW			Fine	Captain Sargent.
S. S. Ohio, N. 52° 49′, W. 5° 20′			30.60	777.2	52	11.1	93	NW			3		6		N	Smooth		Foggy	Captain Morrison.
S. S. Pennsylvania, N. 46° 46′, W. 45° 08′			30.09†	764.3†	41	5.0	100	NNW			5		6		N	Heavy	SWto NW	Cloudy	Captain Harris.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. * Aneroid † Corrected for temperature and elevation, instrumental error not known.

RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

S. S. Nederland																			Capt. Randle.
S. S. Switzerland, N. 49° 10′, W. 8° 22′			30.62*	777.7*				NE	18	8.0			10		ENE	Smooth		Fog & mist	Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

*Aneroid: regulated to standard at Antwerp.

ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

S. S. Hibernian																			Capt. W. Richardson.
S. S. Scandinavian, N. 37° 26′, W. 73° 40′			30.40	772.1	54	12.2		ENE			3		2		NE	Short	ENE	Blue sky	

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, Boothbay, Maine			30.49	774.4	34	1.1	90	SW	20	8.9			10s		S	Rough	S	Overcast	Capt. James Jorgensen.

NOTE.—The originals for the schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer, U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON DECEMBER 20, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
8:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:18 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:38 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer: Corrected for instrumental error and temperature. Inches.	Barometer: Corrected for instrumental error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Upper. 0—10.	Clouds. Amount. Low'r. 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours	.....	.....	30.25	768.3	59.7	15.4	55	Calm	.....	.....	0	.....	0	.....	.....	0	0	Clear	Michel.
Algiers	.....	.....	30.17	766.2	49.6	9.8	81	WSW	.....	.....	1	.....	3	.....	.....	0.681	17.3	Pretty fair	Peter.
La Calle	.....	.....	30.06	763.5	46.8	8.2	89	WSW	.....	.....	3	.....	8	.....	.....	0.315	8.0	Very cloudy	Fleury.
Tunis	.....	.....	30.07	763 8	50.2	10.1	75	W	.....	.....	3	.....	10	.....	.....	0.118	3.0	Covered	Jacques.
Sfax	.....	.....	30.12	765.0	57.2	14.0	.....	ESE	.....	.....	2	.....	4	.....	.....	0.079	2.0	Cloudy	Husson.
Saida	.....	.....	30.16	766.1	46.9	8.3	83	NNW	.....	.....	1	.....	1	.....	.....	0	0	Very fair	Millot.
Tebessa	.....	.....							.....	.....		.....		.....	.....				Bassières.
Geriville	.....	.....	30.11	764.7	39.9	4.4	93	N	.....	.....	3	.....	6	.....	.....	0	0	Cloudy	Lemaillot.
Laghouat	.....	.....	30.12	765.0	50.0	10.0	39	N	.....	.....	1	.....	0	.....	.....	0	0	Clear	Guyot.
Biskra	.....	.....	30.15	765.9	59.0	15.0	45	NW	.....	.....	2	.....	5	.....	.....	0	0	Cloudy	Kuntz.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 830 ? meters, or 2,919.9 ? feet; Tebessa, 1,088 ? m., or 3,569.4 ? ft.; Geriville, 1,360 ? m.; or 4,461.7 ? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

Agram	29.78	756.3	30.37	771.3	28.9	— 1.7	72	NE	.....	.....	6	.....	10	.....	.....	0.016	0.4	Snowing	Prof. Ivan Stozir
Cracow, I. R. Observatory	29.84	758.0	30.69	779.4	19.4	— 7.0	100	NE	.....	.....	1	.....	10	.....	.....	0.008	0.2	.....	Dr. Wierzbiski.
Eperies	29.57	751.1	30.51	775.6	19.4	— 7.0	75	N	.....	.....	3	.....	10	.....	.....	0.197	5.00	.....	Julius Mikolik.
Gratz	29.08	738.5	30.41	772.3	30.2	— 1.0	86	SSE	.....	.....	3	.....	5	.....	.....	0	0	.....	Andreas Rospini.
Hermannstadt	28.80	731.5	30.32	770.1	27.0	— 2.8	76	NE	.....	.....	2	.....	10	.....	.....	0.071	1.80	.....	Prof. Reissenberger.
Kremsmünster	29.16	740.7	30.61	777.6	25.2	— 3.8	91	NW	.....	.....	1	.....	10	.....	.....	0.039	1.0	.....	Prof. C. Wagner.
Lemberg	29.52	749.7	30.61	777.4	17.6	— 8.0	97	NE	.....	.....	1	.....	10	.....	.....	0.008	0.2	.....	Dr. T. Stanecki.
Pola	29.93	760.3	30.17	766.3	37.9	3.3	58	NE	.....	.....	4	.....	10s	.....	.....	0	0	.....	I.R.Hydrographic Office.
Szathmar	29.89	759.1	30.39	771.8	27.1	— 2.7	85	NW	.....	.....	3	.....	10	.....	.....	0.039	1.0	.....	Johann Tamas, S. J.
Szegedin	30.00	762.1	30.31	769.8	24.1	— 4.4	86	N	.....	.....	2	.....	10	.....	.....	0.118	3.00	.....	Karl Stancel.
Trieste	30.15	765.9	30.26	768.5	38.5	3.6	54	E	.....	.....	1	.....	10	.....	.....	0	0	Cloudy	P. Busin.
Vienna	29.78	756 5	30.54	775.6	26.1	— 3.3	96	N	.....	.....	3	.....	10	.....	.....	0.071	1 8	.....	I. R. Central Met.Obs'y.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

Arlon	29.07	738.4	30.69	779.5	27.8	— 2.6	80	NE	.....	.....	4	.....	10	.....	.....	0	0	.....	Prof. M. Passau.
Brussels	30.47	773.9	30.68	779.3	34.3	1.3	83	E	.....	.....	2	.....	2	.....	E	0	0	.....	Royal Observatory.
Furnes	30.69	779.5	30.71	780.1	32.2	0.1	97	ESE	.....	.....	2	.....	10	.....	.....	0	0	Foggy	M. E. de Cae.
Maeseyck	30.56	776.2	30.69	779.5	33.1	0.6	80	ENE	.....	.....	2	.....	0	.....	.....	0	0	.....	M. Pierrot.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	30.21	767.3	30.31	769.9	41.4	5.2	.....	S	20	8.9	.....	.....	7	.....	.....	0	0	Squally	W. Boswell.
Ardrossan	30.43	772.9	30.45	773.4	47	8.3	.....	SSE	.....	.....	4	.....	8	.....	.....	.....	.....	Overcast	William McNeil.
Armagh, Observatory	.....	.....	30.45	773.4	43.7	6.5	.....	S	19	8.5	.....	.....	8	.....	.....	.....	.....	Squally	S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)	.....	.....	30.60	777.2	45.0	7.2	.....	SSW	8	3.6	.....	.....	3	.....	.....	.....	.....	Blue sky	John Hartnup.
Birr Castle, (Parsonstown)	.....	.....	30.56	776.2	44.9	7.2	.....	SSE	.....	.....	1	.....	10	.....	.....	0	0	Overcast	J. Dreyer.
Bradford, Yorkshire	30.08	764.0	30.48	774.2	42.1	5.6	.....	N	.....	.....	1	.....	10	.....	.....	0	0	Overcast	J. McLandsborough.
Bridgetown, (Barbados)	29.91	759.7	29.94	760.5	79	26.1	.....	N	.....	.....	1	.....	4	.....	.....	.....	.....	D. clouds	Pvt. G. W. Roberts, A.
Cambridge, Observatory	.....	.....	30.65	778.5	47.5	8.6	.....	SSE	.....	.....	1	.....	10	.....	.....	.....	.....	Drizzling	H. Todd. [H. C.
Cardington	.....	.....	30.66	778.7	43.6	6.4	.....	SW	.....	.....	1	.....	9	.....	.....	.....	.....	Foggy	John McLaren.
Chatham, School M. E.	30.48	774.2	30.62	777.7	40.2	4.6	.....	Calm	.....	.....	0	.....	0	.....	.....	.....	.....	Dense fog	Lt. W. G. Morris, R. E.
Dartmoor	29.04	737.6	30.57	776.5	42.6	5.9	.....	NE	.....	.....	2	.....	5	.....	.....	.....	.....	Fine	Alexander Watt.
Davos Platz (Switzerland)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Francis Redford, M. A.
Donaghadee	30.46	773.7	30.49	774.4	45	7.2	.....	WSW	.....	.....	2	.....	8	.....	.....	.....	.....	D. clouds	J. Mac Gowan.
Dover	30.65	778.5	30.68	779.3	42	5.6	.....	SSE	.....	.....	1	.....	2	.....	.....	.....	.....	¾ clouded	J. Costello.
Eccles, (near Manchester)	.....	.....	30.59	777.0	36.2	2.3	.....	NW	.....	.....	.....	.....	10	.....	.....	.....	.....	Foggy	Thomas Mackereth.
Falmouth, Observatory	30.42	772.7	30.66	778.7	49.3	9.6	.....	SW	.....	.....	1	.....	10	.....	.....	.....	.....	Foggy	The Staff.
Fort Napier, (Natal)	27.45	697.2	29.67	753.6	80.0	26.7	.....	E	.....	.....	2	.....	8	.....	.....	.....	.....	D. clouds	Pvt. G. Salmon, A. H. C.
Free Town, (Sierra Leone)	.....	.....	29.93	760.2	88	31.1	.....	W	.....	.....	1	.....	3	.....	.....	.....	.....	D. clouds	
Galway, Queen's College	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	30.09	764.3	30.15	765.8	59.0	15.0	.....	E	.....	.....	2	.....	3	.....	.....	.....	.....	D. clouds	Corpl. C. Aitken, A.H.C.
Glasgow, Observatory	30.23	767.8	30.43	772.0	43.8	6.6	.....	S	.....	.....	4	.....	10	.....	.....	.....	.....	Gloomy	D. G. Maclean.
Great Yarmouth	30.66	778.7	30.66	778.7	39	3.9	.....	S	.....	.....	2	.....	6	.....	.....	.....	.....	Misty	G. T. Watson.
Greenwich, Royal Obs'y	30.49	774.4	30.67	779.0	42.9	6.1	.....	SE	.....	.....	1	.....	10	.....	.....	.....	.....	Raining	The Staff, for G. B. Airy.
Guernsey	30.41	772.4	30.63	778.0	48	8.9	.....	ENE	.....	.....	1	.....	8	.....	.....	.....	.....	D. clouds	Dr. S. E. Hoskins, F.R.S.
Helston	.....	.....	30.79	782.1	52	11.1	.....	SE	.....	.....	0	.....	10n	.....	.....	0.04	1.0	Misty	M. P. Moyle.
Holyhead	30.50	774.7	30.55	776.0	47	8.3	.....	SW	.....	.....	3	.....	10	.....	.....	.....	.....	Overcast	John Tilston.
Jersey	30.39	771.9	30.69	779.5	45.2	7.3	.....	SE	.....	.....	1	.....	10	.....	.....	.....	.....	Rain and fog	J. Fisher.
Kew, Observatory	.....	.....	30.66	778.7	42.8	6.0	.....	NNW	3	1.3	.....	.....	.....	.....	.....	.....	.....	Dense fog	The Staff.
Kingstown	30.54	775.7	30.57	776.5	44	6.7	.....	E	.....	.....	1	.....	7	.....	.....	.....	.....	D. clouds	George Mitchell.
Leicester, Museum	.....	.....	30.62	777.7	42.0	5.6	.....	W	.....	.....	1	.....	10	.....	.....	.....	.....	Misty	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.90	759.4	29.97	761.2	53.0	11.7	.....	W	.....	.....	3	.....	4	.....	.....	.....	.....	D. clouds	Sgt. Fred. Travis, A. H.
Nairn	30.10	764.5	30.20	767.1	46	7.8	.....	SW	.....	.....	5	.....	8	.....	.....	.....	.....	¾ clouded	W. D. Penny. [O.
Nassau, (Bahamas)	.....	.....	30.05	763.3	72.5	22.5	.....	NE	.....	.....	4	.....	5	.....	.....	.....	.....	D. clouds	C. S. Duncombe.
Nottingham, Observatory	30.44	773.2	30.64	778.2	39.4	4.1	.....	Calm	.....	.....	0	.....	10k;s	.....	WSW	0.024	0.61	Foggy	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	30.09	764.3	30.64	778.2	42.0	5.6	.....	SSW	.....	.....	0–1	.....	9	.....	.....	.....	.....	Foggy	Rev. Stephen Whitty
Oxford, Radcliffe Obs'y	.....	.....	30.64	778.2	42	5.6	.....	Calm	.....	.....	0	.....	10	.....	.....	.....	.....	Foggy	Mr. Lucas.
Plymouth	30.57	776.5	30.64	778.2	47.0	8.3	.....	Calm	.....	.....	0	.....	10	.....	.....	.....	.....	Misty	John Merrifield.
Roche's Point	30.56	776.2	30.61	777.5	47	8.3	.....	SW	.....	.....	2	.....	10	.....	.....	.....	.....	Hazy	W. Kennedy.
Saint Ann's Head	.....	.....	30.62	777.7	49	9.4	.....	Calm	.....	.....	0	.....	7	.....	.....	.....	.....	D. clouds	John C. Walker.
Sandwick Manse, (Orkneys.)	.....	.....	30.12	765.0	45.1	7.3	.....	S	20	8.9	.....	.....	8	.....	.....	.....	.....	D. clouds	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey)	.....	.....	29.91	759.7	54.0	12.2	.....	N	.....	.....	2	.....	10	.....	.....	.....	.....	Raining	Sergt. W. H. Lyne.
Sheffield	30.35	770.9	30.63	778.0	43.7	6.5	.....	SSW	.....	.....	1	.....	2	.....	.....	0.08	2.0	Blue sky	W. F. Cooper.
Silloth Rectory	30.48	774.2	30.61	774.9	44.1	6.7	94	W	.....	.....	1	.....	8	.....	.....	0.080	2.03	D. clouds	Rev. F. Redford, M. A.
Stonyhurst, Observatory	.....	.....	.....	.....	36.8	2.7	.....	N	.....	.....	0	.....	.....	.....	.....	.....	.....	Hazy	Rev. S. J. Perry.
Stornoway, Lews C., (Hebr.)	.....	.....	30.04	763.0	48	8.9	.....	SSW	.....	.....	8	.....	10	.....	.....	.....	.....	Raining	John Smith.
Stratfield Turgiss	30.45	773.4	30.68	779.3	42.3	5.7	.....	Calm	.....	.....	0	.....	Fog	.....	.....	.....	.....	Foggy	Rev. C. H. Griffith, F.M.S.
Thurso	.....	.....	30.11	764.8	46	7.8	.....	S	.....	.....	3	.....	8	.....	.....	.....	.....	Gloomy	John Trotter.
Truro, Royal Institution	.....	.....	30.59	777.0	50	10.0	.....	S	.....	.....	4	.....	9	.....	.....	.....	.....	Raining	W. Newcombe.
Valencia, Observatory	.....	.....	30.56	776.2	50.4	10.2	.....	SSW	23	10.3	.....	.....	10	.....	.....	.....	.....	Drizzling	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Henry Mercer.
Cape Good Hope, Obs'y	29.78	756.4	29.82	757.4	69.8	21.0	59	W	3	1.3	.....	5	7	.....	.....	.....	.....	.....	The Staff, for E. J. Stone.
Hobart Town, (Tasmania)	.....	.....	30.08	764.0	54.0	12.2	78	SW	.....	.....	3	.....	0	.....	.....	0	0	.....	Francis Abbott, F.R.A.S.
Leith, Restalrig Park	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Andrew Gibb.
Mauritius, Observatory	29.83	757.7	30.02	762.5	80.9	27.2	67	ENE	16.5	7.4	.....	1	2	.....	ENE	0.65	16.5	Squally	C. Meldrum.
Melbourne, Observatory	30.08	764.0	30.17	766.3	56.4	13.6	78	ESE	6	2.7	.....	.....	10	.....	.....	0.04	1.0	Showery	R. L. J. Ellery.
Monach L't-house, (Hebrides)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Youngclause.
North Unst, (Shetland Is.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Robert Burnet.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,1057 ft., or 1,556.07 m.; Fort Napier, 2,200 ft., or 670.6 m.

Marine Series. Vessels.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea or swell. Height scale 0—9	Sea or swell. Direction from—	Weather.	Observer.
S. S. Algeria, N. 40° 25′, W. 69° 40′	.....	.....	30.19	766.8	51	10.6	WNW	.....	.....	2	.....	9	WNW	.....	0*	.....	D. clouds	Capt. W. Watson.
S. S. Batavia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. J. E. Mouland.
Ship Camperdown	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. A. T. Miller.
Brig Catherine	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. Adam Smith.
Barque Celeste	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. D. F. McKechnie.
S. S. Hibernia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. W. R. Cato
Barque Maroon	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. A. T. Brown.
Ship Mikado	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. C. C. Prehn.
Royal Alice, N. 40° 30′, W. 61° 20′	.....	.....	30.19	766.8	54	12.2	SW	.....	.....	5	.....	8	.....	.....	4	W	D. clouds	Capt. E. M. Hughes.
S. S. Seine	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. H. Manning.
Barque Sorata	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. Jas. J. Price.
Schooner Traveller	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. Alex Simpson.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. *Feet.

Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
San José	26.15	664.2	.....	.....	66.6	19.2	92	NE	.....	.....	2	pc	1k	.....	NE	Blank	Blank	.....	Federico Maison.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	30.64	778.3	30.69	779.5	34.5	1.4	85	WSW	.....	.....	2	.....	10	.....	.....	.....	.....	.....	.....
Fanöe	30.62	777.8	30.64	778.3	40.5	4.7	96	WSW	.....	.....	4	.....	10	.....	.....	.....	.....	.....	.....
Godthaab, (Greenland)	29.29	743.9	29.33	745.0	19.4	— 7.0	78	SSE	.....	.....	5	.....	10	.....	.....	.....	.....	.....	.....
Stykkisholm, (Iceland)	29.38	746.2	29.42	747.3	27.9	— 2.3	96	SE	.....	.....	4	.....	8	.....	.....	.....	.....	.....	.....
Thorshavn, (Faröe)	29.49	749.1	29.53	750.0	49.1	9.5	94	NW	.....	.....	6	.....	10	.....	.....	.....	.....	.....	.....
Vestervig	30.39	772.0	30.56	776.3	37.8	3.2	100	Calm	.....	.....	0	.....	8	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

Alençon, Normal School	30.11	764.9	30.67	778.9	44.6	7	59	NW	.....	.....	1	.....	0	.....	.....	0	0	Clear	Collignon, Director.
Amiens, Normal School	30.56	776.2	30.68	779.2	32.7	0.4	81	ENE	.....	.....	3	.....	5	.....	W	0	0	Cloudy	Bonvarne, Director.
Avignon, Normal School	30.19	766.8	30.27	768.8	39.2	4	54	NNW	.....	.....	— 8	.....	5	.....	NE	0	0	Cloudy	Mr. Giraud, Director
Bar-sur-Seine	30.00	762.0	30.61	777.4	32.5	0.3	95	NE	.....	.....	2	.....	5km	.....	NE	0	0	Cloudy	C. Saillard.
Beaumette Obs'y (Angers)	30.43	772.8	30.60	777.1	40.5	4.7	83	NNE	8.5	3.8	.....	.....	.....	.....	NE	0	0	.....	Albert Cheux.
Beauvais	30.38	771.7	30.69	779.4	32.0	0.1	84	ENE	.....	.....	1	.....	8	.....	NE	0	0	Very cloudy	Normal School.
Besançon	29.67	753.6	30.52	775.3	30.9	— 0.6	.....	NE	.....	.....	3	.....	8	.....	NE	0	0	Very cloudy	Normal School.
Bourg-en-Bresse	29.48	748.7	30.39	771.9	32.5	0.3	86	N	.....	.....	6	.....	10n	.....	N	0	0	Covered	Normal School.
Bourges, Normal School	30.02	762.6	30.62	777.7	33 8	1	96	N	.....	.....	4	.....	2	.....	N	0	0	Slightly cl'dy	A. Wagner, Director.
Brest, Naval Observatory	30.36	771.2	30.58	776.8	48.0	8.9	89	W	.....	.....	1	.....	10	.....	Calm	0.049	1.25	Misty	The Staff.
Carcassonne, Normal School	29.98	761.5	30.42	772.6	40.3	4.6	80	W	.....	.....	4	.....	2	.....	N	0	0	Slightly cl'dy	Vateau, Director.
Caen	30.58	776.8	30.66	778.7	42.4	5.8	94	W	.....	.....	2	.....	8	.....	.....	0	0	Very cloudy	Normal School.
Chartres, Normal School	30.02	762.4	30.61	777.4	43.7	6.5	.....	N	.....	.....	2	.....	4	.....	SW	0	0	.....	Lequin, Director.
Châlons-sur-Marne, N. Sch'l	30.30	769.5	30.64	778.2	32.9	0.5	96	S	.....	.....	2	.....	10kn	.....	.....	0	0	Covered	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	29.04	737.6	30.48	774.2	33.6	0.9	88	N	.....	.....	2	.....	5	.....	N	0	0	Cloudy	Alluard, Director.
Commercy, Normal School	29.69	754.1	30.63	778.1	31.6	— 0.2	92	NE	.....	.....	4	.....	10	.....	NE	0	0	Covered	Dr. Goulet, Director.
Commune de Gréasque*	29.09	738.8	30.23	767.8	35.6	2.0	67	NW	.....	.....	2	.....	5	.....	NW	0.063	1.6	½ Covered	M. Kina.
Grenoble	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Normal School.
La Roche-sur-Yon, N. School	30.40	772.2	30.63	778.0	40.3	4.6	74	N	.....	.....	2	.....	2	.....	N	0	0	Slightly cl'dy	Mouillot, Director.
Le Mans, Normal School	30.31	769.8	30.63	778.1	38.5	3.6	57	NE	.....	.....	6	.....	2	.....	NE	0	0	Slightly cl'dy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.43	747.4	30.40	772.1	32.2	0.1	78	NE	.....	.....	8	.....	2	.....	SW	0	0	Slightly cl'dy	Voudez, Director.
Lorient, Naval Observatory	30.58	776.8	30.68	779.3	46.4	8.0	83	S	.....	.....	3	.....	10	.....	.....	0	0	Covered	T. Carré, Director.
Mâcon, Normal School	29.69	754.2	30.39	771.8	33.8	0.7	.....	ENE	.....	.....	6	.....	1	.....	N	0	0	Clear	M. Marchal, Director.
Metz	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. A. Schuster, Dir.
Mirecourt	29.47	748.4	30.58	776.6	30.4	— 0.9	92	NW	.....	.....	4	.....	10	.....	SW	0	0	Covered	Normal School.
Nismes, Normal School	30.04	762 9	30.24	768.1	44.2	6 8	69	N	.....	.....	6	.....	0	.....	.....	0	0	Clear	Boyer, Director.
Orleans, Normal School	30.20	767.0	30.60	777.1	33.4	0.8	85	NNE	.....	.....	2	.....	2	.....	NNE	0	0	Slightly cl'dy	Bernard, Director.
Paris, Observatory	30.40	772.1	30.65	778.6	34.0	1.1	78	NE	.....	.....	1	.....	10k	.....	NE	0	0	Misty	National Observatory.
Privas	29.25	743.0	30.36	771.1	42.8	6	70	N	.....	.....	6	.....	5	.....	N	0	0	Cloudy	Normal School
Rochefort, Naval Obs'y	30.57	776.4	30.60	777.2	41.0	5.0	94	NNE	.....	.....	3	.....	.....	.....	.....	0	0	Misty	Lt. Decante, Director.
Rouen, Normal School	30.58	776.8	30.67	779.0	33.8	1.0	85	NW	.....	.....	2	.....	10	.....	.....	0	0	Covered	F. Lucard, Director.
Tarbes, Normal School	29.28	743.8	30.43	772.8	34.3	1.3	97	SW	.....	.....	2	.....	2	.....	W	0	0	Slightly cl'dy	T. Hugues, Director.
Villefranche	29.67	753.6	30.43	772.9	31.5	— 0.3	97	N	.....	.....	6	.....	0	.....	.....	0	0	Clear	Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.70	754.4	29.73	755.1	77.4	25.2	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.71	18.	.....	L'Abbé Marchési.
Marseilles, Observatory	.....	.....	30.20	767.0	37.9	3.3	60	NW	.....	.....	2	.....	6	.....	.....	0.063	1.60	Rainy	The Staff.
Mont-Louis	24.88	632.0	30.20	767.0	22.5	— 5.3	56	N	35.4	15.83	.....	.....	4	.....	N	0	0	.....	Mr. Falguère.
Nice	.....	.....	30.19	766.8	46.0	7.8	39	NE	.....	.....	6	.....	6	.....	.....	0	0	Cloudy	Dr. A. Niepce.
Paris, Montsouris Obs'y	30.36	770.8	30.62	777.8	33.4	0.8	81	NE	.....	.....	3	.....	9	.....	NE	0	0	.....	Marié Davy, Director.
Perpignan	.....	.....	30.33	770.4	41.0	5.5	57	N	33.6	15.00	.....	.....	5	.....	NE	0	0	.....	Dr. Fines.
Pic du Midi, (Summit,) H. P.	21.21	538.8	.....	.....	10.0	—12.2	.....	N	.....	.....	6-8	.....	2	.....	.....	.....	.....	Clear	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.52	572.1	.....	.....	16.7	— 8.5	.....	N	.....	.....	6-8	.....	2	.....	.....	0	0	Clear	Gen'l de Nansouty.
Saint Maur, (near Paris)	30.47	774.0	30.64	778 2	34.3	1.3	79	NE	.....	.....	1	.....	9	.....	NE	0	0	.....	E. Renou.
Toulouse, Observatory	29.71	754.7	30.45	773.3	37.9	3.3	66	WNW	.....	.....	4	.....	8	.....	.....	0	0	.....	The Staff.
Tours	30.38	771.6	30.58	776 6	37.9	3.3	67	ENE	.....	.....	1	.....	0	.....	.....	0	0	Clear	C. Marquet.
Versailles, (near Paris)	.....	.....	30.63	777.9	33.4	0.8	.....	NE	.....	.....	2	.....	10	.....	.....	0	0	Foggy	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.56	776.2	30.58	776.8	36.7	2.6	89	NNE	14.5	6.5	.....	.....	10n	.....	.....	0.555	14.1	Raining	Marc Dechevrens, S. J.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published. At Mirecourt and Rochefort the cloud directions are apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg																			
Berlin	30.57	776.5	30.75	781.0	30.6	— 0.8	79	NE			1		10						Prof. Dr. Hoh.
Breslau	30.17	766.4	30.72	780.2	23.2	— 4.9	82	ENE			3		10			0	0		Prof. Arndt.
Carlsruhe	30.18	766.5	30.64	778.2	31.6	— 0.2	71	NE			2		10			0.067	1.69		Royal University Obs'y.
Cassel	30.15	765.8	30.77	781.6	27.3	— 2.6	89	ENE			2		8	NNE		0	0		Albert Senz.
Crefeld	30.52	775.1	30.68	779.3	33.1	0.6	71	NE			3		8			0	0		Dr. H. Möhl.
Emden	30.79	782.1	30.83	783.0	32.4	0.2	92	S			0		2			0	0		Director Lose.
Frankfort on the Main	30.33	770.3	30.72	780.3	31.1	— 0.5		NE			2		10			0	0		Prof. Prestel.
Friedrichshafen	29.11	739.3	30.62	777.7	25.5	— 3.6	82	NE			8		3	ESE		0	0		Physical Society.
Hamburg	30.69	779.6	30.77	781.5	32.2	0.1	76	SW			1		0			0	0		M. Wilhelm.
Kiel	30.71	780.1	30.73	780.6	33.8	1.0	72	SW			3		7			0	0	Clear.	Captain F. Hegemann.
Königsberg, (Prussia)	30.69	779.5	30.77	781.5	26.2	— 3.2	90	SE								0	0		Prof. G. Karsten.
Köslin			30.73	780.6	30.2	— 1.0		SW			2		4			0	0	Cloudy	Prof. E. Luther.
Leipsic, Observatory	30.33	770.4	30.79	782.0	27.0	— 2.8	79	NNE			1		10	NE					H. Müller.
Memel, Naval School	30.72	780.4	30.77	781.6	25.2	— 3.8	89	ESE			2		10ks					Sleeting	Prof. Bruhns.
Neufahrwasser	30.74	780.9	30.76	781.3	29.7	— 1.3	82	SW			1		10	ENE					Reinbrech von Skalweit.
Posen	30.44	773.2	30.75	781.0	26.8	— 2.9	81	E			6–7					0	0		A. Lothes.
Strassburg Obs., (in Alsace	30.06	763.5	30.65	778.5	31.3	— 0.4	94	NE			3		10	NE		0	0	Covered	Dr. Magener.
Stuttgart	29.62	752.3	30.63	778.0	28.9	— 1.7	74	E			2		10			0	0		Dr. Schur.
Treves, (Trier)	30.01	762.2	30.54	775.7	33.1	0.6	66	NE			1		10			0	0		Prof. Schoder.
Weissenburg, (Bavaria)	29.04	737.6	30.67	778.9	25.9	— 3.4	91	NE	4	2			10			0	0	Foggy	Prof. Flesch.
Wustrow, Naval School	30.77	781.5	30.81	782.6	32.0	0.0	93	SE			3		10			0.016	0.4	Covered	Dr. Von Bebber.
German Naval Series.																0	0	Covered	E. F. Schütz.

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet: Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Königsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4. Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines, Königsberg, Posen and Wustrow in cubic zolls. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens

Athens	29.53	750.0	29.93	760.2	49.1	9.5		E			2.5								
																		Cloudy	Dr. J. F. J. Schmidt.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and wind-force; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	30.07	763.7	30.12	765.1	69.9	21.1	47	ENE	26.0?	11.6?			9			0	0	D. clouds	
Deesa	29.61	752.1	30.10	764.5	75.8	24.3	47	N					7	SW		0	0	D. clouds	
Bombay	29.93	760.1	29.96	761.1	81.0	27.2	80	NNW	11.0	4.9			6	NE	SSE	0	0	D. clouds	
Poona	27.99	711.0	30.00	762.1	78.6	25.9	55	SE					10	S	E	0	0	D. clouds	
Lahore	29.34	745.4	30.13	765.3	67.1	13.9	78	W	2.3	1.0			2			0	0	Blue sky	
Belgaum	27.44	696.8	29.98	761.5	76.9	24.9	46	ESE	1.0	0.4			5	WSW		0	0	D. clouds	
Bangalore																			
Roorkee	29.11	739.3	30.06	763.4	56.8	13.8	87	NW	5.7	2.6									
Agra	29.48	748.9	30.08	764.0	60.8	16.0	82	N					4			0	0		
Trichinopoly													6			0	0		
Nagpur	29.00	736.5	30.05	763.3	78.4	25.8	63	Calm	2.8	1.2									
Madras													7			0	0	D. clouds	
Lucknow	29.65	753.2	30.05	763.2	57.6	14.2	94	NW	5.4	2.4									
Allahabad	29.73	755.0	30.05	763.2	64.5	18.1	64	Calm	5.8	2.6			5		N	0	0	D. clouds	
Patna	29.84	758.0	30.03	762.8	65.4	18.6	62	W	6.7	3.0			8	NW		0	0	D. clouds	
Hazaribagh	27.97	710.5	30.04	763.1	63.0	17.2	49	W	9.6	4.3			6	W	W	0	0	D. clouds	
Cuttack	29.95	760.7	30.03	762.8	78.2	25.7	61	Calm	1.7	0.8			8		SW	0	0		
Calcutta (Alipore)	29.99	761.8	30.01	762.3	70.7	21.5	63	WNW	2.0	0.9						0	0	Blue sky	
Goalpara	29.59	751.5	29.99	761.7	68.4	20.2	72	E	1.6	0.7			1	NW		0	0	D. clouds	
Chittagong	29.91	759.6	30.00	762.0	71.8	22.1	64	WSW	4.0	1.8			10		WNW	0	0	Overcast	
Sibsagar	29.71	754.7	30.06	763.6	62.9	17.2	87	SSE	0.8	0.4			1			0	0	Blue sky	
Rangoon													9			0	0	D. clouds	
Jubbulpore	28.70	729.0	30.10	764.7	68.9	20.5	80	N	2.3	1.0			7	N		0	0	D. clouds	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,361 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	22.15	562.5	30.28	769.2	16.9	— 8.4	71	NE	.....	.....	8	.....	10	NE	.....	0	0	.....	Ab. Dom. Morgini.
Stelvio	22.15	562.6	30.31	769.9	15.1	— 9.4	.....	NNE	.....	.....	4	.....	10	.....	.....	0.374	9.5	.....	Signa e Ernesta Manfredi.
Udine	29.76	756.0	30.19	766.9	38.1	3.4	46	Calm	0	0	.....	.....	10	.....	.....	0	0	.....	Prof. Giovanni Clodig.
Padua	30.10	764.6	30.22	767.5	38.7	3.7	66	NW	4.9	2.2	.....	.....	9	E	.....	0	0	.....	Prof. Dott. Lorenzoni.
Vicenza	30.02	762.5	30.22	767.6	40.6	4.8	68	SW	0	0	.....	.....	8	E	.....	0	0	.....	Conte Alm. Da Schio.
Verona	29.98	761.4	30.21	767.3	40.3	4.6	83	NW	0	0	.....	.....	10	.....	.....	0	0	.....	Dott. B. Bertoncelli.
Bergamo	28.88	733.5	30.26	768.7	34.5	1.4	78	Calm	.....	.....	0	.....	10	.....	.....	0	0	.....	Prof. Trionfini Carlo.
Domodossola	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Giuseppe Calza.
Milan	29.72	754.9	30.27	768.9	35.6	2.0	.....	SSW	.....	.....	2	.....	9	SSE	.....	0	0	.....	Ab. Gio. Capelli.
Pavia	29.92	759.9	30.28	769.2	33.8	1.0	81	NE	.....	.....	2	.....	9	.....	.....	0	0	.....	Prof. Gio. Cantoni
Moncalieri	29.34	745.3	30.30	769.5	35.2	1.8	71	ENE	3.8	1.7	.....	.....	9	NW	.....	0	0	.....	Prof. P. F. Denza.
Mondovi	28.29	718.5	30.29	769.3	31.3	— 0.4	70	SW	.....	.....	2	.....	10	N	.....	0	0	.....	Prof. D. C. Bruno.
Porto Maurizio	30.00	761.9	30.23	767.8	44.1	6.7	34	NE	.....	.....	6	.....	10	.....	.....	0	0	.....	Prof. L. Vassallo.
Genoa	30.05	763.3	30.23	767.8	43.7	6.5	43	N	3.8	1.7	.....	.....	10	NE	.....	0	0	.....	Prof. G. M. Garibaldi.
Piacenza	30.00	762.1	30.27	768.9	32.7	0.4	89	SW	4.3	1.9	.....	.....	10	.....	.....	Blank	Blank	.....	Dott. G. Manzi.
Parma	29.95	760.6	30.28	769.1	35.2	1.8	80	NW	.....	.....	2	.....	10	.....	.....	0.020	0.5	.....	Prof. P. Pigorini.
Florence	29.91	759.8	30.18	766.6	38.3	3.5	64	N	.....	.....	2	.....	10	NE	.....	Blank	Blank	.....	Cav. F. Meucci.
Leghorn	30.05	763.2	30.13	765.4	40.5	4.7	55	NNE	7.4	3.3	.....	.....	4	NE	.....	.....	.....	.....	Prof. P. Monte.
Siena	28.87	733.2	30.12	765.0	32.5	0.3	97	NNW	7.4	3.3	.....	.....	10	.....	.....	Blank	Blank	.....	Prof. L. Toscani.
Urbino	28.52	724.4	30.15	765.7	32.5	0.3	.....	NE	.....	.....	4	.....	10	.....	.....	Blank	Blank	.....	Prof. P. Serpieri.
Pesaro	30.08	763.9	30.13	765.2	42.8	6.0	66	NE	74.5	33.3	.....	.....	10	NE	.....	Blank	Blank	.....	Prof. Luigi Guidi.
Ancona	30.04	763.0	30.15	765.8	40.3	4.6	71	E	.....	.....	6	.....	10	E	.....	Blank	Blank	.....	Prof. F. DeBosis.
Grosseto	30.01	762.2	30.12	765.1	41.5	5.3	62	NNE	.....	.....	4	.....	4	NE	.....	0	0	.....	Avv. P. Pontichelli.
Rome	29.87	758.7	30.05	763.3	43.2	6.2	52	N	5.6	2.5	.....	.....	0	.....	.....	0	0	.....	Prof. P. A. Secchi.
Naples, O. U.	29.81	758.0	30.05	763.2	44.6	7.0	41	E	.....	.....	4	.....	3	.....	.....	0	0	.....	Prof. L. Palmieri.
Lecce	29.69	754.0	29.95	760.6	42.6	5.9	89	NNW	21.7	9.7	.....	.....	10	N	.....	0.157	4.0	.....	Prof. C. De Giorgi.
Cosenza	29.10	739.2	30.01	762.3	41.9	5.5	65	SE	0.7	0.3	.....	.....	2	.....	.....	0	0	.....	Prof. F. D. Conti.
Cagliari	29.77	756.2	29.97	761.2	46.4	8.0	61	NE	.....	.....	2	.....	8	W	.....	0.020	0.5	.....	Prof. A. Pacinotti.
Riposto, (Sicily)	29.94	760.5	29.99	761.7	50.7	10.4	63	S	.....	.....	2	.....	8	NE	.....	0	0	.....	Prof. F. Caflero.
Palermo	29.71	754.5	29.97	761.1	46.2	7.9	67	NE	2.5	1.1	.....	.....	9	NNE	.....	0.402	10.2	.....	Prof. G. Cacciatore.
Caltanissetta	27.96	710.3	29.94	760.5	43.3	6.3	55	NW	.....	.....	4	.....	0	.....	.....	0	0	.....	Prof. A. Pagani.
Syracuse	29.87	758.7	29.95	760.6	52.2	11.2	46	NE	.....	.....	4	.....	6	NNE	.....	0	0	.....	Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.50	749.4	30.06	763.5	42.1	5.6	42	NE	1.3	0.6	.....	.....	0	.....	.....	0	0	.....	Prof. F. Brioschi.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals give the wind-force on the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,543.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Siena, 348.5 m., or 1,143.3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Tōkei (Yeddo)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	The Observatory.
Tokei (Yeddo) University	29.87	758.6	29.97	761.3	41	5.0	87	NNW	2	0.9	.....	9cs	.....	.....	.....	0	0	Fair	Prof. P. V. Veeder.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Aguascalientes	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	I. N. Marin, M. D.
Córdoba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	C. Peña, M. D.
Cuernavaca	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	L. Castillo, A. E.
Guadalajara	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. L. Perez.
Guanajuato	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. V. Fernandez.
Leon	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. M. Leal.
Mexico	23.00	584.1	30.08	764.0	45.5	7.5	58	Calm	0	0	.....	0	0	.....	.....	0	0	Very fine	Central Observatory, N. N.
Orizaba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	I. Orozco, M. D.
Orizaba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. V. de Leon, M. E.
Pabellon, (Aguascalts)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. B. Gonzalez.
Puebla	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. C. Velazquez.
Toluca	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. F. R. Bayly.
Tlacotalpam	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	G. Barroeta, M. D.
San Luis Potosi	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. J. Rossell.
Vera-Cruz	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. A. Bonilla, M. E.
Zacatecas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	P. Spina. [M. M. D. D.
Puebla, (Catholic Institute)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Tena, F. L. Páramo
Morelia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,519 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,591.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,290 m., or 7,512.0 ft.; Orizaba, 1,223 m., or 4,013.1 ft.; Pabellon, 1,921.4 m., or 6,303.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

Furnished by the cooperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	30.72	780.3	30.72	780.3	36.3	2.4	.....	ESE	.....	.....	3	.....	.....	.....	.....	0	0	.....	
Groningen	30.68	779.3	30.74	780.7	33.6	0.9	.....	SE	.....	.....	1	.....	.....	.....	.....	0	0	.....	
Helder	30.71	779.9	30.71	779.9	34.5	1.4	.....	S	.....	.....	1	.....	.....	.....	.....	0	0	.....	
Hellevoetsluis	.....	.....	30.71	780.0	33.1	0.6	88	E	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	
Utrecht	30.68	779.3	30.73	780.5	34.0	1.1	76	ENE	.....	.....	2	.....	2	.....	.....	0	0	Light cloudy	H. v d Brink.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	30.34	770.5	30.39	771.9	42.4	5.8	88	S	32.0	14.3	.....	.....	9	.....	.....	0.630	16.0	.....	
Brönö	29.95	760.7	29.99	761.7	43.5	6.4	62	SW	38	17	.....	.....	10	.....	.....	0.606	15.4	.....	
Christiania	30.33	770.4	30.49	774.4	26.4	— 3.1	98	NE	0	0	.....	.....	10	.....	.....	0	0	.....	
Tromsö	29.47	748.5	29.51	749.6	41.7	5.4	69	S	34	15	.....	.....	10	.....	.....	0.319	8.1	Light fog..... Raining.....	

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	30.30	769.6	30.49	774.5	59.9	15.5	71	SE	3.8	1.7	.....	.....	5	.....	.....	0	0	.....	Dr. J. A. Sampaio.
Campo Major	29.26	743.3	30.31	769.9	50.9	10.5	40	NE	7.4	3.3	.....	.....	0	.....	.....	0	0	.....	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.08	764.1	30.15	765.9	66.0	18.9	47	W	6.9	3.1	.....	.....	4	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.94	760.4	30.31	769.8	48.7	9.3	54	NE	26.2	11.7	.....	.....	0	.....	.....	0	0	.....	The Staff.
Ponta Delgada, (Azores)	30.42	772.6	30.49	774.4	61.3	16.3	75	ENE	3.1	1.4	.....	.....	3	.....	.....	0	0	.....	

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

Naval Series. Vessels.															Sea or swell. Height scale 0–9	Sea or swell. Direction from—		
S. Bartholomew Dias	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R, A. T. Pinha, Com'd't.
S. S. India	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. D. Pedroso, Com'd't.
S. S. Mindello	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. F. R. R. Bastos, Com'd't.
S. S. Sado	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. N. P. Sampaio, Com'd't.
S. S. Sá da Bandeira	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. Texeira da Silva, Com'd't.
S. S. Tejo	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. J. Ferreira, dos Amas, Com'd't.

Note.—The originals, except for S. S. Tejo, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	30.28	769.1	30.74	780.9	18.3	— 7.6	92	ENE	7	3	.....	.....	9ks;ck	.....	.....	.....	.....	.....	Astronomical Obs.
Wilna	30.35	770.8	30.81	782.6	18.3	— 7.6	89	Calm	0	0	.....	.....	10	.....	.....	.....	.....	Heavy clouds	Astronomical Obs.
Dorpat	30.56	776.1	30.82	782.9	17.2	— 8.2	92	SE	2	1	.....	.....	10n	.....	.....	.....	.....	.....	Prof. Dr. Weihrauch.
St. Petersburg	30.85	783.5	30.86	783.9	12.6	—10.8	89	SSE	9	4	.....	.....	10s	.....	.....	.....	.....	Light snow	Central Physical Obs.
Kuopio	30.24	768.1	30.59	776.9	23.4	— 4.8	100	S	34	15	.....	.....	10	.....	.....	Blank	Blank	.....	Ch. Forsten.
Kieff	29.99	761.8	30.71	780.0	5.2	—14.9	100	E	9	4	.....	.....	10n	.....	.....	.....	.....	.....	Physical Cabinet.
Nikolaiev	30.41	772.4	30.48	774.2	18.9	— 7.3	78	NE	31	14	.....	.....	10n	.....	.....	.....	.....	Snowing	Kurdakof.
Kertch	30.25	768.3	30.27	768.8	33.3	0.7	75	NE	18	8	.....	.....	2	.....	.....	.....	.....	.....	Lagorio.
Moscow	30.54	775.6	31.18	792 0	— 3.8	—19.9	68	S	7	3	.....	.....	2ks	.....	.....	.....	.....	.....	Meteorological Obs.
Lugan	30.51	774.9	30.73	780.6	15 8	— 9.0	80	E	34	15	.....	.....	0	.....	.....	.....	.....	.....	Meteorological Obs.
Archangel	30.60	777.1	30.61	777.6	18.7	— 7.4	95	SSW	22	10	.....	.....	10	.....	.....	.....	.....	.....	Ogorodnikof.
Tiflis	29.21	741.9	30.75	781.1	23.7	— 4.6	88	Calm	0	0	.....	.....	10	.....	.....	.....	.....	Snowing	Physical Observatory.
Astrakhan	31.10	789.9	31.02	787.8	10.8	—11.8	64	ENE	11	5	.....	.....	0	.....	.....	.....	.....	.....	Sebastianof.
Kasan	30.95	786.0	31.26	794.0	1.2	—17.1	95	Calm	0	0	.....	.....	2	.....	.....	.....	.....	.....	Physical Cabinet.
Orenburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Tschernischef.
Ekaterinburg	29.97	761.1	31.04	788.4	2.7	—16.3	100	W	13	6	.....	.....	4c;cs	.....	.....	.....	.....	Light clouds	Meteorological Obs.
Nukuss	30.58	776.7	30.85	783.7	— 8.7	—22.6	69	NNE	4	2	.....	.....	.....	.....	.....	.....	.....	.....	
Kasaly	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Bobrof.
Tashkend	28.97	735.8	30.86	783.8	16.9	— 8.4	94	Calm	0	0	.....	.....	10n	.....	.....	.....	.....	.....	Michelson.
Barnaul	30.57	776.5	31.23	793.3	—29.7	—34.3	70	Calm	0	0	.....	.....	10	.....	.....	.....	.....	Light clouds	Meteorological Obs.
Yeniseisk	30.63	778.0	31.01	787.6	—11.0	—23.9	85	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Marks.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Usolzef.
Oorga	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Mossin.
Krotkowo*	30.72	780.4	31.25	793.8	3.4	—15.9	66	NE	4	2	.....	.....	0	.....	.....	.....	.....	.....	Cand. Fatjanow.
Peking, (China)	30.70	779.8	30.84	783.4	19.6	— 6.9	49	NW	34	15	.....	.....	0	.....	.....	.....	.....	.....	Physical Observatory.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Vladivostock	30.29	769.4	30.33	770.4	8.1	—13.3	64	NW	16	7	.....	.....	0	.....	.....	.....	.....	.....	
Nikolaievsk, on the Amoor	.....	.....	.....	.....	—14.3	—25.7	.....	W	9	4	.....	.....	0	.....	.....	.....	.....	.....	

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall; for Krotkowo, the barometer reduced to freezing but not to sea level. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,285 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft. * N. 53° 47′, E. 48° 34′.

SPANISH SERIES.

Furnished by the cooperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Rave, Director.
Bilbao, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Manuel de Naveran.
Burgos, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Domingo Martin y Perez.
Madrid, Royal Observatory	28.02	711.7	30.31	769.9	48.6	9.2	41	SE	7.4	3.33	.....	0	0	.....	.....	0	0	Clear.	The Staff.
Murcia, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Olayo Diaz, Director.
Santiago, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.93	760.4	30.00	762.1	70.7	21.5	83	E	8.5	3.8	.....	1cs	0	.....	.....	0	0	Clear.	Benito Vines, S. J.
San Fernando, Naval Obs'y	30.09	764.2	30.19	766.8	56.3	13.5	63	NNE	9.4	4.2	.....	0	4	.....	SE	0	0	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de PortoRico, W. I.	.....	.....	29.82	757.4	75.2	24.0	84	SE	0	0	.....	2c	2k	E	E	0	0	Clear.	Leonardo de Tejeda, Chief of Engineers.

Note.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p m., instead of 8:19 a m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the cöoperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	30.26	768.5	30.30	769.5	31.3	— 0.4	.....	S	.....	.....	6	.....	10	.....	.....	0	0	.....	
Umea	30.32	770.0	30.37	771.3	28.2	— 3.2	96	S	.....	.....	2	.....	10	.....	.....	0	0	.....	
Hernosand	30.34	770.5	30.39	771.8	29.1	— 1.6	84	W	.....	.....	2	.....	3	.....	.....	0	0	.....	
Stockholm	30.37	771.5	30.55	776.0	32.7	0.4	92	WSW	.....	.....	2	.....	10	.....	.....	0.031	0.8	Foggy	
Wisby	30.52	775.3	30.58	776.8	33.8	1.0	81	SW	.....	.....	6	.....	10	.....	.....	0.004	0.1	.....	
Sub-Series.																			
Upsala	30.46	773.7	30.54	775.6	33.1	0.6	96	SSW	9.8	4.3	.....	.....	10	.....	.....	0.020	0.52	.....	Dr. Hildebrandsson.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.90	734.0	30.40	772.1	30.2	— 1.0	78	NNE	.....	.....	8	.....	8	.....	.....	0	0	Covered	The Observatory.
Zurich	28.82	732.1	30.56	776.2	25.5	— 3.6	68	NE	.....	.....	1	.....	7	.....	.....	0	0	Cloudy	The Observatory.

Note.—For Geneva the corresponding departures from the normal values are: Barometer, +6.4 mm; Thermometer, —3.0 cent.; Relative Humidity, —2 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	29.96	761.0	53.6	12.1	87	N	7	3.0	.....	.....	10	.....	SW	0.150	3.8	.....	The Observatory.
Fao, (Persian Gulf)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salonica	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	B. S'efanidès.
Valona	.....	.....	29.87	758.6	50.0	10.0	.....	SE	.....	.....	1	.....	10	.....	.....	.....	0	Covered	A. Bertrand.
Varna	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Imperial Observatory.
Sub-Series.																			
Beirut,(Syria,) Lee Obs'y	29.86	758.4	29.98	761.5	65.8	18.8	60	W	.....	.....	1	.....	2ks	.....	W	0	0	D. clouds	Prof. C. V. A. Van Dyck

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	.....	.....	.....	.....	26.7	— 2.9	86	N	5.0	2.2	.....	10	.....	.....	.....	.....	.....	.....	Hon. J. Ferguson.
Brockville, Ontario	30.06	763.5	30.38	771.6	36	2.2	.....	Calm	0	0	.....	.....	10s	.....	N	0.20	5.1	Cloudy	W. R. Bigg.
*Chatham, N. B	.....	.....	30.06	763.5	30	— 1.1	78	NW	10	4.5	.....	.....	10n	.....	NW	0.11	2.8	Cloudy	G. A. Blair.
Charlottetown, P. E. Island	29.96	761.0	30.00	762.0	33	0.6	86	NW	8	3.6	.....	.....	10s	.....	Calm	0.210	5.33	Cloudy	H. J. Cundall, C. E.
Cornwall, Ontario	30.11	764.8	30.31	769.9	35.2	1.8	95	N	.....	.....	1	.....	10k	.....	.....	0.373	9.48	Dull	James Smith, M. A.
Dalhousie, N. B	30.14	765.5	30.17	766.3	26.8	— 2.9	91	NW	.....	.....	1	.....	.....	.....	.....	0.075	1.91	Gloomy	H. A. Johnson.
Esquimault, B. C	29.86	758.4	29.91	759.7	48.3	6.3	100	N	.....	.....	.....	10cs	0	.....	.....	0.05	1.3	Cloudy	W. H. Bevis.
*Father Point, Quebec	30.27	768.8	30.29	769.4	23	— 5.0	86	N	36	16.1	.....	2k	5n	NE	NE	0.18	4.6	Fair	J. McWilliams.
Fredericton, N. B	30.05	763.3	30.12	765.0	34.0	1.1	79	NW	7.0	3.1	.....	.....	10n	.....	.....	0.150	3.81	Light snow	Prof. Harrison.
*Fort Garry, Manitoba	29.28	743 7	30.16	766.1	23	— 5.0	94	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	James Stewart.
Goderich, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	H. J. Strang, M. A.
Granton, Ontario	29.21	741.9	30.35	770.9	40	4.4	100	NE	.....	.....	1	0	0	.....	.....	0	0	Foggy	James Grant.
*Halifax, N. S	29.84	757.9	29.98	761.5	39	3.9	94	NW	8	3.6	.....	.....	10n	.....	NW	0.180	4.57	Cloudy	F. Allison, M. A.
Hamilton, Ontario	29.03	760.2	30.31	769.9	47.7	8.7	60	SW	.....	.....	1	8cs	.....	S	.....	0	0	Cloudy	Geo. Dickson, M. A
Heart's Content, N. F	30.02	762.5	30.04	763.0	32	0.0	89	SW	.....	.....	1	.....	10	.....	.....	0	0	Overcast	E. Weedon.
*Kingston, Ontario	29.98	761.5	30.33	770.4	37	2.8	87	NE	6	2.7	.....	.....	10ks	.....	NE	0.21	5.3	Cloudy	S. Woods, M. A.
Little Glace Bay, N. S	29.88	758.9	29.92	760.0	36.0	2.2	.....	SW	6	2.7	.....	.....	10n	.....	.....	0	0	Overcast	C. H. Rigby.
*Montreal, Quebec	30.10	764.5	30.31	769.9	35	1.7	89	N	16	7.2	.....	.....	10s	.....	N	0.21	5.3	Cloudy	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.67	753.6	30.39	771.9	35	1.7	90	E	9	4.0	.....	2k	8ks	NE	NE	0.11	2.8	Cloudy	Rev. R. Mosley.
Peterboro, Ontario	29.58	751.3	30.36	771.1	39.9	4.4	88	W	.....	.....	1	.....	10ks	.....	.....	0	0	Cloudy	J. F. Jeffers, B. A.
Port Dover, Ontario	29.03	752.6	30.33	770.4	45	7.2	94	N	2	0.9	.....	2k	0	W	.....	0.27	6.9	Fair	H. Morgan.
Port Hastings, N. S	29.91	759.7	29.96	761.0	33.8	1.0	.....	NW	2	0.9	.....	.....	.....	.....	.....	0	0	Fine	Peter Grant.
Port Stanley, Ontario	29.66	753.4	30.32	770.1	45	7.2	99	N	1	0.4	.....	.....	10n	.....	Calm	0.14	3.6	Cloudy	M. Payne.
*Quebec, Quebec	29.94	760.5	30.29	769.4	26	— 3.3	88	NW	.....	.....	.....	0	0	.....	.....	0.05	1.3	Clear	Capt. Ashe, R. N.
*Rockliffe, Ontario	29.94	760.5	30.43	772.9	32	0.0	98	N	5	2.2	.....	.....	10s	.....	N	0.05	1.3	Cloudy	W. H. McIntyre.
St. John, N. B	29.91	759.7	30.08	764.0	36	2.2	90	NW	4	1.8	.....	.....	10s	.....	.....	0	0	Cloudy	G. Murdoch, C. E.
*Saugeen, Ontario	29.62	752.3	30.34	770.6	40	4.4	98	E	2	0.9	.....	.....	10ks	.....	.....	0.05	1.3	Cloudy	K. Stewart.
Stayner, Ontario	29.54	750.3	30.35	770.9	39	3.9	95	Calm	0	0	.....	.....	10n	.....	NW	0.10	2.5	Cloudy	R. J. Cole.
Stratford, Ontario	29.91	759.7	29.94	760.5	37	2.8	95	SW	4	1.8	.....	8k	5n	W	SW	0.10	2.5	Cloudy	C. J. MacGregor, M. A.
*Sydney, C. B	29.08	738.6	30.40	772.1	40.3	4.6	99	Calm	0	0	.....	.....	Fog	.....	.....	0	0	Foggy	T. C. Hill.
*Toronto, Ontario	29.97	761.2	30.36	771.1	44	6.7	89	N	6	2.7	.....	.....	10ks	.....	NE	0.01	1.0	Cloudy	Magnetic Observatory.
Windsor, N. S	29.92	760.0	30.01	762.2	38.0	3.3	90	W	4	1.8	.....	0	10k	.....	.....	0	0	Fair	Prof. John E. Oram.
Woodstock, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Montgomery.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	32.0	0.0	.....	S	.....	.....	.....	.....	10n	.....	.....	0	0	Cloudy	John Delany

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,162 ft. or 360.3 m.

1877.—December 20.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	BAROMETER. Corrected for instrumental error and temperature. Inches.	BAROMETER. Corrected for instrumental error and temperature. Millimeters.	BAROMETER. Reduced to sea-level. Inches.	BAROMETER. Reduced to sea-level. Millimeters	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Upper. 0—10.	CLOUDS. Amount. Low'r. 0—10.	CLOUDS. Direction. Upper. From—	CLOUDS. Direction. Lower. From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	WEATHER.	OBSERVER.
Albany, New York	29.97	761.2	30.21	767.3	42	5.6	83	Calm	0	0	.....	.....	10s	.....	Calm	0.04	1.0	Cloudy	
Alpena, Michigan	29.68	753.9	30.35	770.9	40	4.4	91	NE	2	1.3	.....	.....	10s	.....	NE	0	0	Cloudy	
Atlantic City, New Jersey	30.27	768.8	30.29	769.4	42	5.6	91	W	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Augusta, Georgia	30.15	765.8	30.34	770.6	44	6.7	84	N	4	1.8	.....	0	Haze	.....	Calm	0	0	Hazy	
Baltimore, Maryland	30.27	768.8	30.32	770.1	44	6.7	84	E	2	0.9	.....	5ck	Fog	Calm	Calm	0	0	Foggy	
Barnegat, New Jersey	30.24	768.1	30.27	768.8	42	5.6	91	W	6	2.7	.....	5k	Haze	NW	Calm	0	0	Fair	
Bismarck, Dakota	28.25	717.5	30.01	762.2	26	— 3.3	88	S	4	1.8	.....	.....	Fog	.....	.....	Inap.	Inap.	Dense fog	
Boise City, Idaho	27.26	692.4	30.14	765.5	26	— 3.3	81	S	1	0.4	.....	0	6	.....	.....	0	0	Clear	
Boston, Massachusetts	29.99	761.7	30.15	765.8	47	8.3	77	W	13	5.8	.....	5cs	1s	W	W	Inap.	Inap	Fair	
Brackenridge, Texas	29.05	737.9	30.09	764.3	29	— 1.7	89	W	8	3.6	.....	.....	10ks	.....	W	0.37	9.4	Cloudy	
Breckenridge, Minnesota	28.58	725.9	29.60	751.8	55	12.8	68	NE	4	1.8	.....	.....	10s	.....	Calm	Inap.	Inap.	Cloudy	
Brownsville, Texas	29.05	737.9	30.09	764.3	29	— 1.7	89	S	16	7.2	.....	.....	10s	.....	S	0	0	Cloudy	
Buffalo, New York	29.69	754.1	29.75	755.6	70	21.1	84	S	16	7.2	.....	.....	10s	.....	W	0.20	5.1	Cloudy	
Burkes, Arizona	29.59	751.8	30.31	769.9	43	6.1	100	Calm	0	0	.....	.....	.....	.....	.....	.....	.....	.....	
Burlington, Vermont	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.22	5.6	Light rain	
Cairo, Illinois	29.96	761.0	30.23	767.8	40	4.4	91	N	12	5.4	.....	.....	10n	.....	NW	0	0	Clear	
Camp Grant, Arizona	29.85	758.2	30.25	768.3	51	10.6	79	SE	2	0.9	.....	0	0	.....	.....	.....	.....	.....	
Camp Verde, Arizona	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Campo, California	26.81	681.0	30.30	769.6	41	5.0	91	Calm	0	0	.....	0	Fog	.....	Calm	0	0	Foggy	
Cape Hatteras, N. Carolina	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.49	63.2	Smoky	
Cape Henry, Virginia	30.23	768.6	30.27	768.8	53	11.7	93	NW	8	3.6	.....	Haze	Sm'e	.....	.....	0.04	1.0	Cloudy	
Cape Lookout, N. Carolina	30.28	769.1	30.31	769.9	51	10.6	93	N	6	2.7	.....	.....	10s	.....	Calm	0.02	0.5	Cloudy	
Cape May, New Jersey	30.27	768.8	30.28	769.1	52	11.1	100	NE	1	0.4	.....	.....	10s	.....	NE	0	0	Clear	
Charleston, South Carolina	30.27	768.8	30.30	769.6	47	8.3	85	W	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Cheyenne, Wyoming	30.23	767.8	30.30	769.6	50	10.0	93	N	8	3.6	.....	.....	Fog	.....	Calm	0	0	Foggy	
Chicago, Illinois	23.98	609.1	29.92	760.0	19	— 7.2	69	W	6	2.7	.....	0	2s	.....	SW	0	0	Fair	
Cincinnati, Ohio	29.49	749.0	30.18	766.6	56	13.3	81	S	6	2.7	.....	.....	10ks	.....	S	Inap.	Inap.	Cloudy	
Cleveland, Ohio	29.63	752.6	30.30	769.6	46	7.8	84	S	1	0.4	.....	.....	Fog	.....	Calm	0	0	Foggy	
Concho, Texas	29.58	751.3	30.32	770.1	53	11.7	86	SE	6	2.7	.....	.....	10s	.....	S	0.20	5.1	Cloudy	
Corsicana, Texas	27.87	707.9	29.42	747.3	50	10.0	85	W	2	0.9	.....	8c	0	W	.....	1.13	28.7	Cloudy	
Davenport, Iowa	29.30	744.2	29.75	755.6	61	16.1	94	SE	18	8.0	.....	.....	10s	.....	Calm	0.07	1.8	Cloudy	
Deadwood, Dakota Ty	29.55	750.6	30.19	766.8	55	12.8	87	SW	4	1.8	.....	0	1s	.....	SW	0	0	Clear	
Denison, Texas	.....	.....	.....	.....	.....	— 5.0	86	NW	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Denver, Colorado	29.07	738.4	29.86	758.4	58	14.4	88	NE	14	6.3	.....	.....	10n	.....	E	0.01	0.3	Light rain	
Detroit, Michigan	24.74	628.4	29.96	761.0	32	0.0	68	S	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Dodge City, Kansas	29.60	751.8	30.28	769.1	47	8.3	100	NE	5	2.2	.....	.....	10s; fg	.....	Calm	0.15	3.8	Cloudy	
Dubuque, Iowa	27.58	695.4	29.69	754.1	44	6.7	100	N	6	2.7	.....	.....	Fog	.....	Calm	1.76	44.7	Foggy	
Duluth, Minnesota	29.44	747.8	30.14	765.5	53	11.7	80	Calm	0	0	.....	.....	Fog	.....	Calm	0.11	2.8	Foggy	
Eagle Pass, Texas	29.48	748.8	30.18	766.6	38	3.3	90	Calm	0	0	.....	.....	10s	.....	Calm	0.05	1.3	Cloudy	
Eastport, Maine	28.96	735.6	29.69	754.1	56	13.3	81	NW	3	1.3	.....	.....	10s	.....	NW	0.67	17.0	Cloudy	
Erie, Pennsylvania	30.00	762 0	30.07	763.8	37	2.8	80	NW	7	3.1	.....	.....	10s	.....	NW	0.16	4.1	Cloudy	
Escanaba, Michigan	29.58	751.3	30.31	769.9	52	11.1	86	Calm	0	0	.....	.....	10s	.....	.....	0.27	6.9	Cloudy	
Florence, Arizona	29.57	751.1	30.24	768.1	38	3.3	90	NE	4	1.8	.....	.....	Fog	.....	.....	0	0	Dense fog	
FortBayard, New Mexico	28.40	721.3	30.00	762.0	50	10.0	64	E	.....	.....	.....	.....	10s	.....	E	0.06	1.5	Cloudy	
Fort Craig, New Mexico	23.99	609.3	29.99	761.7	35	1.7	80	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Fort Gibson, Indian Ter	25.48	647.2	.....	.....	33	0.6	80	N	4	1.8	.....	0	0	.....	.....	0.07	1.8	Clear	
Fort Griffin, Texas	29.43	747.5	29.97	761.2	57	13.9	75	SE	11	4.9	.....	5c	0	Calm	.....	0	0	Fair	
Fort St. Michael, Alaska	28.44	722 4	29.68	753.9	56	13.3	100	SE	11	4.9	.....	.....	10n	.....	Calm	4.11	104.4	Heavy rain	
Fort Sill, Indian Territory	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Galveston, Texas	28.61	726.7	29.69	754.1	56	13.3	87	E	16	7.2	.....	.....	10n	.....	SE	0.10	2.5	Light rain	
Grand Haven, Michigan	29.78	756.4	29.82	757.4	62	16.7	100	SE	10	4.5	.....	5ck	5ks	S	S	0.10	2.5	Cloudy	
Indianapolis, Indiana	29.56	750.8	30.22	767.6	54	12.2	87	S	10	4.5	.....	.....	10n	.....	Calm	0.41	10.4	Heavy rain	
Indianola, Texas	29.48	748.8	30.27	768.8	51	10.6	78	Calm	0	0	.....	0	Sm'e	.....	.....	0	0	Clear	
Jacksboro, Texas	29.80	756.9	29.82	757.4	57	13.9	100	N	40	17.9	.....	.....	10n	.....	N	0.65	16.5	Heavy rain	
Jacksonville, Florida	28.64	727.4	29.76	755.9	56	13.3	94	NW	4	1.8	.....	.....	10n	.....	.....	0.90	22.9	Light rain	
Keokuk, Iowa	30.18	766.6	30.21	767.3	60	15.6	88	NE	10	4.5	.....	.....	10s	.....	NE	0	0	Cloudy	
Key West, Florida	30.18	766.6	30.21	767.3	60	15.6	88	NE	10	4.5	.....	.....	10s	.....	Calm	0	0	Clear	
Kittyhawk, North Carolina	30.00	762.0	30.03	762.7	68.5	20.3	90	NE	8	3.6	.....	0	Haze	W	E	0	0	Clear	
Knoxville, Tennessee	30.27	768.8	30.29	769.4	52	11.1	100	N	13	5.8	.....	5c	2ks	W	E	0.09	2.3	Fair	
La Crosse, Wisconsin	29.51	749.5	30.12	765.0	59	15.0	88	S	4	1.8	.....	.....	10s	.....	N	0.23	5.8	Cloudy	
La Mesilla, New Mexico	30.00	762.0	30.03	762.7	68.5	20.3	90	NE	8	3.6	.....	5c	2ks	W	E	0.09	2.3	Fair	
Laredo, Texas	29.51	749.5	30.12	765.0	59	15.0	88	S	4	1.8	.....	.....	10s	.....	N	0.23	5.8	Cloudy	
Leavenworth, Kansas	30.27	768.8	30.29	769.4	52	11.1	100	N	13	5.8	.....	.....	10s	.....	.....	0	0	Smoky	
Los Angeles, California	29.38	746.2	30.13	765.3	43	6.1	100	N	2	0.9	.....	0	Sm'e	.....	.....	0	0	Smoky	
Louisville, Kentucky	29.32	744.7	30.37	771.4	40	4.4	91	SW	3	1.3	.....	.....	10n	.....	Calm	0.17	4.3	Light rain	
Lynchburg, Virginia	29.38	746.2	30.13	765.3	43	6.1	100	N	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Maricopa Wells, Arizona	25.99	660.1	30.14	765.5	35	1.7	70	Calm	0	0	.....	0	0	.....	.....	0.84	21.3	Clear	
Marquette, Michigan	.....	.....	.....	.....	56	13.3	93	W	3	1.3	.....	0	0	.....	.....	0.18	4.6	Fair	
Mason, Texas	29.21	741.9	30.03	763.5	49	9.4	93	Calm	0	0	.....	5c	0	Calm	.....	.....	.....	.....	
Memphis, Tennessee	29.69	754.1	30.03	762.7	52	11.1	87	N	6	2.7	.....	0	9s	.....	SE	0	0	Cloudy	
Milwaukee, Wisconsin	29.72	754.9	30.30	769.6	44	6.7	92	N	3	1.3	.....	.....	Fog	.....	Calm	0	0	Dense fog	
Mobile, Alabama	29.63	752.6	30.34	770.6	40	4.4	73	Calm	0	0	.....	0	Haze	.....	S	0	0	Hazy	
Montgomery, Alabama	.....	.....	.....	.....	43	6.1	75	E	.....	.....	.....	.....	10s	.....	Calm	0	0	Cloudy	
Morgantown, West Virginia	29.46	748.3	30.18	766.6	40	4.4	72	SE	4	1.8	.....	.....	10s	.....	Calm	0	0	Cloudy	
Mt. Washington, N. H.	28.66	712.7	29.77	756.1	55	12.8	81	SW	12	5.4	.....	.....	10s	.....	.....	3.16	80.3	Cloudy	
Nashville, Tennessee	29.88	758.9	30.20	767.1	53	11.7	86	E	8	3.6	.....	5c	Sm'e	SW	SE	0	0	Fair	
New Haven, Connecticut	29.48	748.8	30.19	766 8	45	7.2	100	Calm	0	0	.....	.....	Fog	.....	.....	0.06	1.5	Dense fog	
New London, Connecticut	30.13	765.3	30.17	766.3	56	13.3	87	E	1	0.4	.....	Haze	2s	.....	Calm	0	0	Fair	
New Orleans, Louisiana	30.01	762.2	30.26	768.6	50	10.0	85	N	3	1.3	.....	5c	Fg.sm'	W	N	0	0	Fair	
Newport, Rhode Island	29.27	743.4	30.35	770.9	47	8.3	76	W	2	0.9	.....	0	Sm'e	.....	.....	0	0	Clear	
New York, New York	24.64	609.4	30.00	762.0	23	— 5.0	100	NW	63	28.1	.....	.....	Fog	.....	NW	0.60	15.2	Foggy	
Norfolk, Virginia	29.75	755.6	30.31	769.9	43	6.1	91	E	1	0.4	.....	0	Fog	.....	Calm	0	0	Foggy	
North Platte, Nebraska	30.11	764.8	30.23	767.8	43	6.1	75	SW	4	1.8	.....	0	5s	.....	Calm	0	0	Fair	
Omaha, Nebraska	30.14	765.5	30.19	766.8	44	6.7	76	Calm	0	0	.....	0	2s	.....	S	0	0	Fair	
Olympia, Washington Ter.	29.93	760.2	29.99	761.7	62	16.7	88	E	24	10.7	.....	.....	10n	.....	NE	0.08	2.0	Light rain	
Oswego, New York	30.14	765.5	30.19	766.8	45	7.2	75	SW	6	2.7	.....	0	5ks	.....	W	0	0	Fair	
Pembina, Dakota	30.07	763.8	30.26	768.6	43	6.1	91	SW	12	5.4	.....	Haze	1s; fg	.....	Calm	Inap.	Inap	Clear	
Philadelphia, Pennsylvania	30.27	768.8	30.33	770 4	48	8.9	92	NE	4	1.8	.....	.....	10s; fg	.....	Calm	0.02	0.5	Cloudy	
Phœnix, Arizona	27.09	688.1	29.73	755.1	35	1.7	90	NE	6	2.7	.....	.....	10n	.....	Calm	0.13	3.3	Light rain	
Pike's Peak, Colorado	29.97	761.2	30.01	762.2	35	1.7	90	SE	4	1.8	.....	0	1s	.....	SE	0.26	6.6	Clear	
Pioche, Nevada	28.93	734 8	30.02	762.5	43	6.1	95	Calm	0	0	.....	.....	Fog	.....	Calm	0.68	17.3	Foggy	
Pittsburg, Pennsylvania	29.98	761.5	30.31	769.9	42	5.6	91	N	9	4.0	.....	.....	10s	.....	N	0.14	3.6	Cloudy	
Pembina, Dakota	29.28	743.7	30.16	766.1	22	— 5.6	86	SW	3	1.3	.....	.....	1s	.....	Calm	0	0	Cloudy	
Philadelphia, Pennsylvania	30.24	768.1	30.29	769.4	43	6.1	83	W	5	2.2	.....	5cs; k	Fog	W	Calm	0	0	Fair	
Phœnix, Arizona	.....	.....	.....	.....	48	8.9	93	Calm	.....	.....	.....	8k	2s	NW	Calm	0.01	0.3	Cloudy	
Pike's Peak, Colorado	17.63	447.8	29.84	757.9	6	—14.4	76	SW	2	0.9	.....	10cs	0	W	.....	0	0	Cloudy	
Pioche, Nevada	24.02	610.1	29.79	756.7	28	— 2.2	83	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Pittsburg, Pennsylvania	29.47	748.5	30.28	769.1	54	12.2	86	W	1	0.4	.....	.....	10s; fg	.....	Calm	Inap.	Inap.	Cloudy	
Port Huron, Michigan	29.62	752.3	30.31	769.9	45	7.2	92	NE	3	1.3	.....	.....	1 ks	.....	NE	0.03	0.08	Cloudy	
Portland, Maine	30.04	763.0	30.09	764.3	39	3.9	82	Calm	0	0	.....	5c; k	Fog	W	.....	0.07	1.8	Foggy	
Portland, Oregon	30.03	762.7	30.14	765.5	41	5.0	91	S	1	0.4	.....	.....	10s	.....	S	0.16	4.1	Cloudy	
Prescott, Arizona	24.76	628.9	30.12	765.0	28	— 2.2	88	NW	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Punta Rassa, Florida	30.09	764.3	30.10	764.5	63	17.2	78	NE	8	3.6	.....	1cs	2k	W	Calm	0	0	Clear	
Red Bluff, California	29.75	755.6	30.12	765.0	41	5.0	91	NW	4	1.8	.....	0	0	.....	.....	0	0	Clear	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	BAROMETER. Corrected for instrum'tal error and temperature. Inches.	BAROMETER. Corrected for instrum'tal error and temperature. Millimeters.	BAROMETER. Reduced to sea-level. Inches.	BAROMETER. Reduced to sea-level. Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Upper. From—	CLOUDS. Direction. Lower. From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	WEATHER.	OBSERVER.
Rochester, New York	29.66	753.4	30.29	769.4		8.3	92	N	6	9.7	.....	.....	10n;fg	.....	Calm	0.23	5.8	Light rain ...	
Roseburg, Oregon	29.53	750.0	30.11	764.8	45.5	7.5	100	E	2	0.9	.....	10k	Fog	SW	Calm	0.12	3.0	Cloudy.....	
Sacramento, California	30.03	762.7	30.12	765.0	47	8.3	92	NW	2	0.9	.....	10k	0	NW	.....	0	0	Cloudy.....	
St. Louis, Missouri	29.63	752.6	30.21	767.3	53	11.7	80	S	4	1.8	.....	0	0	.....	.....	0	0	Clear.....	
St. Marks, Florida	30.18	766.6	30.20	767.1	54	12.2	93	NE	7	3.1	.....	.....	10s	.....	Calm	0	0	Cloudy.....	
St. Paul, Minnesota	29.28	743.7	30.14	765.5	34	1.1	90	NW	3	1.3	.....	.....	Fog	.....	Calm	0.01	0.3	Foggy.....	
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salt Lake City, Utah	25.69	652.5	30.02	762.5	30	— 1.1	78	Calm	0	0	.....	.....	10s	.....	Calm	0	0	Cloudy.	
San Antonio, Texas	29.90	736.6	29.57	751.1	55	12.8	95	E	8	3.6	.....	.....	10s	.....	SE	2.57	65.3	Threatening	
San Diego, California	30.01	762.2	30.08	764.0	52	11.1	86	NE	2	0.9	.....	.....	10s	.....	W	0	0	Cloudy.....	
Sandusky, Ohio	29.61	752.1	30.29	769.4	55	12.8	87	S	6	2.7	.....	.....	10n	.....	W	0.19	4.8	Light rain...	
Sandy Hook, New Jersey	30.23	767.8	30.26	768.6	45	7.2	92	W	13	5.8	.....	2ck	Haze	W	.....	0.01	0.3	Fair	
San Francisco, California	30.06	763.5	30.13	765.3	50	10.0	93	N	6	2.7	.....	.....	Fog	.....	Calm	0	0	Foggy	
Santa Fé, New Mexico	23.15	588.0	29.69	754.1	31	— 0.6	73	NE	6	2.7	.....	.....	2cs	Haze	Calm	.....	0	0	Fair	
Savannah, Georgia	30.18	766.6	30.28	769.1	51	10.6	93	NE	6	2.7	.....	.....	10s	.....	NE	0	0	Cloudy.....	
Shreveport, Louisiana	29.75	755.6	29.97	761.2	60	15.6	82	E	10	4.5	.....	.....	10s	.....	E	Inap.	Inap.	Threatening	
Smithville, North Carolina	30.27	768.8	30.31	769.9	50	10.0	100	N	4	1.8	.....	.....	Fog	.....	Calm	0	0	Foggy	
Springfield, Massachusetts	30.00	762.0	30.13	765.3	42	5.6	74	Calm	0	0	.....	.....	10s	.....	SW	0.03	0.8	Cloudy.....	
Stockton, Texas	26.76	679.7	29.76	755.9	49	9.4	78	NW	16	7.2	.....	.....	10s	.....	NW	0.31	7.9	Cloudy	
Thatcher's Island, Mass	30.10	764.5	30.15	765.8	46	7.8	85	NW	16	7.2	.....	8cs;k	0	NW	.....	0	0	Fair	
Toledo, Ohio	29.59	751.6	30.26	768.6	55	12.8	93	Calm	0	0	.....	0	8s	....	NW	0.17	4.3	Cloudy.....	
Tucson, Arizona	27.57	700.3	30.12	765.0	37	2.8	54	E	.....	.....	.....	8k	0	E	.....	0	0	Fair	
Tybee Island, Georgia	30.22	767.6	30.25	768.3	53	11.7	93	NE	20	8.9	.....	.....	10ks	... .	NE	0	0	Cloudy	
Umatilla, Oregon	29.81	757.2	.....	.....	34	1.1	100	Calm	0	0	.....	.....	Fog	.....	Calm	0.03	0.8	Foggy	
Vicksburg, Mississippi	29.85	758.2	30.11	764.8	57	13.9	81	E	8	3.6	.....	10k	0	E	.....	0	0	Cloudy.....	
Virginia City, Montana	24.25	615.9	29.73	755.1	24	— 4.4	74	SE	4	1.8	.....	0	0	.....	.....	0	0	Clear.....	
Visalia, California	29.74	755.4	30.12	765.0	50	10.0	86	Calm	0	0	.....	.....	10s	.....	Calm	0	0	Cloudy.....	
Washington, D. C	30.21	767.3	30.33	770.4	38	3.3	100	NW	1	0.4	.....	2ck	Fog	N	SE	0	0	Fair	
Wickenburg, Arizona	.....	.....	.....	.....	33	0.6	71	NW	.....	.....	.....	0	2ks	.....	Calm	0	0	Fair	
Wilmington, N. Carolina	30.22	767.6	30.30	769.6	51	10.6	93	NE	5	2.2	.....	.....	Fog	.....	Calm	0	0	Dense fog....	
Winnemucca, Nevada	25.70	652.8	30.06	763.5	26	— 3.3	88	NE	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Wood's Holl, Mass	30.12	765.0	30.18	766.6	47	8.3	71	W	10	4.5	.....	5k	5s	NW	W	0	0	Cloudy.....	
Yankton, Dakota	28.81	731.8	30.15	765.8	32	0.0	89	N	4	1.8	.....	.....	10n	.....	Calm	0.11	2.8	Light rain...	
Yuma, Arizona	29.89	759.2	30.08	764.0	47	8.3	85	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.....	
SUB-SERIES.																			
York Factory, B. A	30.16	766.1	30.21	767.3	1.0	—17.2	86	S	10	4.5	..... .	0	0	.....	.....	0	6	Clear.....	J. Fortescue, W. Wood.
Havana, Cuba, W. I	30.00	762.0	30.02	762.5	71	21.7	85	Calm	0	0	.....	2c	0	NW	.....	0	0	Fair.....	Chas. Hasselbrink.
Kingston, Jamaica, W. I	30.04	763.0	30.05	763.3	75	23.9	90	Calm	0	0	....	2c	2s	Calm	E	0	0	.....	James Gall.
Navassa, W. I	29.85	758.2	29.93	760.2	77.5	25.3	.....	NE	10	4.5	.....	.....	.....	.....	.....	0.12	3.0	Cloudy.....	F. M Everett.
St. Thomas, W. I	.....	.....	.....	.....	80	26.7	.....	E	3	1.3	.....	2c	2k	E	.....	0	0	.....	G. O. Gellich.
Paramaribo, D. Guiana, S. A	.....	.....	29.92	760.0	82	27.8	78	E	.....	.....	2	5k	0	E	.....	0	0	Fair	C. J. Hering.
Batavia, Dutch Guiana, S. A	29.97	761.2	29.98	761.4	84.2	29	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0	Cloudy.....	Dr. H. Groot.
Medellin, Colombia, S. A	25.13	638.3	.....	.....	68.0	20.0	82	Calm	.....	.....	0	2k	3ks	.....	.....	0.60	15.2	Fair	Thomas Herran.
Honolulu, Oahu, H. I	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Daniel Smith.
Makawao, Maui, H. I	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo; for Batavia, the barometer reduced to freezing but not to sea-level. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,893 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Deadwood, (?); Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.8 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,160.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft. or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.67 in.; Cheyenne, 5.94 in.; Denver, 5,22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.: Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation

STATIONS AND VESSELS.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard Mare Island, Cal.	30.18	766.6	46	7.8	43	6.1	100	NW	2	0 9	.....	.....	2s	.....	Calm	0	0	.....	.....	Clear	
Navy Yard, Pensacola, Fla.	30.28	769.1	.....	.....	59	15.0	94	NE	12	5.4	.....	.....	10	.....	.....	0.02	0.5	.....	.....	D. clouds.....	
Navy Yard, Portsmouth, N.H	30.16	766.1	68	20.0	40	4.4	91	WNW	.....	.....	1	.....	.....	.....	.....	0	0	.....	.....	Clear.....	
Naval Hospital, Yokohama, Japan.....	29.89	759.2	51	10.6	44	6.7	84	NE	.....	.....	2	.....	4ck	.....	E	0	0	.....	.....	Fair.....	
Alliance, Smyrna, Turkey.....	29.98	761.5	63	17 2	61	16.1	61	ENE	.....	.....	0-1	.....	4	.....	E	.....	.....	.....	.....	Pleasant.....	
Ashuelot. Shanghai, China.....	30.58	776.7	45	7.2	37	2.8	100	NW	.....	.....	2-3	.....	10	.....	Calm	.....	.....	.....	.....	Raining.....	
Canonicus, New Orleans, La.....	30.01	762.2	48	8.9	62	16.7	88	ESE	.....	.....	4	.....	.....	.....	.....	.....	.....	.....	.....	Cloudy.....	
Colorado, New York, N. Y.....	30.26	768.6	45	7.2	44	6.7	92	WSW	5	2.2	.....	.....	4	.....	WSW	0	0	.....	.....	Light fog.....	
Despatch, Constantinople, Turkey.	30.06	763.5	67	19.4	55	12.8	80	NE	.....	.....	2	.....	10	.....	NE	.....	.....	.....	.....	Showery.....	
Essex, St. Paul de Loanda, Lower Guinea.	29.75	755.6	83	28.3	85	29.4	87	W	.....	.....	3	.....	10	.....	.....	.....	.....	Smooth	.....	Overcast.....	
Franklin, Norfolk, Va.....	30.43	772.9	69	20.6	57	13.9	57	NE	2	0.9	.....	.....	10	.....	NE	0	0	.....	.....	Overcast.....	
Guard, Lisbon, Portugal.....	30.23	767.8	59	15.0	55	12.8	62	NNE	.....	.....	3	.....	0	.....	.....	.....	.....	.....	.....	Hazy.....	
Lackawana, Mare Island, Cal.....	30.16	766.1	.....	.....	50	10.0	86	Calm	.....	.....	0	.....	2	.....	.....	.....	.....	.....	.....	D. clouds.....	
Marion, Villefranche, France.....	30.17	766.3	57	13.9	47	8.3	77	ENE	.....	.....	3	.....	10	.....	.....	0	0	Smooth	S	D. clouds.....	
Michigan, Erie, Pa.....	29.73	755.1	64	17.8	48	8.9	85	Calm	.....	.....	0	.....	5	.....	NW	.....	.....	.....	.....	Fair.....	
Monocacy, Hong-Kong, China.....	30.09	764.3	69	20.6	62	16.7	100	N&E	.....	.....	1	.....	10	.....	S	.....	.....	.....	.....	Drizzling.....	
New Hampshire, Port Royal, S.C.....	30.40	772.1	.....	.....	52	11.1	100	NE	12	5.4	.....	.....	10	.....	.....	0	0	.....	.....	Foggy	
Omaha, Valparaiso, Chili.....	29.96	761.0	65	18.3	63	17.2	78	E	1	0.4	.....	.....	2	.....	S	0	0	.....	.....	Pleasant.....	
Onward, Callao, Peru.....	29.92†	760.0†	78	25.6	76	24.4	86	SE	.....	.....	2	.....	10	.....	.....	.....	.....	Long	W	D. clouds.....	
Osceola, Norfolk, Va.....	30.40	772.1	75	23.9	52	11.1	86	NNE	.....	.....	1	.....	10	.....	Calm	.....	.....	.....	.....	Misty.....	
Palos, Shanghai, China.....	30.57	776.5	47	8.3	37	2.8	100	N	.....	.....	4	.....	10	.....	N	.....	.....	.....	.....	Rainy.....	
Plymouth, Off Aspinwall.....	29.88	758.9	92	33.3	84	28.9	100	NNE	.....	.....	3	.....	4	.....	NE	.....	.....	Smooth	NE	Clear	
Powhatan, Norfolk, Va.....	.....	.....	.....	.....	51	10.6	93	NNE	2.4	1.1	.....	.....	10	.....	.....	0	0	.....	.....	Overcast.....	
Ranger, Shanghai, China.....	30.67	779.0	.....	.....	44	6.7	84	NNW	.....	.....	3	.....	10	.....	NW	.....	.....	.....	.....	Drizzling.....	
Rio Bravo, Brownsville, Texas.....	29.63	752.6	.....	.....	70	21.1	95	SW	.....	.....	4	.....	10	.....	SSW	.....	.....	.....	.....	D. clouds.....	
Santee, Annapolis, Md.....	30.38	771.6	57	13.9	41	5.0	91	NW	.....	.....	1	.....	8	.....	NW	0	0	.....	.....	Hazy.....	
Saratoga, Norfolk, Va.....	.....	.....	.....	.....	49	9.4	100	Calm	.....	.....	0	.....	10	.....	.....	Light	Light	.....	.....	Overcast.....	
St. Louis, League Island, Pa	30.17	766.3	40	4.4	39	3.9	100	WSW	4	1.8	.....	.....	6	.....	W	0	0	.....	.....	Clear.....	
Swatara, Norfolk, Va.....	30.34	770.6	.....	.....	60	15.6	76	NNE	.....	.....	1	.....	10	.....	N&E	.....	.....	.....	.....	D clouds.....	
Tennessee, Shanghai, China	30.57	776.5	70	21.1	45	7.2	100	N	.....	.....	3	.....	10	.....	N	0.35	8.9	.....	.....	D. clouds.....	
Trenton, Villefranche, France.....	30.21	767.3	.....	.....	51	10.6	41	Var.	3	1.3	.....	.....	7	.....	S&E	0	0	.....	.....	D. clouds.....	
Vandalia, Naples, Italy.....	30.04	763.0	58	14.4	46	7.8	54	N	.....	.....	2	.....	1	.....	Calm	.....	.....	.....	.....	D. clouds.....	
Wabash, Boston, Mass.....	30.19	766.8	58	14.4	48	8.9	78	WNW	7	3.1	.....	.....	7	.....	N&W	0	0	.....	.....	D. clouds.....	
Wyoming, Washington, D. C.....	30.69†	779.5†	.....	.....	43	6.1	.....	Calm	.....	.....	0	.....	2	.....	.....	.....	.....	.....	.....	D. clouds.....	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. The position given for the Plymouth is that at noon, local time, instead of that at 7:35 a. m., Washington time.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.	Character.	Direction from—		
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—				
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama, Victoria, B. C.			29.95*	760.7*	47	8.3		SSE			6		0					Clear.	Capt. Seabury.
S. S. City of Peking, N. 30° 12′, E. 165° 29′			30.29*	769.4*	70	21.1	100	ENE			2		6		W	Small	NW	Showery...	Lt. Z. L. Tanner, U.S.N.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio, Hong-Kong, China			30.00	764.3	64	17.8		E			4		6		ENE			D. clouds	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

NOTE.—The originals give the wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. *Aneroid.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.

S. S. Belgic																			Capt. John Metcalf.
S. S. Gaelic, Hong-Kong, China			30.03†	764.0†	67	19.4	89	NE			5		8					D. clouds	Capt. W. H. Kidley
S. S. Oceanic, N. 34° 55′, W. 130° 28′			29.97	761.2	60	15.6	82	SW			1		3		SW	Confused	W	D. clouds	Capt. H. Parsell.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. †Aneroid.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig, N. 49° 49′, W. 5° 22′			30.66	778.7	51.0	10.6	??	SE			2		10		SE	Smooth		Misty	Capt. Undütsch.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds.

UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Lo'wr	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second	0—10.	0—10.	0—10.	From—	From—	Character.	Direction From—		
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, Philadelphia, Pa			30.35*	770.9*	53	11.7	86	SW			3		8		NW			Fine	Captain Sargent.
S. S. Ohio, Liverpool			30.65	778.5	47	8.3	85	SW			1		4		Calm			Hazy	Captain Morrison.
S. S. Pennsylvania, N. 45° 10′, W. 52° 19′			30.14†	765.5†	34	1.1	??	N			1		8		SW	Smooth	NEtoN	Overcast	Captain Harris.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. * Aneroid † Corrected for temperature and elevation, instrumental error not known.

RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

S. S. Nederland																			Capt. Randle.
S. S. Switzerland, N. 50° 26′, W. 2°			30.64*	778.2*				Calm	0	0			10		SE	Smooth		Hazy	Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

*Aneroid: regulated to standard at Antwerp.

ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

S. S. Hibernian																			Capt. W. Richardson.
S. S. Scandinavian, N. 39° 21′, W. 68° 40′			30.27	768.8	54	12.2		NW			4		2		NW	Mod'ate	NW	D. clouds	

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, Boothbay, Maine			30.15	765.8	36	2.2	90	Calm	0	0			8ck;s		Calm			Cloudy	Capt. James Jorgensen.

NOTE.—The originals for the schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg'd.) Chief Signal Officer. U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON DECEMBER 21, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSÉ mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:58 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:18 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Barometer: Corrected for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours			30.25	768.4	57.2	14.0	47	Calm			0		2			0	0	Fair	Michel.
Algiers			30.18	766.6	51.1	10.6	74	NE			2		9			1.138	28.9	Covered	Peter.
La Calle			30.14	765.5	50.5	10.3	76	W			3		8			0.197	5.0	Very cloudy	Fleury.
Tunis			30.07	763.7	53.8	12.1	67	W			3		8			0	0	Very cloudy	Jacques.
Sfax			30.17	766.2	50.0	10.0		SW			2		1			0	0	Very fair	Husson.
Saida			30.15	765.9	41.7	5.4	91	NNE			1		6			0	0	Cloudy,	Millot.
Tebessa																			Bassières.
Geriville			30.12	765.0	37.8	3.2	90	NE			5		6			0	0	Cloudy	Lemaillot.
Laghouat			30.16	766.0	48.2	9.0	61	NW			2		0			0	0	Clear	Guyot.
Biskra			30.17	766.3	60.3	15.7	30	NE			1		0			0	0	Clear	Kuntz.

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m.; or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

Agram	29.97	761.1	30.57	776.4	22.6	— 5.2	83	NE			2		10			0	0		Prof. Ivan Stozir
Cracow, I. R. Observatory	29.82	757.3	30.67	779.0	12.9	—10.6	100	NE			3		7			0	0		Dr. Wierzbiski.
Eperies	29.55	750.5	30.51	774.9	20.1	— 6.6	76	N			2		10s		Calm	0	0		Julius Mikolik.
Gratz	29.19	741.3	30.54	775.8	21.2	— 6.0	87	SSE			1		10			0.008	0.2		Andreas Rospini.
Hermannstadt	28.89	733.9	30.43	772.9	25.5	— 3.6	89	NE			1		10			0.059	1.50		Prof. Reissenberger.
Kremsmünster	29.10	739.1	30.56	776.2	21.9	— 5.6	85	E			2		10			0	0		Prof. C. Wagner.
Lemberg	29.50	749.4	30.60	777.3	13.8	—10.1	97	NE			1		10			0	0		Dr. T. Stanecki.
Pola	30.15	765.8	30.27	768.8	36.7	2.6	55	NNE			4		8cs			Inap.	Inap.		I.R.Hydrographic Office.
Szathmar	29.98	761.5	30.48	774.2	27.1	— 2.7	94	SW			2		10			0	0		Johann Tamas, S. J.
Szegedin	30.17	766.2	30.47	773.9	24.4	— 4.2	86	N			1		10			0	0		Karl Stancel.
Trieste	30.25	768.3	30.35	770.9	33.1	0.6	71	ENE			2		2			0	0		P. Busin.
Vienna	29.82	757.4	30.59	776.9	17.6	— 8.0	77	N			1		4			0	0		I. R. Central Met. Obs'y.

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 388.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

Arlon	28.97	735.7	30.59	776.8	23.7	— 4.6	88	N			1		10			0	0	Foggy	Prof. M. Passau.
Brussels	30.34	770.7	30.56	776.2	29.3	— 1.5	95	E			1		10			0	0	Foggy	Royal Observatory.
Furnes	30.53	775.4	30.55	776.0	31.6	— 0.2	100	SSE			2		10			0	0		M. E. de Cae.
Maeseyck	30.43	773.0	30.56	776.3	27.7	— 2.4	96	SE			0		10			0	0		M. Pierrot.

NOTE.—*In the originals, the weather is occasionally given by the Vienna symbols.* Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	30.14	765.5	30.24	768.1	39.7	4.3	.....	SSW	4	1.8	.....	.....	7	.....	.....	0	0	Misty	W. Boswell.
Ardrossan	30.30	769.6	30.31	769.9	49	9.4	.....	S	.....	.....	3	.....	5	.....	.....	.....	.....	Raining	William McNeil.
Armagh, Observatory	.....	.....	30.33	770.4	48.5	9.2	.....	SSW	10	4.5	.....	.....	10	.....	.....	.....	.....	Overcast	S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)	.....	.....	30.44	773.2	48.7	9.3	.....	W	2	0.9	.....	.....	10	.....	.....	.....	.....	Overcast	John Hartnup.
Birr Castle, (Parsonstown)	.....	.....	30.45	773.4	50.1	10.1	.....	SW	.....	.....	2	.....	10	.....	.....	.....	.....	Overcast	J. Dreyer.
Bradford, Yorkshire	29.98	761.5	30.38	771.6	48.5	9.2	.....	N	.....	.....	0	.....	10	.....	.....	.....	.....	Overcast	J. McLandsborough.
Bridgetown, (Barbados)	29.91	759.7	29.94	760.5	80.5	26.9	.....	N	.....	.....	2	.....	4	.....	.....	0.06	1.5	Overcast	D. clouds. Pvt. G. W. Roberts, A.
Cambridge, Observatory	.....	.....	30.47	773.9	45.1	7.3	.....	SW	.....	.....	1	.....	10	.....	.....	.....	.....	Drizzling	H. Todd. [H. C.
Cardington	.....	.....	30.49	774.4	45.0	7.2	.....	SW	.....	.....	1	.....	10	.....	.....	.....	.....	Foggy	John McLaren.
Chatham, School M. E.	30.33	770.4	30.47	773.9	43.2	6.2	.....	W	.....	.....	1	.....	10	.....	.....	.....	.....	Overcast	Lt. W. G. Morris, R. E.
Dartmoor	29.00	736.6	30.52	775.2	44.4	6.9	.....	W	.....	.....	2	.....	10	.....	.....	.....	.....	Foggy	Alexander Watt.
Davos Platz (Switzerland)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Francis Redford, M. A.
Donaghadee	30.28	769.1	30.31	769.9	46	7.8	.....	WSW	.....	.....	3	.....	10	.....	.....	.....	.....	Overcast	J. Mac Gowan.
Dover	30.48	774.2	30.51	774.9	43	6.1	.....	SSW	.....	.....	2	.....	6	.....	.....	.....	.....	Gloomy	J. Costello.
Eccles, (near Manchester)	.....	.....	30.41	772.4	45.0	7.2	.....	NW	.....	.....	.....	.....	10	.....	.....	.....	.....	Rain and fog	Thomas Mackereth.
Falmouth, Observatory	30.29	769.4	30.53	775.4	50.3	10.2	.....	WNW	.....	.....	1	.....	9	.....	.....	.....	.....	Overcast	The Staff.
Fort Napier, (Natal)	27.37	695.2	29.57	751.1	82.0	27.8	.....	E	.....	.....	3	.....	10	.....	.....	.....	.....	Overcast	Pvt. G. Salmon, A. H. C
Free Town, (Sierra Leone)	.....	.....	29.91	759.7	86	30.0	.....	Calm?	.....	.....	1?	.....	3	.....	.....	.....	.....	D. clouds	
Galway, Queen's College	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	30.11	764.8	30.17	766.3	55.9	13.3	.....	E	.....	.....	6	.....	8	.....	.....	.....	.....	Gloomy	Corpl. C. Aitken, A.H.C.
Glasgow, Observatory	30.08	764.0	30.29	769.4	48.0	8.9	.....	SSW	.....	.....	3	.....	.....	.....	.....	.....	.....	Drizzling	D. G. Maclean.
Great Yarmouth	30.46	773.7	30.47	773.9	41	5.0	.....	SW	.....	.....	2	.....	6	.....	.....	.....	.....	Foggy	G. T. Watson.
Greenwich, Royal Obs'y	30.30	769.6	30.48	774.2	48.0	6.1	.....	WSW	.....	.....	1	.....	10	.....	.....	.....	.....	Raining	The Staff, for G. B. Airy.
Guernsey	30.28	769.1	30.50	774.7	49.5	9.7	.....	WNW	.....	.....	1	.....	8	.....	.....	.....	.....	D. clouds	Dr. S. E. Hoskins, F.R.S.
Helston	.....	.....	30.53	775.4	51	10.6	.....	N	.....	.....	0	.....	6k	.....	.....	0.09	2.3	Fine	M. P. Moyle.
Holyhead	30.39	771.9	30.44	773.2	49	9.4	.....	SSW	.....	.....	2	.....	10	.....	.....	.....	.....	Misty	John Tilston.
Jersey	30.26	768.6	30.56	776.2	47.4	8.6	.....	W	.....	.....	1	.....	10	.....	.....	Blank	Blank	Overcast	J. Fisher.
Kew, Observatory	.....	.....	30.49	774.4	43.5	6.4	.....	NNW	.....	.....	3	.....	10	.....	.....	.....	.....	Rain and fog	The Staff.
Kingstown	30.42	772.7	30.44	773.2	49	9.4	.....	SSW	.....	.....	1	.....	9	.....	.....	.....	.....	Foggy	George Mitchell.
Leicester, Museum	.....	.....	30.47	773.9	44.5	6.9	.....	W	.....	.....	1	.....	10	.....	.....	.....	.....	Overcast	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	30.01	762.2	30.09	764.3	52.0	11.1	.....	S	.....	.....	1	.....	6	.....	.....	.....	.....	D. clouds	Sgt. Fred. Travis, A. H.
Nairn	30.10	764.5	30.19	766.8	45	7.2	.....	Calm	.....	.....	0	.....	8	.....	.....	.....	.....	¾ clouded	W. D. Penny. [O.
Nassau, (Bahamas)	.....	.....	30.04	763.0	72.8	22.7	.....	NE	.....	.....	1	.....	0	.....	.....	.....	.....	Blue sky	C. S. Duncombe.
Nottingham, Observatory	30.26	768.6	30.46	773.7	46.2	7.9	.....	Calm	.....	.....	0	.....	10k;s	.....	Calm	0.067	1.70	Overcast	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.92	760.0	30.46	773.7	45.0	7.2	.....	Calm	.....	.....	0	.....	10	.....	.....	.....	.....	Dense fog	Rev. Stephen Whitty
Oxford, Radcliffe Obs'y	.....	.....	30.47	773.9	47	8.3	.....	Calm	.....	.....	0	.....	10	.....	.....	.....	.....	Overcast	Mr. Lucas.
Plymouth	30.44	773.2	30.51	774.9	48.5	9.1	.....	Calm	.....	.....	0	.....	10	.....	.....	.....	.....	Misty	John Merrifield.
Roche's Point	30.44	773.2	30.49	774.4	51	10.6	.....	W	.....	.....	3	.....	8	.....	.....	.....	.....	Hazy	W. Kennedy.
Saint Ann's Head	.....	.....	30.48	774.2	50	10.0	.....	WNW	.....	.....	1	.....	10	.....	.....	.....	.....	Misty	John C. Walker.
Sandwick Manse, (Orkneys.)	.....	.....	30.14	765.5	44	6.7	.....	WSW	20	8.9	.....	.....	10	.....	.....	.....	.....	Misty	Rev. C. Clouston, LL. D
Scutari, Cemetery, (Turkey)	.....	.....	30.09	764.3	44.0	6.7	.....	NNE	.....	.....	3	.....	10	.....	.....	.....	.....	Raining	Sergt. W. H. Lyne.
Sheffield	30.16	766.1	30.45	773.4	49.0	9.4	.....	SW	.....	.....	1	.....	6	.....	.....	Inap.	Inap.	D. clouds	W. F. Cooper.
Silloth Rectory	30.33	770.4	30.36	771.1	48.0	8.9	97	W	.....	.....	2	.....	10	.....	.....	0.080	2.03	Overcast	Rev. F. Redford, M. A.
Stonyhurst, Observatory	.....	.....	.....	.....	46.4	8.0	.....	W	.....	.....	1	.....	.....	.....	.....	.....	.....	Foggy	Rev. S. J. Perry.
Stornoway, Lews C., (Hebr.)	.....	.....	30.12	765.0	44	6.7	.....	SW	.....	.....	3	.....	10	.....	.....	.....	.....	Overcast	John Smith.
Stratfield Turgiss	30.27	768.8	30.50	774.7	45.1	7.3	.....	SW	.....	.....	1	.....	10	.....	.....	.....	.....	Showery	Rev. C. H. Griffith, F.M.S
Thurso	.....	.....	30.15	765.8	41	5.0	.....	S	.....	.....	1	.....	8	.....	.....	.....	.....	Gloomy	John Trotter.
Truro, Royal Institution	.....	.....	30.49	774.4	52	11.1	.....	NW	.....	.....	4	.....	10	.....	.....	.....	.....	Raining	W. Newcombe.
Valencia, Observatory	.....	.....	30.48	774.2	51.4	10.8	.....	SW	13	5.8	.....	.....	10	.....	.....	.....	.....	Drizzling	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Henry Mercer.
Cape Good Hope, Obs'y	29.90	759.4	29.94	760.5	71.0	21.7	46	SSE	12	5.4	.....	3	6	.....	.....	.....	.....	.....	The Staff, for E. J. Stone.
Hobart Town, (Tasmania)	.....	.....	29.92	760.0	60.0	15.6	88	S	.....	.....	2	.....	10kn	.....	.....	0	0	Covered	Francis Abbott, F.R.A.S.
Leith, Restalrig Park	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Andrew Gibb.
Mauritius, Observatory	29.83	757.7	30.01	762.4	82.2	27.9	67	SE	17.5	7.8	.....	8	6	WNW	ESE	0	0	Squally	C. Meldrum.
Melbourne, Observatory	29.80	756.9	29.89	759.2	64.5	18.1	71	SE	3	1.3	.....	.....	4	.....	.....	0	0	Fine	R. L. J. Ellery.
Monach L't-house, (Hebrides)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Youngclause.
North Unst, (Shetland Is.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Robert Burnet.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m.

MARINE SERIES.

VESSELS.

	Sea or swell. Height scale 0—9	Sea or swell. Direction from—		
S. S. Algeria, N. 40° 30', W. 62° 50'	20*	N	Snowing	Capt. W. Watson.
S. S. Batavia	.....	.....	.....	Capt. J. E. Mouland.
Ship Camperdown	.....	.....	.....	Capt. A. T. Miller.
Brig Catherine	.....	.....	.....	Capt. Adam Smith.
Barque Celeste	.....	.....	.....	Capt. D. F. McKechnie.
S. S. Hibernia	.....	.....	.....	Capt. W. R. Cato
Barque Maroon	.....	.....	.....	Capt. A. T. Brown.
Ship Mikado	.....	.....	.....	Capt. C. C. Prehn.
Royal Alice, N. 41° 20', W. 56° 20'	7	N	Squally	Capt. E. M. Hughes.
S. S. Seine	.....	.....	.....	Capt. H. Manning.
Barque Sorata	.....	.....	.....	Capt. Jas. J. Price.
Schooner Traveller	.....	.....	.....	Capt. Alex Simpson.
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbence by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. *Feet.

Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Señor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	BAROMETER. Corrected for instrum'tal error and temperature. Inches.	BAROMETER. Corrected for instrum'tal error and temperature. Millimeters.	BAROMETER. Reduced to sea-level. Inches.	BAROMETER. Reduced to sea-level. Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Upper. From—	CLOUDS. Direction. Lower. From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	WEATHER.	OBSERVER.
San José	26.17	664.7			67.6	19.8	95	NE			1	1clk	7s			0.05	1.3		Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	30.58	776.8	30.59	777.0	30.7	— 0.7	85	SSW			4		10					Foggy	
Fanöe	30.48	774.3	30.50	774.8	32.4	0.2	90	S			4		10						
Godthaab, (Greenland)	29.81	757.1	29.85	758.2	17.8	— 7.9		SW			7		10					Snowing	
Stykkisholm, (Iceland)	29.30	744.2	29.34	745.3	24.3	— 4.3	93	SW			6		8						
Thorshavn, (Farõe)	29.68	753.8	29.71	754.7	43.7	6.5	87	WSW			6		10						
Vestervig	30.26	768.7	30.43	773.0	34.9	1.6	96	S			4		10					Raining	

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

Alençon, Normal School	30.03	762.8	30.58	776.8	42.8	6	43	N			1		10			0	0	Covered	Collignon, Director.
Amiens, Normal School	30.43	772.8	30.54	775.8	30.2	— 1	96	NNE			3		10			0	0	Covered	Bonvarne, Director.
Avignon, Normal School	30.22	767.6	30.30	769.6	37.0	2.8	52	NNW			6		0			0	0	Very clear	Mr. Giraud, Director
Bar-sur-Seine	29.94	760.4	30.55	775.9	27.9	— 2.3	95	NE			2		10			0	0	Covered	C. Saillard.
Beaumette Obs'y (Angers)	30.37	771.5	30.55	776.0	33.1	0.6	96	E	0	0					NE	0	0		Albert Cheux.
Beauvais	30.27	768.8	30.58	776.6	34.5	1.4	76	ESE			1		10			0	0	Covered	Normal School.
Besançon	29.56	750.8	30.51	775.0	30.6	— 0.8		ENE			3		2		N	0	0	Slightly cl'dy	Normal School.
Bourg-en-Bresse	29.60	751.9	30.52	775.3	36.1	2.3	88	N			2		10n		N	0	0	Covered	Normal School.
Bourges, Normal School	29.93	760.2	30.52	775.2	31.5	— 0.3	96	N			2		5		N	0	0	Cloudy	A. Wagner, Director.
Brest, Naval Observatory	30.26	768.5	30.48	774.1	48.7	9.3	84	NNW			1		9		NNW	0.020	0.50	Misty	The Staff.
Carcassonne, Normal School	30.03	762.8	30.47	773.9	35.6	2	85	W			4		2			0	0	Slightly cl'dy	Vateau, Director.
Caen	30.47	773.9	30.54	775.8	42.8	6	85	N			2		8		N	0	0	Very cloudy	Normal School.
Chartres, Normal School	29.94	760.5	30.54	775.8	36.5	2.5		NE			2		10			0	0	Covered	Lequin, Director.
Châlons-sur-Marne, N. Sch'l	30.21	767.4	30.56	776.1	29.3	— 1.5		S			2		10n			0	0	Covered	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	29.05	737.8	30.50	774.7	28.0	— 2.2	87	N			1		10		N	0	0	Covered	Alluard, Director.
Commercy, Normal School	29.60	751.9	30.54	775.8	28.0	— 2.2	78	E			4		10		E	0	0	Covered	Dr. Goulet, Director.
Commune de Gréasque*	29.10	739.2	30.24	768.2	43.5	6.4	56	N			2		2		N	0.012	0.3	¼ covered	M. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	30.35	770.8	30.58	776.7	32.0	0.0	97	N			1		10			0	0	Covered	Mouillot, Director.
Le Mans, Normal School	30.29	769.4	30.62	777.8	31.3	— 0.4	58	E			2		10			0	0	Covered	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.49	749.1	30.47	774.0	28.9	— 1.7	61	NE			6		2		SW	0	0	Slightly cl'dy	Voudez, Director.
Lorient, Naval Observatory	30.46	773.7	30.56	776.2	51.4	10.8	77	W			1		10			0.024	0.6	Covered	T. Carré, Director.
Mâcon, Normal School	29.74	755.3	30.43	772.9	28.8	— 1.8		NNE			6		10			0	0	Covered	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	29.39	746.6	30.52	775.2	27.5	— 2.5	74	NW			4		10		S	0	0	Covered	Normal School.
Nismes, Normal School	30.09	764.3	30.31	769.8	38.5	3.6	76	N			6		0			0	0	Clear.	Boyer, Director.
Orleans, Normal School	30.16	766.1	30.56	776.3	36.3	2.4	99	N			2		0			0	0	Clear.	Bernard, Director.
Paris, Observatory	30.30	769.7	30.57	776.4	28.9	— 1.7	88	ESE			1		10			0	0	Foggy	National Observatory.
Privas	29.29	744.0	30.41	772.4	39.2	4	57	N			4		10		N	0	0	Covered	Normal School
Rochefort, Naval Obs'y	30.54	775.7	30.57	776.5	35.6	2.0	89	NNE			3		10		SSW	0	0	Covered	Lt. Decante, Director.
Rouen, Normal School	30.48	774.1	30.56	776.3	30.7	— 0.7	91	NW			1		10			0	0	Covered	F. Lucard, Director.
Tarbes, Normal School	29.28	743.8	30.43	772.8	34.5	1.4	98	SW			2		2		W	0	0	Slightly cl'dy	T. Hugues, Director.
Villefranche	29.78	756.5	30.55	776.0	28.4	— 2	96	NE			2		10		N	0	0	Covered	Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.72	754.8	29.74	755.5	78.8	26										0.08	2.		L'Abbé Marchési.
Marseilles, Observatory			30.21	767.2	44.1	6.7	70	NW			1		0			0	0		The Staff.
Mont-Louis	24.97	634.3	30.29	769.3	30.4	— 0.9	40	NNE	18.6	8.33			4		N	0.008	0.2		Mr. Falguère.
Nice			30.20	767.0	50.0	10.0	51	NE			2		5			0	0	Cloudy	Dr. A. Niepce.
Paris, Montsouris Obs'y	30.26	768.5	30.53	775.5	27.5	— 2.5	94	N			1		10			Inap.	Inap.	Foggy	Marié Davy, Director.
Perpignan			30.31	769.8	42.8	6.0	56	NW	33.6	15.00			0			0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.	21.39	543.2			16.7	— 8.5		N			3		1					Clear	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.61	574.3			21.2	— 6.0		N			3		1			0	0	Clear	Gen'l de Nansouty.
Saint Maur, (near Paris)	30.38	771.7	30.55	775.9	29.3	— 1.5	85	NE			1		10			0	0	Covered	E. Renou.
Toulouse, Observatory	29.76	755.8	30.51	774.9	31.6	— 0.2	85	NW			4		9			0	0		The Staff.
Tours	30.31	770.5	30.53	775.5	32.0	0.0	84	ENE			1		7		ENE	0	0		C. Marquet.
Versailles, (near Paris)			30.52	775.3	28.4	— 2.0	96	NE			1		10			0	0	Foggy	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.63	777.9	30.65	778.6	34.2	1.2	73	NW	9.6	4.3			10kn			0	0	Covered	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published. At Mirecourt and Rochefort the cloud directions are apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10	Clouds. Amount. Up'er 0-10	Clouds. Amount. Low'r 0-10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg																			
Berlin	30.49	774.4	30.67	779.0	25.9	— 3.4	70	SE			1		10			0	0		Prof. Dr. Hoh.
Breslau	30.13	765.2	30.67	779.0	15.6	— 9.1	77	ESE			1		1			0	0		Prof. Arndt.
Carlsruhe	29.71?	754.5?	30.16?	766.0?	28.4	— 2.0	81	NE			1		10			0	0		Royal University Obs'y.
Cassel	30.03	762.8	30.65	778.5	27.5	— 2.5	80	E			1		8	NE		0	0		Albert Senz.
Crefeld	30.39	771.9	30.56	776.1	28.8	— 1.8	80	SE			3		10			0	0		Dr. H. Möhl.
Emden	30.71	780.1	30.75	781.0	28.6	— 1.9	78	S			3		10			0	0		Director Lose.
Frankfort on the Main	30.23	767.9	30.63	778.0	27.0	— 2.8		NNE			2		10			0	0		Prof. Prestel.
Friedrichshafen	29.11	739.4	30.57	776.4	23.4	— 4.8	88	ESE			5		8	E		0	0		Physical Society.
Hamburg	30.53	775.5	30.61	777.5	27.0	— 2.8	83	S			5		10			0	0		M. Wilhelm.
Kiel	30.60	777.1	30.61	777.5	29.5	— 1.4	75	SSE			2		10			0	0	Cloudy	Captain F. Hegemann.
Königsberg, (Prussia)	30.63	778.0	30.71	780.0	21.6	— 5.8	85	SE								0	0		Prof. G. Karsten.
Köslin			30.65	778.5	29.3	— 1.5		Calm			0		4			0	0	Cloudy	Prof. E. Luther.
Leipsic, Observatory	30.25	768.3	30.71	780.0	21.7	— 5.7	80	E			1		8						H. Müller.
Memel, Naval School	30.67	779.1	30.72	780.3	20.7	— 6.3	84	SSE			4		10cs;ks			0	0		Prof. Bruhns.
Neufahrwasser	30.68	779.3	30.70	779.7	27.1	— 2.7	85	S			2		10			0	0		Reinbrech von Skalweit.
Posen	30.41	772.4	30.72	780.3	21.9	— 5.6	84	SE			5					0	0		A. Lothes.
Strassburg Obs., (in Alsace	29.98	761.4	30.57	776.4	30.2	— 1.0	69	NE			2		10			0	0	Covered	Dr. Magener.
Stuttgart	29.54	750.3	30.55	776.0	27.1	— 2.7	68	E			1		10			0	0		Dr. Schur.
Treves, (Trier)	29.91	759.8	30.45	773.3	29.3	— 1.5	80	NE			1		10			0	0		Prof. Schoder.
Weissenburg, (Bavaria)	28.96	735.6	30.60	777.2	23.7	— 4.6	93	E	1	0.5			10			0	0	Foggy	Prof. Flesch.
Wustrow, Naval School	30.67	779.0	30.71	780.0	28.2	— 2.1	82	S			3		10			0	0	Covered	Dr. Von Bebber.
German Naval Series.																		Covered	E. F. Schütz.

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4. Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines, Königsberg, Posen and Wustrow in cubic zolls. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.65	753.2	30.06	763.4	48.0	8.9		NE			1							Cloudy	Dr. J. F. J. Schmidt.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and wind-force; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.99	761.8	30.04	763.1	70.2	21.2	61	W	10.0?	4.5?			7		WSW	0	0		D. clouds.
Deesa	29.54	750.3	30.02	762.5	80.7	27.1	67	N					8	SW		0	0		D. clouds.
Bombay	29.90	759.6	29.94	760.5	81.8	27.7	80	WNW	10.0	4.5			1	SW		0	0		D. clouds.
Poona	27.96	710.2	29.96	761.0	81.4	27.4	48	SE					2			0	0		D. clouds.
Lahore	29.26	743.1	30.04	763.1	55.1	12.8	84	Calm	1.1	0.5			10			0	0		Cloudy
Belgaum	27.43	696.7	29.98	761.4	76.1	24.5	46	ESE	2.0	0.9			1			0	0		D. clouds.
Bangalore																			
Roorkee	29.12	739.5	30.07	763.7	54.8	12.7	94	SE	2.1	0.9			8			0	0	Foggy	
Agra	29.47	748.6	30.07	763.7	58.3	14.6	79	N					4			0	0		
Trichinopoly																			
Nagpur	28.96	735.4	30.01	762.1	78.6	25.9	55	Calm	2.4	1.1			2			0	0	Blue sky	
Madras																			
Lucknow	29.68	753.9	30.08	764.0	55.6	13.1	91	NW	0.7	0.3			8	E		0	0		D. clouds.
Allahabad	29.73	755.2	30.06	763.5	60.3	15.7	73	Calm	1.8	0.8			2			0	0		D. clouds.
Patna	29.87	758.7	30.06	763.5	63.8	17.7	70	W	1.3	0.6			8	W	W	0	0		D. clouds.
Hazaribagh	27.98	710 6	30.07	763.7	59.8	15.4	45	W	6.7	3.0			7		S	0	0		
Cuttack	29.92	760.0	30.01	762.2	75.0	23.9	58	Calm	1.0	0.4			6	S		0	0		D. clouds
Calcutta (Alipore)	30.01	762.3	30.03	762.8	66.0	18.9	59	WNW	7.0	3.1			2			0	0		D. clouds.
Goalpara	29.61	752.1	30.01	762.3	68.8	20.4	69	Calm	2.8	1.2			0			0	0		Blue sky
Chittagong	29.92	760.0	30.02	762.4	68.6	20.3	70	Calm	4.1	1.8			0			0	0		Blue sky
Sibsagar	29.69	754.1	30.04	763.0	63.9	17.7	85	Calm	1.5	0.7			0			0	0		Blue sky
Rangoon																			
Jubbulpore	28.67	728.2	30.07	763.8	69.9	21.1	80	SW	1.3	0.6			0			0	0	Blue sky	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,361 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 1—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	22.18	563.4	30.34	770.6	16.2	— 8.8	66	ENE	.....	.....	2	.....	1	NE	.....	0	0	.....	Ab. Dom. Mongini.
Stelvio	22.15	562.6	30.32	770.0	14.4	— 9.8	.....	ESE	.....	.....	1	.....	0	.....	.....	0	0	.....	Signora Ernesta Manfredi.
Udine	29.87	758.7	30.30	769.6	35.6	2.0	54	SE	7.4	3.3	.....	.....	4	.....	.....	0	0	.....	Prof. Giovanni Clodig.
Padua	30.19	766.9	30.31	769.8	38.7	3.7	54	N	5.6	2.5	.....	.....	4	E	.....	0	0	.....	Prof. Dott. Lorenzoni.
Vicenza	30.11	764.8	30.31	769.9	37.9	3.3	63	N	0.7	0.3	.....	.....	6	.....	.....	0	0	.....	Conte Alm. Da Schio.
Verona	30.06	763.5	30.29	769.4	41.7	5.4	71	E	.....	.....	1	.....	10	.....	.....	0	0	.....	Dott. B. Bertoncelli.
Bergamo	28.98	734.0	30.31	769.8	36.7	2.6	72	SSW	.....	.....	2	.....	4	.....	.....	0	0	.....	Prof. Trionfini Carlo.
Domodossola	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Giuseppe Calza.
Milan	29.79	756.7	30.34	770.7	37.6	3.1	.....	E	.....	.....	1	.....	5	ENE	.....	0	0	.....	Ab. Gio. Capelli.
Pavia	29.96	760.9	30.32	770.1	36.7	2.6	86	NE	.....	.....	1	.....	7	NE	.....	0	0	.....	Prof. Gio. Cantoni
Moncalieri	29.37	746.0	30.32	770.0	35.2	1.8	74	ESE	4.3	1.9	.....	.....	8	NE	.....	0	0	.....	Prof. P. F. Denza.
Mondovi	28.30	718.8	30.28	769.2	33.6	0.9	68	N	.....	.....	2	.....	7	NE	.....	0	0	.....	Prof. D. C. Bruno.
Porto Maurizio	30.00	761.9	30.23	767.7	51.1	10.6	82	E	.....	.....	6	.....	5	S	.....	0	0	.....	Prof. L. Vassallo.
Genoa	30.08	764.1	30.26	768.5	45.1	7.3	41	N	8.1	3.6	.....	.....	2	NE	.....	0	0	.....	Prof. G. M. Garibaldi
Piacenza	30.07	763.6	30.33	770.4	35.2	1.8	80	SE	2.5	1.1	.....	.....	10	E	.....	0	0	.....	Dott. G. Manzi.
Parma	30.01	762.3	30.35	770.9	38.1	3.4	68	SSW	.....	.....	2	.....	8	.....	.....	0	0	.....	Prof. P. Pigorini.
Florence	30.02	762.2	30.28	769.0	41.0	5.0	65	NE	.....	.....	6	.....	6	.....	.....	0	0	.....	Cav. F Meucci.
Leghorn	30.11	764.9	30.20	767.1	42.6	5.9	51	NE	15.4	6 9	.....	.....	3	.....	.....	0	0	.....	Prof. P. Monte.
Siena	28.95	735.4	30.20	767.0	36.9	2.7	64	NE	39.8	17.8	.....	.....	10	NE	.....	0	0	.....	Prof. L. Toscani.
Urbino	28.65	727.7	30.26	768.7	32.9	0.5	.....	N	.....	.....	4	.....	10	.....	.....	0.079	2.0	.....	Prof. P. Serpieri.
Pesaro	30.20	767.1	30.25	768.4	41.7	5.4	69	N	39.1	17.5	.....	.....	10	N	.....	0	0	.....	Prof. Luigi Guidi.
Ancona	30.12	765.1	30.23	767.9	43.3	6.3	76	SW	.....	.....	4	.....	10	SE	.....	0	0	.....	Prof. F. DeBosis.
Grosseto	30.08	764.0	30.19	766.9	44.8	7.1	64	NNW	.....	.....	6	.....	5	NE	.....	0	0	.....	Avv. P. Ponticelli.
Rome	29.99	761.8	30.17	766.4	44.8	7.1	56	N	6.3	2.8	.....	.....	6	.....	.....	0	0	.....	Prof. P. A. Secchi.
Naples, O. U.	29.98	761.4	30.18	766.6	49.3	9.6	47	N	.....	.....	1	.....	6	N	.....	0	0	.....	Prof. L. Palmieri.
Lecce	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. C. De Giorgi.
Cosenza	29.24	742.8	30.10	766.0	43.5	6.4	82	NW	0	0	.....	.....	2	SE	.....	0	0	.....	Prof. F. D. Conti.
Cagliari	29.55	758.2	30.05	763.2	48.6	9.2	58	NW	.....	.....	2	.....	1	E	.....	0	0	.....	Prof. A. Pacinotti.
Riposto, (Sicily)	30.03	762.8	30.08	764.0	50.5	10.3	69	Calm	.....	.....	0	.....	8	S	.....	0	0	.....	Prof. F. Cafiero.
Palermo	29.78	756.3	30.04	762.9	48.7	9.3	70	W	1.8	0.8	.....	.....	10	.....	.....	0	0	.....	Prof. G. Cacciatore.
Caltanissetta	28.07	713.0	30.00	763.5	39.7	4.3	84	NE	.....	.....	4	.....	10	.....	.....	0.138	3.5	.....	Prof. A. Pagani.
Syracuse	30.05	763.2	30.12	765.1	50.0	10.0	57	NW	.....	.....	1	.....	9	SW	.....	0	0	.....	Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.61	752.1	30.17	766.2	45.9	7.7	53	NNE	1.8	0.8	.....	.....	6	.....	.....	0	0	.....	Prof. F. Brioschi.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals give the wind-force on the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,543.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.3 ft.; Siena, 348.5 m., or 1,143.3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Tokei (Yeddo)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	The Observatory.
Tokei (Yeddo) University	30.00	762.0	30.10	764.6	35.2	1.8	54	NW	10	4.5	.....	.....	5ks/fg	.....	W	0	0	.....	Prof. P. V. Veeder.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Barcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Aguascalientes	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	I. N. Marin, M. D.
Córdoba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	C. Peña, M. D.
Cuernavaca	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	L. Castillo, A. E.
Guadalajara	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. L. Perez.
Guanajuato	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. V. Fernandez.
Leon	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. M. Leal.
Mexico	22.98	583.6	30.05	763.4	37.4	3.0	59	W	0.5	0.22	.....	0	0	.....	.....	0	0	Very clear.	Central Observatory.
Orizaba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	N. N.
Orizaba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	I. Orozco, M. D.
Pabellon, (Aguascalts)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. V. de Leon, M. E.
Puebla	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. B. Gonzalez.
Toluca	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. C. Velazquez.
Tlacotalpam	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. F. R. Bayly.
San Luis Potosi	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	G. Barroeta, M. D.
Vera-Cruz	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. J. Rossell.
Zacatecas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. A. Bonilla, M. E.
Puebla, (Catholic Institute)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	P. Spina. (M. M. D. D.
Morelia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Tena, F. L. Páramo

Note.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 898 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,290 m., or 7,512.9 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosi, 1,803 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	30.56	776.2	30.56	776.2	32.7	0.4	.....	S	.....	.....	2	.....	.....	.....	.....	0	0	.....	
Groningen	30.51	775.0	30.57	776.4	29.5	— 1.4	.....	S	.....	.....	1	.....	.....	.....	.....	0	0	.....	
Helder	30.52	775.3	30.52	775.3	31.3	— 0.4	.....	S	.....	.....	2	.....	.....	.....	.....	0	0	.....	
Hellevoetsluis	.....	.....	30.56	776.1	32.0	0.0	91	SSE	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	
Utrecht	30.52	775.3	30.57	776.5	28.2	— 2.1	90	SSE	.....	.....	2	.....	10	.....	.....	0	0	Dull	H. v d Brink.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	30.16	766.0	30.21	767.4	42.1	5.6	100	S	17.2	7.7	.....	.....	8	.....	.....				
Brönö	29.83	757.6	29.87	758.6	38.1	3.4	76	WSW	22	10	.....	.....	5	.....	.....	0	0	.....	
Christiania	30.07	763.8	30.23	767.7	39.7	4.3	92	SSW	7	3	.....	.....	10	.....	.....	.....	.....	Light rain...	
Tromsö	29.52	749.9	29.57	751.0	31.6	— 0.2	86	SW	13	6	.....	.....	10	.....	.....	0	0	Light fog.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.252	6.4	Light snow..	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	30.32	770.0	30.51	774.9	59.5	15.3	85	ESE	7.4	3.3	.....	.....	8	.....	.....	0	0	.....	Dr. J. A. Sampaio.
Campo Major	29.35	745.4	30.40	772.1	47.3	8.5	42	NE	9.8	4.4	.....	.....	0	.....	.....	0	0	.....	Dr. A. M. R. dos Santos
Funchal, (Madeira)	30.11	764.7	30.18	766.5	66.2	19.0	42	SE	4.9	2.2	.....	.....	0	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	30.01	762.2	30.38	771.6	48.6	9.2	43	NE	24.8	11.1	.....	.....	0	.....	.....	0	0	.....	The Staff.
Ponta Delgada, (Azores)	30.44	773.1	30.51	774.9	61.5	16.4	59	E	5.6	2.5	.....	.....	3	.....	.....	0	0	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

Naval Series. Vessels.																Sea or swell. Height scale 0–9	Sea or swell. Direction from—		
S. Bartholomew Dias	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
S. S. India	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R, A. T. Pinha, Com'd't.
S. S. Mindello	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. D. Pedroso, Com'd't.
S. S. Sado	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. F. R. R. Bastos, Com'd't.
S. S. Sá da Bandeira	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. N. P. Sampaio, Com'd't.
S. S. Tejo	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. Texeira da Silva, Com'd't.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. J. Ferreira,dos Amas,Com'd't

NOTE.—The originals, except for S. S. Tejo, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	30.24	768.0	30.71	780.0	10.2	—12.1	93	NE	4	2	.....	.....	0	.....	.....	.....	.....	.....	Astronomical Obs.
Wilna	30.30	769.7	30.78	781.7	9.1	—12.7	81	Calm	0	0	.....	.....	2	.....	.....	.....	.....	.....	Astronomical Obs.
Dorpat	30.41	772.4	30.68	779.2	15.4	— 9.2	87	SSW	7	3	.....	.....	10n	.....	.....	.....	.....	Light clouds	Astronomical Obs.
St. Petersburg	30.61	777.4	30.62	777.8	12.4	—10.9	86	S	16	7	.....	.....	10n	.....	.....	.....	.....	.....	Prof. Dr. Weihrauch.
Kuopio	29.82	757.4	30.16	766.0	30.9	— 0.6	100	S	34	15	.....	.....	10	.....	.....	.....	.....	.....	Central Physical Obs.
Kieff	29.95	760.6	30.66	778.7	10.4	—12.6	85	E	4	2	.....	.....	10c;s;ks	.....	.....	.....	.....	.....	Ch. Forsten.
Nikolaiev	30.41	772.4	30.48	774.2	19.9	— 6.7	81	NE	22	10	.....	.....	10n	.....	.....	.....	.....	Snowing ...	Physical Cabinet.
Kertch	30.28	768.6	30.28	769.1	33.1	0.6	75	NE	13	6	.....	.....	5	.....	.....	.....	.....	.....	Kurdakof.
Moscow	30.42	772.7	31.06	789.0	— 3.6	—19.8	80	S	9	4	.....	.....	0	.....	.....	.....	.....	.....	Lagorio.
Lugan	30.43	772.8	30.65	778.4	21.2	— 6.0	44	E	34	15	.....	.....	0	.....	.....	.....	.....	.....	Meteorological Obs.
Archangel	30.33	770.4	30.35	770.9	7.2	—13.8	100	S	29	13	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Tiflis	29.13	739.8	30.67	779.0	23.7	— 4.6	81	Calm	0	0	.....	.....	10	.....	.....	.....	.....	.....	Ogorodnikof.
Astrakhan	30.95	786.0	30.86	783.9	15.8	— 9.0	63	E	11	5	.....	.....	0	.....	.....	.....	.....	Snowing.....	Physical Observatory
Kasan	30.74	780.7	31.04	788.5	4.1	—15.5	81	Calm	0	0	.....	.....	2	.....	.....	.....	.....	Light clouds	Sebastianof.
Orenburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Physical Cabinet.
Ekaterinburg	29.69	754.0	30.76	781.4	— 3.5	—19.7	100	W	13	6	.....	.....	10	.....	.....	.....	.....	.....	Tschernischef.
Nukuss	30.62	777.7	30.89	784.6	— 6.9	—21.6	85	ENE	4	2	.....	.....	2s	.....	.....	.....	.....	.....	Meteorological Obs.
Kasaly	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Tashkend	29.11	739.5	31.03	789.5	1.9	—16.7	85	Calm	0	0	.....	.....	10n	.....	.....	.....	.....	.....	Bobrof.
Barnaul	30.13	765.2	30.76	781.4	—30.1	—34.5	74	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Michelson.
Yeniseisk	30.48	774.3	30.87	784.0	—16.6	—27.0	86	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Meteorological Obs.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Marks.
Oorga	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Usolzef.
Krotkowo*	30.55	776.0	31.08	789.3	6.1	—14.4	67	SW	2	1	.....	.....	1s	.....	.....	.....	.....	.....	Mossin.
Peking, (China)	30.54	775.7	30.68	779.3	19.6	— 6.9	38	NW	40	18	.....	.....	5ks	.....	.....	.....	.....	Lunar corona	Cand. Fatjanow.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Physical Observatory
Vladivostock	30.29	769.4	30.33	770.4	8.1	—13.3	60	NW	4	2	.....	.....	0	.....	.....	.....	.....	.....	Meteorological Obs.
Nikolaievsk, on the Amoor	.....	.....	.....	.....	—13.4	—25.2	.....	Calm	0	0	.....	.....	0	.....	.....	.....	.....	Lunar halo..	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall; for Krotkowo, the barometer reduced to freezing but not to sea-level. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft. * N. 53° 47′, E. 48° 34′.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Rave, Director.
Bilbao, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Manuel de Naveran
Burgos, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Domingo Martin y Perez.
Madrid, Royal Observatory	28.09	713.5	30.42	772.7	41.4	5.2	57	SW	1.5	0.67	.....	0	0	.....	.....	0	0	Clear	The Staff.
Murcia, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Olayo Diaz, Director.
Santiago, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.90	759.5	29.97	761.2	70.8	21.6	86	ESE	13.0	5.8	.....	7c;ck	2k	.....	.....	0	0	Fair	Benito Vines, S. J.
San Fernando, Naval Obs'y	30.17	766.3	30.27	768.9	57.2	14.0	52	E	24.1	10.8	.....	0	5	.....	E	0	0	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de PortoRico, W. I.	.....	.....	29.86	758.5	77.0	25.0	90	SE	5.5	2.44	.....	4c	4kn	E	E	0.413	10.50	Cloudy.....	Leonardo de Tejeda, Chief of Engineers.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the cöoperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.86	758.4	29.90	759.4	33.4	0.8	.....	SW	.....	.....	2	.....	5	.....	.....	0.236	6.0	.....	
Umea	30.04	763.0	30.09	764.3	32.4	0.2	89	W	.....	.....	2	.....	0	.....	.....	0.016	0.4	.....	
Hernosand	30.10	764.4	30.15	765.7	34.7	1.5	83	Calm	.....	.....	0	.....	7	.....	.....	0	0	.....	
Stockholm	30.13	765.3	30.31	769.8	36.3	2.4	86	SSW	.....	.....	4	.....	10	.....	.....	0	0	Foggy	
Wisby	30.40	772.2	30.46	773.7	36.0	2.2	89	W	.....	.....	6	.....	10	.....	.....	0	0	.....	
Sub-Series.																			
Upsala	30.21	767.3	30.28	769.2	36.7	2.6	94	SW	15.0	6.7	.....	.....	10	.....	.....	0.009	0.23	Raining	Dr. Hildebrandsson.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the cooperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.96	735.5	30.47	773.9	26.4	— 3.1	79	NNE	.....	.....	4	.....	10	.....	.....	0	0	Covered	The Observatory.
Zurich	28.78	731.1	30.63	776.5	23.0	— 5.0	70	SE	.....	.....	1	.....	9	.....	.....	0	0	Covered	The Observatory.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—For Geneva the corresponding departures from the normal values are: Barometer, +7.9 mm; Thermometer, —5.1 cent.; Relative Humidity, —1 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the cooperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	30.15	765.9	44.1	6.7	91	N	29	13.0	.....	.....	10	.....	NE	0.350	8.9	.....	The Observatory.
Fao, (Persian Gulf)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salonica	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Valona	.....	.....	30.06	763.5	49.5	9.7	.....	W	.....	.....	1	.....	10	.....	.....	0	0	Covered	B. Stefanides. A. Bertraud.
Varna	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Sub-Series.																			Imperial Observatory.
Beirut,(Syria,) Lee Obs'y	29.03	760.2	30.04	763.1	59.4	15.2	69	SW	.....	.....	3	.....	10n	.....	SW	0.03	0.8	Overcast	Prof. C. V. A. Van Dyck

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the cooperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	30.03	778.0	30.70	779.8	11.6	—11.3	75	N	5.0	2.2	.....	0	.....	.....	.....	.....	.....	.....	Hon. J. Ferguson.
Brockville, Ontario	30.25	768.3	30.58	776.7	24	— 4.4	.....	E	5	2.2	.....	.....	10s	.....	E	0	0	Cloudy	W. R. Bigg.
*Chatham, N. B	.....	.....	30.61	777.5	9	—12.8	93	NW	8	3.6	.....	0	0	.....	.....	0.03	0.8	Clear	G. A. Blair.
Charlottetown, P. E. Island.	30.40	772.1	30.44	773.2	17	— 8.3	85	N	22	9.8	.....	.....	10n	.....	Calm	0.100	2.54	Light snow	H. J. Cundall, C. E.
Cornwall, Ontario	30.38	771.6	30.59	777.0	21.2	— 6.0	96	SE	.....	.....	1	2cs	4s	NW	NE	0	0	Fair	James Smith, M. A.
Dalhousie, N. B	30.55	776.0	30.59	777.0	9.6	—12.4	84	NW	.....	.....	1	.....	.....	.....	.....	0.025	0.63	Clear	H. A. Johnson.
Esquimault, B. C	29.77	756.1	29.81	757.2	40.6	4.8	96	SW	.....	.....	.....	3ck	0	.....	.....	0	0	Clear	W. H. Bevis.
*Father Point, Quebec	30.72	780.3	30.74	780.8	3	—16.1	86	S	9	4.0	.....	0	0	.....	.....	0	0	Clear	J. McWilliams.
Fredericton, N. B	30.60	777.2	30.67	779.0	8.9	—12.8	81	N	7.0	3.1	.....	0	0	.....	.....	Inap.	Inap.	Clear	Prof. Harrison.
*Fort Garry, Manitoba	29.25	742.9	30.11	764.8	28	— 2.2	95	S	8	3.6	.....	5k	5n	W	W	0	0	Cloudy	James Stewart.
Goderich, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	H. J. Strang, M. A.
Granton, Ontario	29.31	744.5	30.46	773.7	37	2.8	90	E	.....	.....	1	.....	10n	.....	.....	0	0	Cloudy	James Grant.
*Halifax, N. S	30.24	768.1	30.38	771.6	19	— 7.2	80	N	22	9.8	.....	.....	10ks	.....	N	0.050	1.27	Cloudy	F. Allison, M. A.
Hamilton, Ontario	30.12	765.0	30.51	774.9	38.5	3.6	89	E	.....	.....	1	10cs	.....	SE	.....	0	0	Cloudy	Geo. Dickson, M. A
Heart's Content, N. F	29.97	761.2	30.01	762.2	30	— 1.1	100	NE	.....	.....	4	.....	10	.....	.....	0.16	4.1	Snowing	E. Weedon.
*Kingston, Ontario	30.22	767.6	30.58	776.7	23	— 5.0	85	NE	2	0.9	.....	8c	0	Calm	.....	0	0	Fair	S. Woods, M. A.
Little Glace Bay, N. S	30.17	766.3	30.21	767.3	21.5	— 5.8	.....	NE	18	8.0	.....	0	.....	.....	.....	0	0	.....	C. H. Rigby.
*Montreal, Quebec	30.43	772.9	30.65	778.5	17	— 8.3	92	NE	4	1.8	.....	5c	0	N	.....	0	0	Fair	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.74	755.4	30.47	773.9	32	0.0	95	SE	11	4.9	.....	.....	10n	.....	SE	0.12	3.0	Light rain	Rev. R. Mosley.
Peterboro, Ontario	29.73	755.1	30.53	775.4	28.5	— 1.9	86	E	.....	.....	1	.....	10n	.....	.....	0	0	Overcast	J. F. Jeffers, B. A.
Port Dover, Ontario	29.76	755.9	30.49	774.4	34	1.1	100	N	7	3.1	.....	.....	Fog	.....	.....	0	0	Foggy	H. Morgan.
Port Hastings, N. S	30.27	768.8	30.32	770.1	29.7	— 1.3	.....	N	5	2.2	.....	.....	.....	.....	.....	0	0	Fine	Peter Grant.
Port Stanley, Ontario	29.77	756.1	30.45	773.4	38	3.3	95	E	3	1.3	.....	.....	10ks	.....	SW	0.01	0.3	Cloudy	M. Payne.
*Quebec, Quebec	30.37	771.4	30.73	780.5	10	—12.2	88	NE	.....	.....	.....	0	Haze	.....	NE	0	0	Clear	Capt. Ashe, R. N
*Rockliffe, Ontario	30.01	763.0	30.63	775.4	28	— 2.2	88	SE	12	5.4	.....	.....	10s	.....	SE	0.02	0.5	Heavy rain	W. H. McIntyre.
St. John, N. B	30.39	771.9	30.57	776.5	12	—11.1	80	NW	18	8.0	.....	0	0	.....	.....	0	0	Clear	G. Murdock, C. E.
*Saugeen, Ontario	29.66	753.4	30.39	771.9	39	3.9	96	S	3	1.3	.....	.....	10s	.....	.....	0.03	0.8	Cloudy	K. Stewart.
Stayner, Ontario	29.63	752.6	30.45	773.4	33	0.6	90	SE	10	4.5	.....	.....	10n	.....	SE	0.03	0.8	Threatening	R. J. Cole.
Stratford, Ontario	29.18	741.2	30.52	775.2	34.3	1.3	98	SE	6.5	2.9	.....	.....	Fog	.....	.....	0	0	Foggy	C. J. MacGregor, M. A.
*Sydney, C. B	30.19	766.8	30.23	767.8	23	— 5.0	87	N	19	8.5	.....	.....	10n	.....	.....	0.10	2.5	Light snow	T. C. Hill.
*Toronto, Ontario	30.10	764.5	30.51	774.9	37	2.8	85	E	4	1.8	.....	.....	10n	.....	E	0	0	Cloudy	Magnetic Observatory.
Windsor, N. S	30.46	773 7	30.56	776.2	19.5	— 6.9	92	N	24	10.7	.....	0	9k	.....	.....	0	0	Fair	Prof. John E. Oram.
Woodstock, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Montgomery.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	32.0	0.0	.....	NE	.....	.....	.....	.....	10n	.....	.....	0.42	10.7	Snowing	John Delany.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Fathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

UNITED STATES SERIES.

By authority of the SECRETARY OF WAR.

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	30.40	772.1	30.63	778.5	22	— 5.6	72	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Alpena, Michigan	29.67	753.6	30.33	770.4	43	6.1	100	Calm	0	0	.....	.....	Fog	.....	Calm	0.44	11.2	Foggy	
Atlantic City, New Jersey	30.56	776.2	30.58	776.7	44	6.7	67	E	16	7.2	.....	0	8ks	.....	E	0	0	Cloudy	
Augusta, Georgia	30.14	765.5	30.33	770.4	52	11.1	93	NE	4	1.8	.....	.....	10s	.....	E	0	0	Cloudy	
Baltimore, Maryland	30.54	775.7	30.59	777.0	43	6.1	66	NE	6	2.7	.....	.....	10s	.....	NE	0	0	Cloudy	
Barnegat, New Jersey	30.56	776.2	30.58	776.7	42	5.6	66	E	15	6.7	.....	10k	0	E	.....	0	0	Cloudy	
Bismarck, Dakota	28.14	714.7	29.85	758.2	32	0.0	89	S	8	3.6	.....	.....	10s	.....	S	0	0	Cloudy	
Boise City, Idaho	27.04	686.8	29.92	760.0	41	5.0	56	SW	4	1.8	.....	.....	10s	.....	Calm	0	0	Cloudy	
Boston, Massachusetts	30.48	774.2	30.65	778.5	25	— 3.9	62	NW	11	4.9	.....	1k	0	.....	.....	0	0	Clear	
Brackettville, Texas	28.58	725.9	29.59	751.6	56	13.3	74	W	3	1.3	.....	.....	10s	.....	W	0.32	8.1	Cloudy	
Breckenridge, Minnesota	29.05	737.9	30.08	764.0	33	0.6	95	S	9	4.0	.....	.....	10s	.....	Calm	0.24	6.1	Cloudy	
Brownsville, Texas	29.75	755.6	29.82	757.4	57	13.9	87	SW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Buffalo, New York	29.71	754.6	30.45	773.4	35	1.7	100	NE	4	1.8	.....	1c	2s	Calm	Calm	0	0	Fair	
Burkes, Arizona	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Burlington, Vermont	30.37	771.4	30.66	778.7	25	— 3.9	88	N	4	1.8	.....	.....	10s	.....	N	0.08	2.0	Cloudy	
Cairo, Illinois	29.77	756.1	30.17	766.3	55	12.8	62	E	8	3.6	.....	2k	0	Calm	.....	0	0	Fair	
Camp Grant, Arizona	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Camp Verde, Arizona	26.72	678.7	30.20	767.1	34	1.1	90	N	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Campo, California	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Cape Hatteras, N. Carolina	30.36	771.1	30.37	771.4	57	13.9	87	NE	26	11.6	.....	2k	0	NE	.....	0	0	Fair	
Cape Henry, Virginia	30.42	772.7	30.45	773.4	50	10.0	86	NE	22	9.8	.....	.....	10s	.....	NE	0	0	Cloudy	
Cape Lookout, N. Carolina	30.34	770.6	30.36	771.1	54	12.2	94	NE	22	9.8	.....	2k	0	NE	.....	0	0	Fair	
Cape May, New Jersey	30.54	775.7	30.56	776.2	46	7.8	76	NE	12	5.4	.....	5k	0	E	.....	0	0	Fair	
Charleston, South Carolina	30.25	768.3	30.32	770.1	56	13.3	93	NE	11	4.9	.....	.....	10s	.....	Calm	0	0	Cloudy	
Cheyenne, Wyoming	23.93	607.8	29.87	758.7	21	— 6.1	57	W	4	1.8	.....	2c	2s	Calm	Calm	0	0	Fair	
Chicago, Illinois	29.55	750.8	30.26	768.6	50	10.0	79	SE	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Cincinnati, Ohio	29.62	752.3	30.28	769.1	48	8.9	85	Calm	0	0	.....	.....	Fog	.....	Calm	0	0	Foggy	
Cleveland, Ohio	29.68	753.9	30.43	772.9	50	10.0	78	E	9	4.0	.....	5k	2ks	E	E	0	0	Fair	
Concho, Texas	27.90	708.6	29.56	750.8	50	10.0	93	NE	2	0.9	.....	8c	0	NE	.....	0.09	2.3	Cloudy	
Corsicana, Texas	29.29	744.0	29.75	755.6	55	12.8	93	E	6	2.7	.....	.....	10s	.....	Calm	0.73	18.5	Cloudy	
Davenport, Iowa	29.58	751.3	30.23	767.8	49	9.4	85	Calm	0	0	.....	0	4s	.....	E	0	0	Fair	
Deadwood, Dakota Ty	.....	.....	.....	.....	27	— 2.8	88	W	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Denison, Texas	29.00	736.6	29.78	756.4	56	13.3	94	E	4	1.8	.....	.....	10n	.....	Calm	0.36	9.1	Light rain	
Denver, Colorado	24.69	627.1	29.91	759.7	39	3.9	63	Calm	0	0	.....	.....	10s	.....	Calm	0	0	Cloudy	
Detroit, Michigan	29.70	754.4	30.40	772.1	43	6.1	91	Calm	0	0	.....	.....	10s	.....	Calm	0.01	0.3	Cloudy	
Dodge City, Kansas	27.28	692.9	29.53	750.0	51	10.6	93	SE	14	6.3	.....	.....	10n	.....	Calm	0.92	23.4	Heavy rain	
Dubuque, Iowa	29.52	749.8	30.23	767.8	46	7.8	92	Calm	0	0	.....	0	Fog	.....	Calm	0	0	Foggy	
Duluth, Minnesota	29.53	750.0	30.23	767.8	38	3.3	90	Calm	0	0	.....	.....	10s	.....	Calm	Inap.	Inap.	Cloudy	
Eagle Pass, Texas	28.96	735.6	29.68	753.9	58	14.4	88	Calm	0	0	.....	.....	10s	.....	Calm	0.11	2.8	Cloudy	
Eastport, Maine	30.54	775.7	30.61	777.5	16	— 8.9	74	N	16	7.2	.....	0	0	.....	.....	0	0	Clear	
Erie, Pennsylvania	29.69	754.1	30.43	772.9	46	7.8	76	S	3	1.3	.....	2c	2s	.....	.....	0	0	Fair	
Escanaba, Michigan	29.64	752.8	30.32	770.1	41	5.0	91	E	2	0.9	.....	.....	Fog	.....	.....	0.45	11.4	Dense fog	
Florence, Arizona	28.30	718.8	29.90	759.4	51	10.6	65	E	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Fort Bayard, New Mexico	23.96	608.6	29.96	761.0	31	— 0.6	68	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Fort Craig, New Mexico	25.43	645.9	.....	.....	26	— 3.3	75	N	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Fort Gibson, Indian Ter	29.31	744.5	29.83	757.7	60	15.6	70	E	10	4.5	.....	2c	8s	Calm	E	0	0	Cloudy	
Fort Griffin, Texas	28.52	724.4	29.77	756.1	55	12.8	80	Calm	0	0	.....	.....	10ks	.....	E	0.08	2.0	Cloudy	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	28.58	725.9	29.66	753.4	55	12.8	93	E	5	2.2	.....	.....	10n	.....	E	0.81	20.6	Light rain	
Galveston, Texas	29.69	754.1	29.73	755.1	58	14.4	93	W	6	2.7	.....	.....	10ks	.....	SW	1.39	35.3	Cloudy	
Grand Haven, Michigan	29.66	753.4	30.32	770.1	47	8.3	92	SE	6	2.7	.....	.....	Fog	.....	Calm	0.14	3.6	Foggy	
Indianapolis, Indiana	29.48	748.8	30.27	768.8	49	9.4	85	S	3	1.3	.....	0	Fog	.....	.....	0	0	Clear	
Indianola, Texas	29.75	755.6	29.78	756.4	58	14.4	94	W	8	3.6	.....	.....	10s	.....	Calm	1.19	30.2	Cloudy	
Jacksboro, Texas	28.64	727.4	29.74	755.4	64	17.8	94	SE	7	3.1	.....	.....	10s	.....	SE	0.64	16.3	Cloudy	
Jacksonville, Florida	30.14	765.5	30.17	766.3	61	16.1	88	NE	7	3.1	.....	8k	0	Calm	.....	0.07	1.8	Cloudy	
Keokuk, Iowa	29.50	749.3	30.13	765.3	48	8.9	85	E	7	3.1	.....	0	4s	.....	Calm	0	0	Fair	
Key West, Florida	29.94	760.5	29.97	761.2	72.0	22.2	78	E	13	5.8	.....	5c	5ks	W	E	0	0	Fair	
Kittyhawk, North Carolina	30.39	771.9	30.41	772.4	53	11.7	100	NE	20	8.9	.....	0	0	.....	.....	Inap.	Inap.	Clear	
Knoxville, Tennessee	29.25	742.9	30.28	769.1	45	7.2	76	Calm	0	0	.....	0	Sm'e	.....	.....	0	0	Smoky	
La Crosse, Wisconsin	29.46	748.3	30.23	767.8	38	3.3	100	Calm	0	0	.....	.....	Fog	.....	.....	0.09	2.3	Foggy	
La Mesilla, New Mexico	25.96	659.4	30.11	764.8	34	1.1	62	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Laredo, Texas	.....	.....	.....	.....	58	14.4	81	Calm	0	0	.....	10cs	0	N	.....	0	0	Cloudy	
Leavenworth, Kansas	29.16	740.7	30.00	762.0	52	11.1	79	SE	5	2.2	.....	5c	0	Calm	.....	0	0	Fair	
Los Angeles, California	29.64	752.8	29.99	761.7	48	8.9	78	N	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Louisville, Kentucky	29.68	753.9	30.25	768.3	48	8.9	92	N	6	2.7	.....	Haze	Fog	Calm	Calm	0	0	Clear	
Lynchburg, Virginia	29.80	756.9	30.50	774.7	53	11.7	73	NE	4	1.8	.....	.....	10s	.....	SE	0	0	Cloudy	
Maricopa Wells, Arizona	.....	.....	.....	.....	40	4.4	56	N	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Marquette, Michigan	29.48	748.8	30.20	767.1	43	6.1	75	Calm	0	0	.....	.....	10s	.....	Calm	0	0	Cloudy	
Mason, Texas	28.11	714.0	29.83	757.7	54	12.2	87	Calm	0	0	.....	.....	10s	.....	.....	0.18	4.6	Cloudy	
Memphis, Tennessee	29.74	755.4	30.05	763.3	57	13.9	68	E	8	3.6	.....	.....	10s	.....	SW	0	0	Cloudy	
Milwaukee, Wisconsin	29.60	751.8	30.31	769.9	41	5.0	91	Calm	0	0	.....	.....	Fog	.....	Calm	0.02	0.5	Dense fog	
Mobile, Alabama	29.96	761.0	30.00	762.0	62	16.7	83	E	5	2.2	.....	.....	10s	.....	SE	0.02	0.5	Cloudy	
Montgomery, Alabama	29.90	759.4	30.14	765.5	58	14.4	75	E	12	5.4	.....	10cs	0	S	.....	0	0	Cloudy	
Morgantown, West Virginia	29.35	745.5	30.44	773.2	44	6.7	75	E	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Mt. Washington, N. H.	24.03	610.4	30.39	771.9	17	— 8.3	50	NE	15	6.7	.....	0	0	.....	.....	0	0	Clear	
Nashville, Tennessee	29.67	753.6	30.22	767.6	45	7.2	84	SE	1	0.4	.....	0	1s	.....	Calm	0	0	Clear	
New Haven, Connecticut	30.54	775.7	30.66	778.7	27	— 2.8	77	NE	8	3.6	.....	0	0	.....	.....	0	0	Clear	
New London, Connecticut	30.58	776.7	30.64	778.2	30	— 1.1	78	N	6	2.7	.....	0	1s	.....	Calm	0	0	Clear	
New Orleans, Louisiana	29.75	755.6	29.81	757.2	65	18.3	89	SE	24	10.7	.....	.....	10ks	.....	E	1.18	30.0	Cloudy	
Newport, Rhode Island	30.58	776.7	30.64	778.2	30	— 1.1	68	N	5	2.2	.....	0	0	.....	.....	0	0	Clear	
New York, New York	30.45	773.4	30.64	778.2	35	1.7	70	NE	11	4.9	.....	5k	Fog	Calm	.....	0	0	Fair	
Norfolk, Virginia	30.44	773.2	30.50	774.7	50	10.0	100	NW	10	4.5	.....	.....	10s	.....	NW	0	0	Cloudy	
North Platte, Nebraska	27.00	685.8	29.58	751.3	40	4.4	95	NE	5	2.2	.....	.....	10n	.....	Calm	1.30	33.0	Light rain	
Olympia, Washington Ter	29.86	758.4	29.90	759.4	40	4.4	82	SW	10	4.5	.....	.....	10n	.....	Calm	0.70	17.8	Light rain	
Omaha, Nebraska	28.92	734.6	29.99	761.7	50	10.0	93	SE	6	2.7	.....	.....	10s	.....	Calm	0	0	Cloudy	
Oswego, New York	30.21	767.3	30.55	776.0	38	3.3	67	SE	9	4.0	.....	5cs	0	NW	.....	0	0	Fair	
Pembina, Dakota	29.20	741.7	30.06	763.5	30	— 1.1	89	SE	8	3.6	.....	.....	10s	.....	Calm	0	0	Cloudy	
Philadelphia, Pennsylvania	30.57	776.5	30.63	778.0	32	0.0	89	NE	13	5.8	.....	0	Sm'e	.....	Calm	0	0	Clear	
Phœnix, Arizona	.....	.....	.....	.....	42	5.6	91	Calm	.....	.....	.....	5k	0	N	.....	0	0	Fair	
Pike's Peak, Colorado	17.58	446.5	29.78	756.4	3	—16.1	73	SW	14	6.3	.....	10cs	0	N	.....	0	0	Cloudy	
Pioche, Nevada	23.97	608.8	29.74	755.4	26	— 3.3	81	S	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Pittsburg, Pennsylvania	29.59	751.6	30.13	772.9	44	6.7	92	E	2	0.9	.....	5c	Fog	N	Calm	0.01	0.3	Fair	
Port Huron, Michigan	29.70	754.4	30.39	771.9	44	6.7	84	SE	3	1.3	.....	.....	10s	.....	Calm	0.02	0.5	Cloudy	
Portland, Maine	30.59	777.0	30.65	778.5	26	— 3.3	63	N	9	4.0	.....	0	0	.....	.....	0	0	Clear	
Portland, Oregon	29.96	761.0	30.06	763.5	42	5.6	83	SW	8	3.6	.....	.....	10n	.....	SW	0.39	9.9	Light rain	
Prescott, Arizona	24.69	627.1	30.05	763.3	26	— 3.3	88	N	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Punta Rassa, Florida	30.04	763.0	30.06	763.5	65	18.3	83	E	8	3.6	.....	5c	Haze	E	Calm	0	0	Fair	
Red Bluff, California	29.68	753.9	30.04	763.0	50	10.0	86	S	8	3.6	.....	.....	10s	.....	Calm	0	0	Cloudy	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Rochester, New York	29.84	757.9	30.50	774.7	35	1.7	80	E	8	3.6	.....	.....	10s	.....	Calm	0.10	2.5	Cloudy	
Roseburg, Oregon	29.52	749.8	30.10	764.5	41	5.0	86	NW	2	0.9	.....	10c	0	Calm	.....	0.30	7.6	Fair	
Sacramento, California	29.99	761.7	30.07	763.8	48	8.9	92	SE	4	1.8	.....	.....	10n	.....	Calm	0.02	0.5	Light rain	
St. Louis, Missouri	29.58	751.3	30.16	766.1	52	11.1	79	E	6	2.7	.....	0	0	.....	.....	0	0	Clear	
St. Marks, Florida	30.10	764.5	30.12	765.0	61	16.1	88	SE	8	3.6	.....	.....	10s	.....	SE	0	0	Cloudy	
St. Paul, Minnesota	29.27	743.4	30.12	765.0	41	5.0	91	E	4	1.8	.....	.....	Fog	.....	Calm	0.04	1.0	Foggy	
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salt Lake City, Utah	25.62	650.7	29.95	760.7	32	0.0	79	W	4	1.8	.....	0	0	.....	.....	0	0	Clear	
San Antonio, Texas	29.04	737.6	29.61	752.1	56	13.3	87	N	1	0.4	.....	2c	2s	Calm	Calm	0.01	0.3	Fair	
San Diego, California	29.93	760.2	30.00	762.0	51	10.6	86	NE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Sandusky, Ohio	29.71	754.6	30.41	772.4	44	6.7	92	E	2	0.9	.....	.....	Fog	.....	Calm	0.01	0.3	Foggy	
Sandy Hook, New Jersey	30.59	777.0	30.62	777.7	36	2.2	80	NE	22	9.8	.....	2k	0	NE	.....	0	0	Fair	
San Francisco, California	30.01	762.2	30.07	763.8	54	12.2	87	SE	5	2.2	.....	.....	10n	.....	Calm	0.12	3.0	Light rain	
Santa Fé, New Mexico	23.11	587.0	29.65	753.1	28	— 2.2	77	N	12	5.4	.....	5cs	2s	E	Calm	0	0	Fair	
Savannah, Georgia	30.17	766.3	30.26	768.6	57	13.9	100	E	8	3.6	.....	.....	10n	.....	E	0.04	1.0	Heavy rain	
Shreveport, Louisiana	29.55	750.6	29.77	756.1	57	13.9	100	E	8	3.6	.....	.....	10n	.....	Calm	0.54	13.7	Light rain	
Smithville, North Carolina	30.30	769.6	30.34	770.6	54	12.2	93	N	15	6.7	.....	2cs	0	W	.....	0	0	Fair	
Springfield, Massachusetts	30.45	773.4	30.60	777.2	25	— 3.9	63	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Stockton, Texas	26.80	680.7	29.80	756.9	46	7.8	84	NW	16	7.2	.....	.....	10s	.....	NW	0.03	0.8	Cloudy	
Thatcher's Island, Mass	30.58	776.7	30.64	778.2	30	— 1.1	59	NE	16	7.2	.....	1k	0	NE	.....	0	0	Clear	
Toledo, Ohio	29.71	754.6	30.41	772.4	42	5.6	100	Calm	0	0	.....	.....	Fog	.....	NE	0.02	0.5	Foggy	
Tucson, Arizona	.....	.....	.....	.....	35	1.7	52	Calm	.....	.....	.....	.....	10s	.....	.....	0	0	Cloudy	
Tybee Island, Georgia	30.22	767.6	30.25	768.3	55	12.8	100	NE	26	11.6	.....	.....	10n	.....	Calm	0.15	3.8	Light rain	
Umatilla, Oregon	29.60	751.8	.....	.....	38	3.3	71	SW	12	5.4	.....	0	2s	.....	W	0	0	Clear	
Vicksburg, Mississippi	29.64	752.8	29.90	759.4	60	15.6	88	E	10	4.5	.....	.....	10n	.....	E	0.01	0.3	Light rain	
Virginia City, Montana	24.11	612.4	29.59	751.6	21	— 6.1	71	SE	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Visalia, California	29.74	755.4	30.12	765.0	48	8.9	85	NW	1	0.4	.....	.....	10ks	.....	NE	0	0	Cloudy	
Washington, D. C	30.47	773.9	30.60	777.2	42	5.6	66	NE	7	3.1	.....	.....	10s	.....	NE	0	0	Cloudy	
Wickenburg, Arizona	.....	.....	.....	.....	80	— 1.1	68	S	.....	.....	.....	5k	0	Calm	.....	0	0	Fair	
Wilmington, N. Carolina	30.28	769.1	30.36	771.1	52	11.1	93	NE	8	3.6	.....	2cs	0	Calm	.....	0.03	0.8	Fair	
Winnemucca, Nevada	25.54	648.7	29.90	759.4	32	0.0	69	SW	5	2.2	.....	10cs	0	SW	.....	0	0	Cloudy	
Wood's Holl, Mass	30.58	776.7	30.64	778.2	32	0.0	60	NE	5	2.2	.....	0	5s	.....	NE	0	0	Fair	
Yankton, Dakota	28.76	730.5	30.03	764.3	36	2.2	90	Calm	0	0	.....	.....	10n	.....	Calm	0.13	3.3	Light rain	
Yuma, Arizona	29.81	757.2	29.98	761.5	45	7.2	67	Calm	0	0	.....	2c	0	Calm	.....	0	0	Fair	
SUB-SERIES.																			
York Factory, B. A	29.96	761.0	30.01	762.2	17.5	— 8.1	92	S	11	4.9	.....	.....	9s	.....	SW	0.01	0.3	Snowing	J. Fortescue, W. Wood.
Havana, Cuba, W. I	29.96	761.0	29.98	761.5	72	22.2	85	E	3.6	1.6	.....	8ck	0	SW	.....	0	0	Cloudy	Chas. Hasselbrink.
Kingston, Jamaica, W. I	30.07	763.8	30.08	764.0	74	23.3	85	Calm	0	0	.....	2c	2s	Calm	Calm	0	0	.....	James Gall.
Navassa, W. I	29.85	758.2	29.93	760.2	78	25.6	.....	NE	6	2.7	.....	.....	.....	.....	.....	0	0	Fair	F. M Everett.
St. Thomas, W. I	.....	.....	.....	.....	80	26.7	74	NE	3	1.3	.....	2c	4k	E	.....	0	0	.....	G. O. Gellich.
Paramaribo, D. Guiana, S. A	.....	.....	29.91	759.7	82	27.8	83	E	.....	.....	3	4c	5k	E	.....	0.520	13.21	Fair	C. J. Hering.
Batavia, Dutch Guiana, S. A	30.02	762.4	30.02	762.6	86.0	30	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.059	1.50	Cloudy	Dr. H. Groot.
Medellin, Colombia, S. A	25.15	638.8	.....	.....	68.0	20.0	82	Calm	.....	.....	0	.....	10n	.....	.....	0.13	3.3	Cloudy	Thomas Herran.
Honolulu, Oahu, H. I	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Daniel Smith.
Makawao, Maui, H. I	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo; for Batavia, the barometer reduced to freezing but not to sea-level. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,802 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Deadwood, (?); Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.: Fort Bayard, 6,000 (?) ft., or 1,828.0 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,776.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.: Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.468 in.; Campo, 2.67 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington 6.36 in.: Pike's Peak, 12.21 in : Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.: Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.: Winnemucca, 4.30 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation

STATIONS AND VESSELS.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard, Mare Island, Ca.	30.04	763.0	54	12.2	54	12.2	87	S	2	0.9	.....	.....	9ks	.....	Calm	0.052	1.32	.....	.....	Overcast.....	
Navy Yard, Pensacola, Fla.	30.11	764.8	.....	.....	61	16.1	100	ENE	23	10.3	.....	.....	10	.....	.....	1.08	27.4	.....	.....	D. clouds.....	
Navy Yard, Portsmouth	30.65	778.5	67	19.4	21	— 6.1	71	NNE	.....	.....	1	.....	.....	.....	.....	0	0	.....	.....	Clear	
Naval Hospital, Yokohama, Japan.....	29.98	761.5	47	8.3	37.5	3.1	49	N	.....	.....	4	.....	8k	.....	SW	0.01	0.3	.....	.....	Cloudy..	
Alliance, Smyrna, Turkey.....	30.02	762.5	60	15.6	57	13.9	69	NE	.....	.....	3	.....	6	.....	N	.....	.....	.....	.....	Pleasant.....	
Ashuelot, Shanghai, China.....	30.62	777.7	42	5.6	35	1.7	80	NNW	.....	.....	3	.....	10	.....	.....	.....	.....	.....	.....	D. clouds.....	
Canonicus, New Orleans, La.....	29.80	756.9	48	8.9	64	17.8	89	ESE	.....	.....	3	.....	8	.....	.....	.....	.....	.....	.....	Cloudy.....	
Colorado, New York, N. Y.....	30.61	777.5	33	0.6	33	0.6	80	N	5	2.2	.....	.....	4	.....	N	0	0	.....	.....	Light fog.....	
Despatch, Constantinople, Turkey.	30.29	769.4	76	24.4	45	7.2	92	NE	.....	.....	5–6	.....	10	.....	NE	.....	.....	.....	.....	Rainy.....	
Essex, St. Paul de Loanda, Lower Guinea.	29.74	755.4	83	28.3	86	30.0	88	W	.....	.....	2	.....	4	.....	.....	.....	.....	Smooth	.....	D. clouds.....	
Franklin, Norfolk, Va.....	30.61	777.5	52	11.1	52	11.1	86	ENE	8	3.6	.....	.....	9	.....	ENE	0	0	.....	.....	Overcast.....	
Guard, Lisbon, Portugal.....	30.36	771.1	59	15.0	56	13.3	19	NE	.....	.....	4	.....	0	.....	.....	.....	.....	.....	.....	Hazy.....	
Lackawana, Mare Island, Cal.....	30.12	765.0	.....	.....	56	13.3	87	SSE	.....	.....	0–1	.....	10	.....	.....	.....	.....	.....	.....	D. clouds. ...	
Marion, Villefranche, France.....	30.17	766.3	56	13.3	54	12.2	44	Calm	.....	.....	0	.....	9	.....	.....	0	0	Smooth	S	D. clouds.....	
Michigan, Erie, Pa.....	29.92	760.0	50	10.0	45	7.2	84	S	.....	.....	1	.....	0	.....	.....	.....	.....	.....	.....	Fair	
Monocacy, Hong-Kong, China	30.54	775.7	58	14.4	56	13.3	75	N&E	.....	.....	1	.....	10	.....	S&W	Blank	Blank	.....	.....	D. clouds.....	
New Hampshire, Port Royal, S.C.....	30.40	772.1	.....	.....	56	13.3	100	NNE	19	8.5	.....	.....	10	.....	.....	0	0	.....	.....	Foggy	
Omaha, Valparaiso, Chili.....	30.00	762.0	64	17.8	61	16.1	71	W	3	1.3	.....	.....	0	.....	.....	0	0	.....	.....	Pleasant.....	
Onward, Callao, Peru.....	29.94†	760.5†	78	25.6	75.5	24.2	86	SE	.....	.....	3	.....	4	.....	.....	.....	.....	Long	W	Hazy.....	
Ossipee, Norfolk, Va.....	30.49	774.4	67	19.4	53	11.7	86	NE	.....	.....	3	.....	10	.....	ENE	.....	.....	.....	.....	Misty.....	
Palos, Shanghai, China.....	30.63	778.0	47	8.3	36	2.2	80	NW	.....	.....	3	.....	10	.....	Calm	.....	.....	.....	.....	Cloudy.....	
Plymouth, Aspinwall.....	29.89	759.2	81	27.2	80	26.7	96	E	.....	.....	1	.....	2	.....	.....	.....	.....	Smooth	NE	Clear.....	
Powhatan, Norfolk, Va.....	.....	.....	.....	.....	53	11.7	93	NE	12.0	5.4	.....	.....	10	.....	.....	0	0	.....	.....	Overcast.....	
Ranger, Shanghai, China.....	30.77	781.5	.....	.....	43	6.1	75	NNW	.....	.....	3	.....	10	.....	N&W	.....	.....	.....	.....	Overcast.....	
Rio Bravo, Brownsville, Texas.....	29.71	754.6	.....	.....	55	12.8	††	SW	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	Foggy	
Santee, Annapolis, Md.....	30.58	776.7	42	5.6	40	4.4	82	NE	.....	.....	4	.....	10	.....	.....	0	0	.....	.....	Cloudy...	
Saratoga, Norfolk, Va.....	.....	.....	.....	.....	48	8.9	92	NE	.....	.....	3	.....	10	.....	NE	0	0	.....	.....	Overcast.....	
St. Louis, League Island, Pa.....	30.45	773.4	37	2.8	38	3.3	90	ENE	8	3.6	.....	.....	2	.....	NE	0	0	.....	.....	Fair.....	
Swatara, Norfolk, Va.....	30.55	776.0	.....	.....	55	12.8	87	NE	.....	.....	2	.....	10	.....	N&E	.....	.....	.....	.....	Hazy..	
Tennessee, Shanghai, China	30.70	779.8	72	22.2	35	1.7	80	NNW	.....	.....	2	.....	8	.....	NW	0	0	.....	.....	D clouds.....	
Trenton, Villefranche, France.....	30.27	768.8	.....	.....	54	12.2	60	NNW	4	1.8	.....	.....	9	.....	N&W	0	0	.....	.....	D. clouds.....	
Vandalia, Naples, Italy.....	30.14	765.5	54	12.2	50	10.0	64	NE	.....	.....	1	.....	3	.....	E	.....	.....	.....	.....	D. clouds....	
Wabash, Boston, Mass.....	30.64	778.2	43	6.1	24	— 4.4	.....	NW	8	3.6	.....	.....	3	.....	Calm	0	0	.....	.....	D. clouds.....	
Wyoming, Washington, D. C.....	30.71†	780.0†	.....	.....	44	6.7	.....	NE	.....	.....	4	.....	10	.....	.....	.....	.....	.....	.....	D. clouds.....	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. The position given for the Plymouth is that at noon, local time, instead of that at 7:35 a. m., Washington time.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.	Character.	Direction from—		
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—				
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama, Victoria, B. C.			29.65*	753.1*	51	10.6		S			2		10						Capt. Seabury.
S. S. City of Peking, N. 30° 24′, E. 159° 28′			30.15*	765.8*	69	20.6	100	SW			4		7		WSW	Mod'ate	W	D. clouds	Lt. Z. L. Tanner, U.S.N.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio, Hong-Kong, China			30.30	769.6	59	15.0		N			3							Blue sky	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

NOTE.—The originals give the wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. *Aneroid.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.

S. S. Belgic																			Capt. John Metcalf.
S. S. Gaelic, Hong-Kong, China			30.37†	771.4†	59	15.0	82	NE			4		Haze					Hazy	Capt. W. H. Kidley
S. S. Oceanic, N. 33° 25′, W. 135° 2′			30.03	762.7	60	15.6	82	NW			3		4		W	Swell	W	D. clouds	Capt. H. Parsell.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. †Aneroid.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig, N. 51° 20′, W. 15° 47′			30.51	774.9	44.0	6.7	84	S			2		10		S	Smooth		Haze; smoke	Capt. Undütsch.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds.

UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Lo'wr	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second	0—10.	0—10.	0—10.	From—	From—	Character	Direction From—		
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, N. 39° 22′, W. 70° 49′			30.60*	777.2*	51	10.6	??	ENE			5		7		NNW	Light	NNE	D. clouds	Captain Sargent.
S. S. Ohio, Liverpool			30.47	773.9	51	10.6	93	WNW			1		10		WNW			Hazy	Captain Morrison.
S. S. Pennsylvania, N. 43° 32′, W. 58° 3′			29.94†	760.5†	33	0.6	90	N			7		10		N	Heavy	N	Cloudy	Captain Harris.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. * Aneroid † Corrected for temperature and elevation, instrumental error not known.

RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

S. S. Nederland																			Capt. Randle.
S. S. Switzerland																			Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

S. S. Hibernian																			Capt. W. Richardson.
S. S. Scandinavian, N. 41° 36′, W. 65° 24′			30.42	772.7	27	— 2.8		N			7		1			Short; high.	N	Blue sky	

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, Boothbay, Maine			30.56	776.2	26	— 3.3	63	N	2	0.9			0					Clear	Capt. James Jorgensen.

NOTE.—The originals for the schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer. U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON DECEMBER 22, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:48 P. M. GREENWICH mean time.
0:58 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:38 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours	.....	.....	30.20	769.4	57.2	14.0	57	Calm	.....	.....	0	.....	4	.....	.....	0	0	Cloudy	Michel.
Algiers	.....	.....	30.22	767.6	50.0	10.0	92	WSW	.....	.....	2	.....	9	.....	.....	0.472	12.0	Covered	Peter.
La Calle	.....	.....	30.21	767.2	54.9	12.7	66	NW	.....	.....	3	.....	6	.....	.....	0.433	11.0	Cloudy	Fleury.
Tunis	.....	.....	30.12	765.0	53.8	12.1	67	W	.....	.....	3	.....	5	.....	.....	0.071	1.8	Cloudy	Jacques.
Sfax	.....	.....	30.21	767.2	53.6	12.0	.....	W	.....	.....	1	.....	4	.....	.....	0	0	Cloudy	Husson.
Saida	.....	.....	30.18	766.5	40.6	4.8	81	NE	.....	.....	1	.....	2	.....	.....	0	0	Fair	Millot.
Tebessa	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Bassières.
Geriville	.....	.....	30.18	766.6	37.8	3.2	93	N	.....	.....	2	.....	5	.....	.....	0	0	Cloudy	Lemalilot.
Laghouat	.....	.....	30.22	767.5	46.4	8.0	59	E	.....	.....	1	.....	0	.....	.....	0	0	Clear	Guyot.
Biskra	.....	.....	30.23	767.9	60.4	15.8	22	NE	.....	.....	1	.....	0	.....	.....	0	0	Clear	Kuntz.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 830? meters, or 2,919.9? feet; Tobessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m.; or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

Agram	29.86	758.5	30.46	773.7	21.9	— 5.6	73	SW	.....	.....	1	.....	10	.....	.....	0	0	.....	Prof. Ivan Stozir
Cracow, I. R. Observatory	29.69	754.2	30.55	775.9	6.2	—13.2	100	NE	.....	.....	2	.....	0	.....	.....	0	0	.....	Dr. Wierzbiski.
Eperies	29.46	748.3	30.43	772.8	17.1	— 8.3	85	N	.....	.....	1	.....	0	.....	.....	0	0	.....	Julius Mikolik.
Gratz	29.12	739.6	30.47	773.9	24.3	— 4.3	74	S	.....	.....	2	.....	5	.....	.....	0.008	0.2	.....	Andreas Rospini.
Hermannstadt	28.87	733.4	30.42	772.7	20.5	— 6.4	87	NE	.....	.....	2	.....	10	.....	.....	0	0	.....	Prof. Reissenberger.
Kremsmünster	29.03	737.3	30.49	774.5	19.4	— 7.0	89	Calm	.....	.....	0	.....	10	.....	.....	0	0	.....	Prof. C. Wagner.
Lemberg	29.42	747.3	30.52	775.1	14.0	—10.0	97	E	.....	.....	1	.....	10	.....	.....	0	0	.....	Dr. T. Stanecki.
Pola	30.13	765.3	30.25	768.3	42.1	5.6	61	E	.....	.....	2	.....	2cs	.....	.....	0	0	.....	I.R.Hydrographic Office.
Szathmar	29.95	760.8	30.46	773.7	22.1	— 5.5	77	SW	.....	.....	3	.....	3	.....	.....	0	0	.....	Johann Tamas, S. J.
Szegedin	30.13	765.2	30.43	772.9	25.6	— 3.6	78	N	.....	.....	1	.....	10	.....	.....	0	0	.....	Karl Stancel.
Trieste	30.16	766.0	30.26	768.6	38.7	3.7	43	ENE	.....	.....	2	.....	1	.....	.....	0	0	Clear	P. Busin.
Vienna	29.71	754.7	30.48	774.1	19.4	— 7.0	70	Calm	.....	.....	0	.....	4	.....	.....	0	0	.....	I. R. Central Met. Obs'y.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

Arlon	28.87	733.2	30.48	774.3	23.5	— 4.7	96	SSW	.....	.....	0	.....	10	.....	.....	0	0	Dense fog	Prof. M. Passau.
Brussels	30.17	766.3	30.38	771.7	28.8	— 1.8	96	SSW	.....	.....	4	.....	10	.....	.....	0.035	0.90	Foggy	Royal Observatory.
Furnes	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. E. de Cae.
Maeseyck	30.24	768.1	30.37	771.4	27.5	— 2.5	93	S	.....	.....	4	.....	10	.....	.....	0.047	1.2	.....	M. Pierrot.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	29.40	746.7	29.50	749.3	51.4	10.8	.....	SW	27	12.1	.....	.....	3	.....	.....	0.050	1.27	Squally.....	W. Boswell.
Ardrossan	29.75	755.6	29.77	756.1	49	9.4	.....	SW	.....	.....	6	.....	9	.....	.....	.....	.....	Raining.....	William McNeil.
Armagh, Observatory	.....	.....	29.86	758.4	49.2	9.6	.....	SSW	27	12.1	.....	.....	10	.....	.....	.....	.....	Squally.....	S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)	.....	.....	30.04	763.0	49.9	9.9	.....	WSW	33	14.8	.....	.....	10	.....	.....	.....	.....	Overcast.....	John Hartnup.
Birr Castle, (Parsonstown)	.....	.....	30.07	763.8	49.7	9.8	.....	SW	.....	.....	3	.....	10	.....	.....	.....	.....	Overcast.....	J. Dreyer.
Bradford, Yorkshire	29.58	751.3	29.97	761.2	49.7	9.8	.....	SW	.....	.....	1	.....	10	.....	.....	0.01	0.3	Overcast.....	J. McLandsborough.
Bridgetown, (Barbados)	29.91	759.7	29.94	760.5	82	27.8	.....	NE	.....	.....	1	.....	3	.....	.....	.....	.....	D. clouds.....	Pvt. G. W. Roberts, A.
Cambridge, Observatory	.....	.....	30.15	765.8	47.0	8.3	.....	SW	.....	.....	1	.....	10	.....	.....	.....	.....	Drizzling.....	H. Todd. [H. C.
Cardington	.....	.....	30.21	767.3	47.0	8.3	.....	SW	.....	.....	1	.....	10	.....	.....	.....	.....	Overcast	John McLaren.
Chatham, School M. E.	30.28	769.1	30.41	772.4	44.2	6.8	.....	SW	.....	.....	1	.....	10	.....	.....	.....	.....	Overcast.....	Lt. W. G. Morris, R. E.
Dartmoor	28.83	732.3	30.35	770.9	43.8	6.6	.....	SW	.....	.....	4	.....	10	.....	.....	.....	.....	Rain and fog	Alexander Watt.
Davos Platz (Switzerland)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Francis Redford, M. A.
Donaghadee	29.84	757.9	29.87	758.7	49	9.4	.....	WSW	.....	.....	5	.....	10	.....	.....	.....	.....	Overcast.....	J. Mac Gowan.
Dover	30.25	768.3	30.28	769.1	44	6.7	.....	SSW	.....	.....	5	.....	10	.....	.....	.....	.....	Overcast.....	J. Costello.
Eccles, (near Manchester)	.....	.....	30.05	763.3	49.4	9.7	.....	SW	4.2	1.9	.....	.....	10	.....	.....	.....	.....	Gloomy.....	Thomas Mackereth.
Falmouth, Observatory	30.10	764.5	30.33	770.4	49.3	9.6	.....	WSW	.....	.....	4	.....	10	.....	.....	.....	.....	Rain and fog	The Staff.
Fort Napier, (Natal)	27.77	705.4	30.00	762.0	61.3	16.3	.....	E	.....	.....	2	.....	10	.....	.....	.....	.....	Drizzling.....	Pvt. G. Salmon, A. H. C
Free Town, (Sierra Leone)	.....	.....	29.84	757.9	87	30.6	.....	Calm	.....	.....	0	.....	3	.....	.....	.....	.....	D. clouds.....	
Galway, Queen's College	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	30.09	764.3	30.15	765.8	59.0	15.0	.....	E	.....	.....	5	.....	2	.....	.....	.....	.....	D. clouds.....	Corpl. C. Aitken, A.H.C.
Glasgow, Observatory	29.52	749.8	29.73	755.1	48.0	8.9	.....	SSW	.....	.....	8	.....	10	.....	.....	.....	.....	Rain-squalls	D. G. Maclean.
Great Yarmouth	30.16	766.1	30.17	766.3	45	7.2	.....	WSW	.....	.....	3	.....	7	.....	.....	.....	.....	Misty.....	G. T. Watson.
Greenwich, Royal Obs'y	30.06	763.5	30.24	768.1	47.6	9.7	.....	SW	.....	.....	2	.....	10	.....	.....	.....	.....	Overcast.....	The Staff, for G. B. Airy
Guernsey	30.13	765.3	30.35	770.9	50	10.0	.....	SW	.....	.....	1	.....	10	.....	.....	.....	.....	Misty.....	Dr. S. E. Hoskins, F.R.S.
Helston	.....	.....	30.32	770.1	51	10.6	.....	SW	.....	.....	1	.....	10k	.....	.....	0.03	0.8	Misty.....	M. P. Moyle.
Holyhead	29.97	761.2	30.02	762.5	49	9.4	.....	SW	.....	.....	6	.....	10	.....	.....	.....	.....	Misty.....	John Tilston.
Jersey	30.10	764.5	30.40	772.1	48.5	9.2	.....	SW	.....	.....	4	.....	10	.....	.....	.....	.....	Drizzling.....	J. Fisher.
Kew, Observatory	.....	.....	30.24	768.1	48.0	8.9	.....	SW	14	6.3	.....	.....	10sd	.....	.....	.....	.....	Threatening	The Staff.
Kingstown	30.01	762.2	30.04	763.0	51	10.6	.....	W	.....	.....	4	.....	9	.....	.....	.....	.....	Overcast.....	George Mitchell.
Leicester, Museum	.....	.....	30.12	765.0	47.9	8.8	.....	SW	.....	.....	2	.....	10	.....	.....	.....	.....	Overcast.....	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	30.00	762.0	30.09	764.3	54.2	12.3	.....	SE	.....	.....	2	.....	6	.....	.....	.....	.....	D. clouds.....	Sgt. Fred. Travis, A. H.
Nairn	29.35	745.5	29.44	747.8	51	10.6	.....	SW	.....	.....	5	.....	10	.....	.....	.....	.....	Overcast.....	W. D. Penny. [C.
Nassau, (Bahamas)	.....	.....	30.15	765.8	74.0	23.3	.....	NE	.....	.....	4	.....	8	.....	.....	.....	.....	D. clouds.....	C. S. Duncombe.
Nottingham, Observatory	29.87	758.7	30.06	763.5	49.3	9.6	.....	SSW	.....	.....	6	.....	10k	.....	SW	0	0	Overcast.....	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.56	750.8	30.09	764.3	47.9	8.8	.....	SW	.....	.....	5	.....	10	.....	.....	.....	.....	Overcast.....	Rev. Stephen Whitty
Oxford, Radcliffe Obs'y	.....	.....	30.20	767.1	50	10.0	.....	SW	.....	.....	3	.....	10	.....	.....	.....	.....	Gloomy.....	Mr. Lucas.
Plymouth	30.24	768.1	30.32	770.1	49.5	9.7	.....	Calm	.....	.....	0	.....	10	.....	.....	.....	.....	Misty	John Merrifield.
Roche's Point	30.14	765.5	30.19	766.8	50	10.0	.....	WSW	.....	.....	3	.....	10	.....	.....	.....	.....	Foggy	W. Kennedy.
Saint Ann's Head	.....	.....	30.21	767.3	51	10.6	.....	WSW	.....	.....	4	.....	10	.....	.....	.....	.....	Misty.....	John C. Walker.
Sandwick Manse, (Orkneys.)	.....	.....	29.21	741.9	50.1	10.1	.....	W	23	10.3	.....	.....	10	.....	.....	.....	.....	Raining.....	Rev. C. Clouston, LL. D
Scutari, Cemetery, (Turkey)	.....	.....	30.20	767.1	37.0	2.8	.....	N	.....	.....	3	.....	10	.....	.....	.....	.....	Raining.....	Sergt. W. H. Lyne.
Sheffield	29.72	754.9	30.00	762.0	50.0	10.0	.....	SSW	.....	.....	4	.....	9	.....	.....	0.01	0.3	Overcast.....	W. F. Cooper.
Silloth Rectory	29.82	757.4	29.86	758.4	48.0	8.9	89	SW	.....	.....	6	.....	10	.....	.....	0.070	1.78	Overcast.....	Rev. F. Redford, M. A.
Stonyhurst, Observatory	.....	.....	.....	.....	46.9	8.3	.....	SW	.....	.....	5	.....	10	.....	.....	.....	.....	Overcast.....	Rev. S. J. Perry.
Stornoway, Lews C., (Hebr.)	.....	.....	29.46	748.3	45	7.2	.....	SW	.....	.....	6	.....	10	.....	.....	.....	.....	Raining.....	John Smith.
Stratfield Turgiss	30.04	763.0	30.27	768.8	47.9	8.8	.....	SW	.....	.....	1	.....	10	.....	.....	.....	.....	Overcast.....	Rev. C. H. Griffith, F.M.S
Thurso	.....	.....	29.27	743.4	53	11.7	.....	WSW	.....	.....	6	.....	8	.....	.....	.....	.....	Showery.....	John Trotter.
Truro, Royal Institution	.....	.....	30.26	768.6	51	10.6	.....	SW	.....	.....	2	.....	8	.....	.....	.....	.....	Gloomy.....	W. Newcombe.
Valencia, Observatory	.....	.....	30.17	766.3	50.6	10.3	.....	WSW	33	14.8	.....	.....	10	.....	.....	.....	.....	Misty.....	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Henry Mercer.
Cape Good Hope, Obs'y	29.73	755.1	29.77	756.1	76.0	24.4	42	SSE	17	7.6	.....	0	1	.....	.....	.....	.....	.....	The Staff, for E. J. Stone.
Hobart Town, (Tasmania)	.....	.....	29.42	747.3	66.0	18.9	83	NW	.....	.....	2	.....	9kn	.....	.....	.....	.....	Raining.....	Francis Abbott, F.R.A.S.
Leith, Restalrig Park	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Andrew Gibb.
Mauritius, Observatory	29.74	755.4	29.92	760.0	81.8	27.7	70	ESE	21.0	9.4	.....	1	6	.....	ENE	0.03	0.8	Squally.....	C. Meldrum.
Melbourne, Observatory	29.57	751.1	29.66	753.3	59.0	15.0	87	SE	10	4.5	.....	.....	10	.....	.....	.....	.....	Raining.....	R. L. J. Ellery.
Monach L't-house, (Hebrides)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Youngclause.
North Unst, (Shetland Is.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Robert Burnet.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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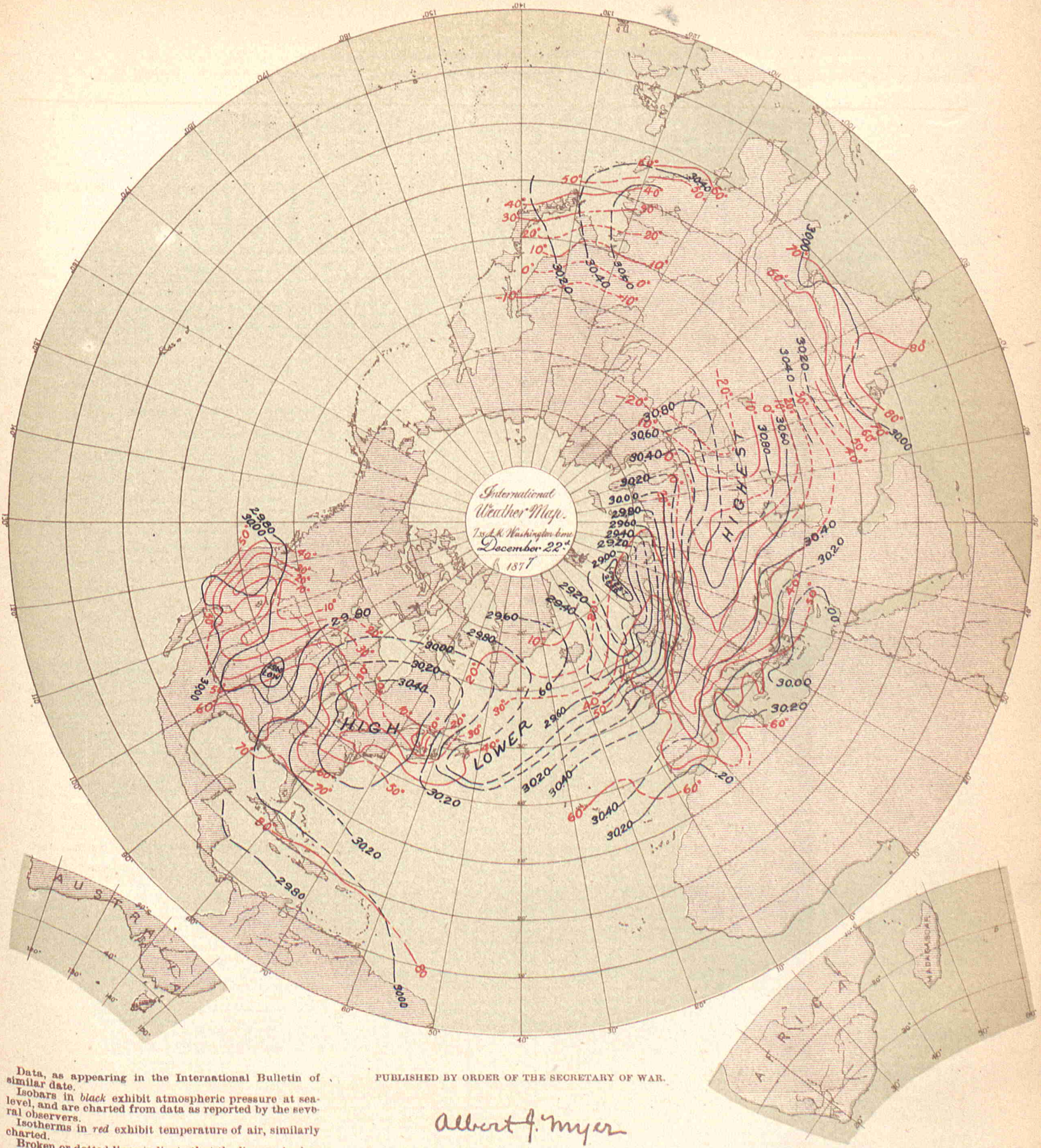
NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m.

Marine Series. Vessels.	Sea or swell. Height scale 0—9	Sea or swell. Direction from—	Weather.	Observer.
S. S. Algeria, N. 41° 5′, W. 53° 35′	20*	NNW	Showery.....	Capt. W. Watson.
S. S. Batavia	.....	.....	.....	Capt. J. E. Mouland.
Ship Camperdown	.....	.....	.....	Capt. A. T. Miller.
Brig Catherine	.....	.....	.....	Capt. Adam Smith.
Barque Celeste	.....	.....	.....	Capt. D. F. McKechnie.
S. S. Hibernia	.....	.....	.....	Capt. W. R. Cato
Barque Maroon	.....	.....	.....	Capt. A. T. Brown.
Ship Mikado	.....	.....	.....	Capt. C. C. Prehn.
Royal Alice, N. 42° 55′, W. 52° 0′	8	W	Hailing.....	Capt. E. M. Hughes.
S. S. Seine	.....	.....	.....	Capt. H. Manning.
Barque Sorata	.....	.....	.....	Capt. Jas. J. Price.
Schooner Traveller	.....	.....	.....	Capt. Alex. Simpson.
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. *Feet.



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
San José	26.18	665.0	.....	.....	69.6	17.5	90	NE	.....	.....	3	.....	1k	.....	.....	0	0	.....	Federico Maison.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	30.12	765.1	30.17	766.3	28.6	— 1.9	90	SSW	.....	.....	4	.....	10	.....	.....	.....	.....	Foggy	.....
Fanöe	29.79	756.6	29.81	757.1	39.0	3.9	97	SW	.....	.....	6	.....	10	.....	.....	.....	.....	.....	.....
Godthaab, (Greenland)	29.04	760.5	29.08	761.6	25.2	— 3.8	.....	WSW	.....	.....	4	.....	10	.....	.....	.....	.....	Snowing	.....
Stykkisholm, (Iceland)	29.61	752.0	29.65	753.1	12.9	—10.6	93	NE	.....	.....	6	.....	8	.....	.....	.....	.....	.....	.....
Thorshavn, (Faröe)	29.20	741.7	29.24	742.6	30.0	— 1.1	69	N	.....	.....	2	.....	8	.....	.....	.....	.....	.....	.....
Vestervig	29.63	752.6	29.80	756.9	41.4	5.2	100	SW	.....	.....	7	.....	10	.....	.....	.....	.....	Raining	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

Alençon, Normal School	29.92	760.0	30.47	774.0	43.7	6.5	69	SW	.....	.....	1	.....	10	.....	.....	0	0	Covered	Colignon, Director.
Amiens, Normal School	30.33	770.3	30.43	773.0	30.2	— 1	92	ESE	.....	.....	3	.....	0	.....	.....	0	0	Covered	Bonvarne, Director.
Avignon, Normal School	30.25	768.3	30.33	770.3	37.0	2.8	52	N	.....	.....	2	.....	0	.....	.....	0	0	Very clear	Mr. Giraud, Director
Bar-sur-Seine	29.88	758.9	30.49	774.5	26.2	— 3.2	87	NE	.....	.....	1	.....	10	.....	.....	0	0	Covered	C. Saillard.
Beaumette Obs'y (Angers)	30.27	768.8	30.45	773.4	30.7	— 0.7	86	S	2.0	0.9	.....	.....	.....	.....	N	0	0	.....	Albert Cheux.
Beauvais	30.15	765.8	30.46	773.6	32.9	0.5	85	SSW	.....	.....	1	.....	10	.....	.....	0	0	Covered	Normal School.
Besançon	29.52	749.8	30.48	774.3	27.0	— 2.8	.....	E	.....	.....	3	.....	0	.....	.....	0	0	Clear	Normal School.
Bourg-en-Bresse	29.56	750.8	30.48	774.1	27.1	— 2.7	92	NW	.....	.....	2	.....	8ck	.....	NW	0	0	Cloudy	Normal School.
Bourges, Normal School	29.93	760.1	30.52	775.2	29.5	— 1.4	100	N	.....	.....	4	.....	5	.....	N	0	0	Cloudy	A. Wagner, Director.
Brest, Naval Observatory	30.11	764.8	30.33	770.4	48.4	9.1	92	SW	.....	.....	3	.....	10	.....	SW	0.049	1.25	Foggy	The Staff.
Carcassonne, Normal School	29.98	761.4	30.42	772.7	31.6	— 0.2	96	W	.....	.....	4	.....	1	.....	NW	0	0	Clear	Vateau, Director.
Caen	30.32	770.2	30.40	772.1	41.4	5.2	94	SW	.....	.....	4	.....	10	.....	SW	0	0	Covered	Normal School.
Chartres, Normal School	29.86	758.5	30.48	774.2	25.3	— 3.7	.....	SW	.....	.....	2	.....	10	.....	.....	0	0	Covered	Lequin, Director.
Châlons-sur-Marne, N. Sch'l	30.13	765.4	30.48	774.1	26.2	— 3.2	.....	S	.....	.....	2	.....	10n	.....	.....	0	0	Covered	T. Lelong, Director.
Clermont-Fd., Puy de D. Obs	28.99	736.3	30.44	773.1	30.2	— 1.0	68	N	.....	.....	1	.....	10	.....	N	0	0	Covered	Alluard, Director.
Commercy, Normal School	29.54	750.2	30.48	774.3	25.9	— 3.4	73	E	.....	.....	4	.....	10	.....	E	0	0	Covered	Dr. Goulet, Director.
Commune de Gréasque*	29.14	740.1	30.28	769.1	41.4	5.2	61	NW	.....	.....	2	.....	0	.....	.....	0	0	Clear	M. Kina.
Grenoble	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Normal School.
La Roche-sur-Yon, N. School	30.24	768.0	30.47	773.8	33.8	1.0	93	NNE	.....	.....	1	.....	8	.....	N	0	0	Very cloudy	Mouillot, Director.
Le Mans, Normal School	30.15	765.7	30.47	774.0	31.8	— 0.1	74	SE	.....	.....	2	.....	10	.....	.....	0	0	Covered	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.48	748.7	30.47	773.8	25.3	— 3.7	65	SW	.....	.....	2	.....	0	.....	.....	0	0	Clear	Voudez, Director.
Lorient, Naval Observatory	30.34	770.5	30.43	773.0	49.6	9.8	76	S	.....	.....	1	.....	10	.....	.....	0.024	0.6	Covered	T. Carré, Director.
Mâcon, Normal School	29.78	756.4	30.53	775.4	26.4	— 3.1	.....	Calm	.....	.....	0	.....	10	.....	.....	0	0	Covered	M. Marchal, Director.
Metz	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. A. Schuster, Dir.
Mirecourt	29.37	745.9	30.50	774.7	24.8	— 4	43	N	.....	.....	2	.....	10	.....	S	0	0	Covered	Normal School.
Nismes, Normal School	30.15	765.9	30.37	771.3	39.6	4.2	75	N	.....	.....	4	.....	0	.....	.....	0	0	Clear	Boyer, Director.
Orleans, Normal School	30.08	764.0	30.48	774.2	33.8	1	89	E	.....	.....	2	.....	10	.....	.....	0	0	Covered	Bernard, Director.
Paris, Observatory	30.20	767.1	30.16	773.6	27.9	— 2.3	82	S	.....	.....	1	.....	10	.....	.....	0	0	Misty	National Observatory.
Privas	29.31	744.5	30.42	772.7	43.7	6.5	60	N	.....	.....	4	.....	5	.....	N	0	0	Cloudy	Normal School
Rochefort, Naval Obs'y	30.45	773.3	30.48	774.1	31.3	— 0.4	100	ENE	.....	.....	3	.....	0	.....	.....	0	0	Clear	Lt. Decante, Director.
Rouen, Normal School	30.34	770.5	30.42	772.7	32.7	0.4	84	WNW	.....	.....	1	.....	10	.....	.....	0	0	Covered	F. Lucard, Director.
Tarbes, Normal School	29.28	743.8	30.43	772.8	30.6	— 0.8	97	W	.....	.....	2	.....	0	.....	.....	0	0	Clear	T. Hugues, Director.
Villefranche	29.71	754.7	30.48	774.3	25.3	— 3.7	85	SE	.....	.....	1	.....	10	.....	Calm	0	0	Covered	Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.78	756.3	29.80	757.0	78.8	26	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.81	46.	.....	L'Abbé Marchési.
Marseilles, Observatory	.....	.....	30.23	767.8	44.6	7.0	71	NW	.....	.....	1	.....	0	.....	.....	0	0	Clear	The Staff.
Mont-Louis	24.95	633.8	30.27	768.8	34.5	1.4	21	.....	7.4	3.33	.....	.....	.....	.....	WSW	0	0	.....	Mr. Falguère.
Nice	.....	.....	30.22	767.6	51.3	10.7	56	NE	.....	.....	2	.....	0	.....	.....	0	0	Clear	Dr. A. Niepce.
Paris, Montsouris Obs'y	30.15	765.9	30.43	772.9	26.6	— 3.0	89	S	.....	.....	2-3	.....	10	.....	.....	Inap.	Inap.	.....	Marié Davy, Director.
Perpignan	.....	.....	30.33	770.4	42.1	5.6	60	W	3.7	1.67	.....	.....	0	.....	.....	0	0	.....	Dr. Fines.
Pic du Midi, (Summit,) H. P.	21.93	539.2	.....	.....	21.0	— 6.1	.....	N	.....	.....	2	.....	0	.....	.....	.....	.....	Clear	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.58	573.4	.....	.....	24.8	— 4.0	.....	N	.....	.....	2	.....	0	.....	.....	0	0	Clear	Gen'l de Nansouty.
Saint Maur, (near Paris)	30.28	769.1	30.45	773.3	27.3	— 2.6	86	S	.....	.....	1	.....	10	.....	.....	0	0	.....	E. Renou.
Toulouse, Observatory	29.71	754.5	30.45	773.4	28.0	— 2.2	91	NW	.....	.....	2	.....	10	.....	.....	0	0	.....	The Staff.
Tours	30.25	768.3	30.45	773.3	30.2	— 1.0	.....	E	.....	.....	1	.....	7	.....	E	0	0	.....	C. Marquet.
Versailles, (near Paris)	.....	.....	30.42	772.6	28.8	— 1.8	83	S	.....	.....	1	.....	10	.....	.....	0	0	Covered	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.60	777.2	30.63	777.9	29.8	— 1.2	82	NW	10.3	4.6	.....	.....	1k	.....	.....	0	0	Clear	Mare Dechevrens, S. J.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published. At Mirecourt and Rochefort the cloud directions are apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet: Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg																			Prof. Dr. Hoh.
Berlin	30.22	767.6	30.40	772.1	21.6	— 5.8	75	S			1		3			0	0		Prof. Arndt.
Breslau	29.96	760.9	30.50	774.6	12.6	—10.8	86	ESE			1		1			0	0		Royal University Obs'y.
Carlsruhe	29.99	761.8	30.46	773.6	28 2	— 3.2	87	SE			1		0			0	0		Albert Senz.
Cassel	29.79	756.6	30.40	772.2	22.8	— 5.1	91	SSE			5		10	SE		0	0		Dr. H. Möhl.
Crefeld	30.20	767.0	30.36	771.1	28.4	— 2.0	79	SE			3		9			0	0		Director Lose.
Emden	30.28	769.0	30.31	769.9	28.2	— 2.1	86	S			5		10			0	0		Prof. Prestel.
Frankfort on the Main	30.11	764.9	30.51	775.0	25.9	— 3.4		S			1		10			0	0		Physical Society.
Friedrichshafen	29.12	739.7	30.53	775.4	19.8	— 6.8	84	NE			8		10			0	0		M. Wilhelm.
Hamburg	30.23	767.9	30.31	769.8	26.6	— 3.0	91	SSW			4		10			0	0	Covered	Captain F. Hegemann.
Kiel	30.20	767.1	30.22	767.6	27.7	— 2.4	87	SW			5		10			0	0		Prof. G. Karsten.
Königsberg, (Prussia)	30.39	771.9	30.47	773.9	12.0	—11.1	79	S								0	0	Cloudy	Prof. E. Luther.
Köslin			30.36	771.1	19.4	— 7.0		SSW			4		4			0	0		H. Müller.
Leipsic, Observatory	30.03	762.7	30.48	774.3	19.0	— 7.2	84	SSW			2		3			0	0		Prof. Bruhns.
Memel, Naval School	30.41	772.5	30.46	773.7	13.1	—10.5	97	S			5		10cs;ks						Reinbrech von Skalweit.
Neufahrwasser	30.42	772.7	30.44	773.1	20.3	— 6.5	79	S			4		10			0	0		A. Lothes.
Posen	30.40	772.1	30.71	780.0	19.8	— 6.8	71	S			3–4					0	0	Fair	Dr. Magener.
Strassburg Obs., (in Alsace)	29.91	759.6	30.50	774.8	24.8	— 4.0	84	Calm			0		4	W		0	0		Dr. Schur.
Stuttgart	29.44	747.8	30.46	773.7	23.0	— 5.0	76	SE			1		5	S		0	0		Prof. Schoder.
Treves, (Trier)	29.81	757.2	30.34	770.7	27.5	— 2.5	83	S			1		10			0	0	Foggy	Prof. Flesch.
Weissenburg, (Bavaria)	28.86	733.0	30.50	774.7	19.8	— 6.8	97	S	1	0.5			10			0	0	Covered	Dr. Von Bebber.
Wustrow, Naval School	30.30	769.6	30.35	770.9	24.1	— 4.4	82	S			5		10			0	0	Covered	E. F. Schütz.
German Naval Series.																			

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet: Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4. Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines, Königsberg, Posen and Wustrow in cubic zolls. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.80	756.9	30.20	767.1	46.6	8.1		NE			1							⅛ Clear	Dr. J. F. J. Schmidt.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and wind-force; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.92	760.0	29.98	761.4	70.6	21.4	83	SW	13.07	5.87			6			0	0	D. clouds	
Deesa	29.48	748.9	29.96	761.0	83.8	28.8	52	Calm					0			0	0	Blue sky	
Bombay	29.86	758.6	29.90	759.5	80.9	27.2	79	NW	10.0	4.5			0			0	0	Blue sky	
Poona	27.92	709.0	29.91	759.6	82.4	28.0	46	SE					0			0	0	Blue sky	
Lahore	29.30	744.1	30.08	764.2	55.3	12.9	91	Calm	1.9	0.8			10			6	0	Cloudy	
Belgaum	27.38	695.5	29.92	759.9	77.4	25.2	49	ESE	8.0	3.6			1			0	0	D. clouds	
Bangalore																			
Roorkee	29.13	739.9	30.07	763.9	59.8	15.4	88	SE	1.7	0.8			3			0	0		
Agra	29.47	748.4	30.06	763.5	62.8	17.1	78	E								0	0		
Trichinopoly																			
Nagpur	28.92	734.6	29.97	761.3	79.6	26.4	51	Calm	2.0	0.9			0			0	0	Blue sky	
Madras																			
Lucknow	29.66	753.4	30.06	763.4	60.4	15.8	88	Calm	1.0	0.4			0			0	0	Blue sky	
Allahabad	29.71	754.6	30.04	762.9	61.7	16.5	72	Calm	0.3	0.1			0			0	0	Blue sky	
Patna	29.88	759.0	30.07	763.8	66.4	19.1	59	W	0.6	0.3			0			0	0	Blue sky	
Hazaribagh	27.95	710.1	30.04	763.0	61.6	16.4	40	NW	6.0	2.7			0			0	0	Blue sky	
Cuttack	29.91	759.6	29.99	761.8	73.0	22.8	61	N	1.1	0.5						0	0	Blue sky	
Calcutta (Alipore)	29.99	761.7	30.01	762.3	62.0	16.7	72	NW	1.0	0.4			0			0	0	Blue sky	
Goalpara	29.58	751.4	29.98	761.6	69.9	21.1	59	Calm	1.7	0.8			0			0	0	Blue sky	
Chittagong	29.90	759.6	30.00	762.0	66.6	19.2	88		2.9	1.3			0			0	0	Blue sky	
Sibsagar	29.68	753.9	30.03	762.8	62.3	16.8	87	Calm	0.8	0.4			2			0	0	Blue sky	
Rangoon																			
Jubbulpore	28.64	727.4	30.03	762.7	72.5	22.5	74	SW	1.0	0.4			0			0	0	Blue sky	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,939 ft., or 911.0 m; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instru'tal error and temperature. Inches.	Barometer. Corrected for instru'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 1—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	22.20	564.0	30.29	769.4	20.7	— 6.3	69	E			1		0			0	0		Ab. Dom. Mongini.
Stelvio	22.17	563.0	30.32	770.2	17.4	— 8.1		ESE			1		0			0	0		Signora Ernesta Manfredi.
Udine	29.85	758.2	30.28	769.1	37.0	2.8	54	Calm	0	0			3			0	0		Prof. Giovanni Clodig.
Padua	30.17	766.4	30.29	769.3	36.9	2.7	62	WNW	0.7	0.3			3			0	0		Prof. Dott. Lorenzoni.
Vicenza	30.08	764.1	30.28	769.2	39.4	4.1	67	SE	2.6	1.1			0			0	0		Conte Alm. Da Schio.
Verona	30.04	763.0	30.27	768.9	42.6	5.9	61	NE			1		10			0	0		Dott. B. Bertoncelli.
Bergamo	28.94	735.0	30.31	769.9	37.4	3.0	63	SSW			2		0			0	0		Prof. Trionfini Carlo.
Domodossola																			Prof. Giuseppe Calza.
Milan	29.79	756.6	30.34	770.6	36.3	2.4		NNW			1		0			0	0		Ab. Gio. Capelli.
Pavia	29.97	761.1	30.33	770.3	33.6	0.9	92	W			2		0			0	0		Prof. Gio. Cantoni
Moncalieri	29.39	746.4	30.33	770.4	35.1	1.7	79	ENE	1.8	0.8			1			0	0		Prof. P. F. Denza.
Mondovi	28.32	719.3	30.30	769.7	35.6	2.0	71	NNW			2		0			0	0		Prof. D. C. Bruno.
Porto Maurizio	30.02	762.6	30.25	768.4	52.9	11.6	30	E			4		0			0	0		Prof. L. Vassallo.
Genoa	30.08	763.9	30.25	768.3	48.6	9.2	37	N	2.5	1.1			0			0	0		Prof. G. M. Garibaldi
Piacenza	30.07	763.8	30.34	770.5	30.7	— 0.7	96	W	3.1	1.4			10			0	0		Dott. G. Manzi.
Parma	30.01	762.3	30.35	770.9	38.5	3.6	70	NNW			4		0			0	0		Prof. P. Pigorini.
Florence	30.00	762.1	30.27	768.9	41.9	5.5	54	NE			6		4			0	0		Cav. F. Meucci.
Leghorn	30.14	765.6	30.23	767.8	41.4	5.2	55	NE	12.5	5.6			3			0	0		Prof. P. Monte.
Siena	28.96	735.5	30.20	767.1	38.5	3.6	62	ENE	6.3	2.8			8	E		0	0		Prof. L. Toscani.
Urbino	28.66	728.0	30.28	769.0	33.4	0.8		N			2		10			0	0		Prof. P. Serpieri.
Pesaro	30.28	767.9	30.28	769.2	38.3	3.5	73	W	36.0	16.1			10	NW		0	0		Prof. Luigi Guidi.
Ancona	30.13	765.2	30.24	768.0	39.2	4.0	80	W			6		10			0.012	0.3		Prof. F. DeBosis.
Grosseto	30.11	764.8	30.23	767.7	44.4	6.9	81	NNE			6		5	NE		0	0		Avv. P. Ponticelli.
Rome	29.98	761.4	30.16	766.0	49.3	9.6	49	N	7.4	3.3			0			0	0		Prof. P. A. Secchi.
Naples, O. U.	29.95	760.7	30.16	766.0	52.2	11.2	46	NNE			6		5	S		0	0		Prof. L. Palmieri.
Lecce																			Prof. C. De Giorgi.
Cosenza	29.28	743.7	30.19	766.9	44.8	7.1	70	SE	0	0			5			0	0		Prof. F. D. Conti.
Cagliari	29.82	757.5	30.02	762.5	44.1	6.7	90	NW			4		9	E		0.193	4.9		Prof. A. Pacinotti.
Riposto, (Sicily)	30.00	762.1	30.05	763.3	50.2	10.1	78	SE			2		10	E		1.614	41.0		Prof. F. Caflero.
Palermo	29.78	756.4	30.04	763.0	52.3	11.3	61	NE	3.1	1.4			9			0.008	0.2		Prof. G. Cacciatore.
Caltanissetta	28.06	712.7	30.05	763.2	42.1	5.6	83	E			4		10			0.256	6.5		Prof. A. Pagani.
Syracuse	29.98	761.6	30.06	763.5	51.4	10.8	77	NNW			2		9	SW		0	0		Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.61	752.0	30.16	766.1	48.2	9.0	52	NNE	4.3	1.9			3			0	0		Prof. F. Brioschi.

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,543.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Siena, 348.5 m., or 1,143.3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Tokei (Yeddo)																			The Observatory.
Tokei (Yeddo) University	30.10	764.5	30.21	767.2	35	1.7	70	NNW	4	1.8			10s			0	0	Cloudy	Prof. P. V. Veeder.

MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Aguascalientes																			I. N. Marin, M. D.
Córdoba																			C. Peña, M. D.
Cuernavaca																			L. Castillo, A. E.
Guadalajara																			Prof. L. Perez.
Guanajuato																			Prof. V. Fernandez.
Leon																			Prof. M. Leal.
Mexico	22.97	583.5	30.05	763.2	39.7	4.3	67	NW	0.8	0.38		0	0			0	0	Very fine	Central Observatory.
Orizaba																			N. N.
Orizaba																			I. Orozco, M. D.
Pabellon, (Aguascalts)																			M. V. de Leon, M. E.
Puebla																			Prof. B. Gonzalez.
Toluca																			Prof. C. Velazquez.
Tlacotalpam																			Prof. F. R. Bayly.
San Luis Potosi																			G. Barroeta, M. D.
Vera-Cruz																			Prof. J. Rossell.
Zacatecas																			J. A. Bonilla, M. E.
Puebla, (Catholic Institute)																			P. Spina. [M. M. D.
Morelia																			M. Tena, F. L. Páramo

NOTE.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,299 m., or 7,542.9 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosí, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.6 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

Furnished by the cooperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	30.34	770.6	30.34	770.6	30.9	— 0.6		S			4					0	0		
Groningen	30.21	767.2	30.26	768.6	29.1	— 1.0		SSW			3					0	0		
Helder	30.19	766.7	30.19	766.7	32.0	0.0		SSW			4					0.165	4.2		
Hellevoetsluis			30.30	769.7	31.1	— 0.5	100	S			3								
Utrecht	30.28	769.2	30.33	770.4	25.8	— 1.8	90	SSW			4		10			0	0	Dull	H. v d Brink.

NOTE.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	29.35	745.5	29.41	746.9	46.0	7.8	98	S	35.6	15.9	.....	.....	10	.....	.....	1.063	27.0	Raining	
Brône	28.82	732.1	28.86	733.1	33.1	0.6	89	N	9	4	.....	.....	10	.....	.....	.....	.....	Rain & snow	
Christiania	29.37	746.1	29.52	749.8	44.1	6.7	93	SSW	31	14	.....	.....	10	.....	.....	0	0	.....	
Tromsö	28.79	731.3	28.84	732.4	34.5	1.4	74	SW	13	6	.....	.....	10	.....	.....	0.307	7.8	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	30.37	771.3	30.56	776.2	57.9	14.4	78	E	5.6	2.5	.....	.....	6	.....	.....	0	0	.....	Dr. J. A. Sampaio
Campo Major	29.27	743.5	30.32	770.2	48.2	9.0	46	ENE	6.9	3.1	.....	.....	0	.....	.....	0	0	.....	Dr. A. M. R. dos Santos
Funchal, (Madeira)	30.11	764.9	30.19	766.7	64.4	18.0	44	NE	8.7	3.9	.....	.....	6	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.95	760.7	30.32	770.1	45.7	7.6	58	NNE	13.7	6.1	.....	.....	0	.....	.....	0	0	.....	The Staff.
Ponta Delgada, (Azores)	30.46	773.6	30.53	775.4	61.5	16.4	59	NE	3.8	1.7	.....	.....	3	.....	.....	0	0	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

Naval Series. Vessels.																Sea or swell. Height scale 0–9	Sea or swell. Direction from—		
S. Bartholomew Dias	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R, A. T. Pinha, Com'd't.
S. S. India	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. D. Pedroso, Com'd't.
S. S. Mindello	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. F. R. R. Bastos, Com'd't.
S. S. Sado	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. N. P. Sampaio, Com'd't.
S. S. Sá da Bandeira	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. Texeira da Silva, Com'd't.
S. S. Tejo	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. J. Ferreira,dos Amas,Com'd't
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals, except for S. S. Tejo, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the cooperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	30.10	764.5	30.57	776.4	11.3	—11.5	93	SE	7	3	.....	.....	0	.....	.....	.....	.....	.....	Astronomical Obs.
Wilna	30.17	766.4	30.64	778.3	9.0	—12.8	83	S	2	1	.....	.....	2	.....	.....	.....	.....	.....	Astronomical Obs.
Dorpat	30.12	765.0	30.47	773.8	13.6	—10.2	87	S	11	5	.....	.....	10n	.....	.....	.....	.....	.....	Prof. Dr. Weilbrauch.
St. Petersburg	30.27	768.8	30.28	769.2	18.5	— 7.5	93	SSW	25	11	.....	.....	10n	.....	.....	.....	.....	.....	Central Physical Obs.
Kuopio	29.39	746.4	29.72	754.8	32.9	0.5	100	SW	47	21	.....	.....	10	.....	.....	Blank	Blank	.....	Ch. Forsten.
Kieff	29.93	760.2	30.64	778.3	8.2	—13.2	84	E	7	3	.....	.....	0	.....	.....	.....	.....	Lunar halo.	Physical Cabinet.
Nikolaiev	30.42	772.6	30.49	774.4	17.8	— 7.9	83	NE	13	6	.....	.....	10n	.....	.....	.....	.....	.....	Kurdakof.
Kertch	30.28	769.1	30.30	769.6	29.3	— 1.5	82	NE	16	7	.....	.....	10	.....	.....	.....	.....	.....	Lagorio.
Moscow	30.21	767.4	30.84	783.4	1.4	—17.0	74	S	4	2	.....	.....	3ks	.....	.....	.....	.....	.....	Meteorological Obs.
Lugan	30.39	771.9	30.61	777.6	19.2	— 7.1	40	ENE	13	6	.....	.....	2c	.....	.....	.....	.....	.....	Meteorological Obs.
Archangel	29.81	757.2	29.83	757.7	22.6	— 5.2	96	S	22	10	.....	.....	10	.....	.....	.....	.....	.....	Ogorodnikof.
Tiflis	28.93	734.9	30.47	774.0	21.9	— 5.6	65	Calm	0	0	.....	.....	2ks	.....	.....	.....	.....	.....	Physical Observatory
Astrakhan	30.80	782.4	30.72	780.3	15.1	— 9.4	66	ENE	7	3	.....	.....	4cs	.....	.....	.....	.....	Light clouds	Sebastianof.
Kasan	30.46	773.7	30.76	781.4	6.8	—14.0	62	Calm	0	0	.....	.....	.....	.....	.....	.....	.....	Light clouds	Physical Cabinet.
Orenburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Tschernischef.
Ekaterinburg	29.52	749.9	30.59	777.0	— 0.2	—17.9	95	WSW	2	1	.....	.....	7	.....	.....	.....	.....	.....	Meteorological Obs.
Nukuss	30.33	770.4	30.60	777.1	2.1	—16.6	61	NE	13	6	.....	.....	9ks	.....	.....	.....	.....	.....	
Kasaly	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Bobrof.
Tashkend	28.78	730.9	30.71	780.1	3.4	—15.9	90	Calm	0	0	.....	.....	10n	.....	.....	.....	.....	.....	Michelson.
Barnaul	30.16	766.1	30.79	782.1	—25.1	—31.7	80	Calm	0	0	.....	.....	8	.....	.....	.....	.....	Light clouds	Meteorological Obs.
Yeniseisk	30.56	776.2	30.95	786.1	—25.8	—32.1	85	W	2	1	.....	.....	0	.....	.....	.....	.....	.....	Marks.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Usolzef.
Oorga	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Mossin.
Krotkowo*	30.33	770.3	30.85	783.6	5.5	—14.7	69	SW	2	1	.....	.....	.....	.....	.....	.....	.....	.....	Cand. Fatjanow.
Peking, (China)	30.50	774.8	30.65	778.4	15.6	— 9.1	35	NNW	27	12	.....	.....	0	.....	.....	.....	.....	.....	Physical Observatory
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	.....	.....	.....	.....	.....	Meteorological Obs.
Vladivostock	30.18	766.6	30.22	767.6	11.5	—11.4	71	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	
Nikolaievsk, on the Amoor	.....	.....	.....	.....	—16.1	—26.7	.....	Calm	0	0	.....	.....	2c	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall; for Krotkowo, the barometer reduced to freezing but not to sea-level. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft. * N. 53° 47′, E. 48° 34′.

SPANISH SERIES.

Furnished by the cooperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Rave, Director.
Bilbao, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Manuel de Naveran.
Burgos, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Domingo Martin y Perez.
Madrid, Royal Observatory	28.05	712.4	30.37	771.5	41.4	5.2	57	NE	9.7	4.34	.....	0	0	.....	.....	0	0	Clear.	The Staff.
Murcia, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Olayo Diaz, Director.
Santiago, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.99	761.8	30.06	763.5	72.8	22.7	85	E	1.8	0.8	.....	8pc	3k	.....	.....	0	0	Cloudy	Benito Vines, S. J.
San Fernando, Naval Obs'y	30.15	765.7	30.25	768.3	56.3	13.5	54	E	15.9	7.1	.....	0	3	.....	ESE	0	0	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de PortoRico, W. I.	.....	.....	29.95	760.6	77.7	25.4	76	NE	15.7	7.00	.....	4cs	3kn	NE	NE	1.319	33.60	Cloudy	Leonardo de Tejeda, Chief of Engineers
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the cöoperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.26	743.3	29.30	744.3	36.7	2.6	.....	SW	.....	.....	7	.....	10	.....	.....	0	0	.....	
Umea	29.33	744.9	29.38	746.2	37.0	2.8	89	SW	.....	.....	8	.....	10	.....	.....	0	0	.....	
Hernosand	29.34	745.1	29.39	746.4	40.6	4.8	78	SSW	.....	.....	6	.....	10	.....	.....	0	0	.....	
Stockholm	29.70	754.4	29.88	758.9	30.6	— 0.8	92	SSW	.....	.....	6	.....	10	.....	.....	0.008	0.2	Snowing	
Wisby	30.10	764.5	30.16	766.0	32.7	0.4	82	WSW	.....	.....	8	.....	10	.....	.....	0	0	.....	
Sub-Series.																			
Upsala	29.74	755.3	29.81	757.2	30.9	— 0.6	92	SSW	24.6	11.0	.....	.....	10	.....	SW	0.148	3.75	.....	Dr. Hildebrandsson.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.95	735.3	30.47	773.8	25.5	— 3.6	83	NE	.....	.....	1	.....	10	.....	.....	0	0	Covered	The Observatory.
Zurich	28.75	730.2	30.50	774.8	21.0	— 6.1	86	E	.....	.....	1	.....	10	.....	.....	0	0	Covered	The Observatory.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—For Geneva the corresponding departures from the normal values are: Barometer, +7.7 mm; Thermometer, —5.5 cent.; Relative Humidity, +3 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	30.24	768.0	36.7	2.6	89	N	22	10.0	.....	.....	10	.....	N	0.138	3.5	.....	The Observatory.
Fao, (Persian Gulf)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salonica	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	B. Stefanidès.
Valona	.....	.....	30.11	764.7	50.2	10.1	.....	N	.....	.....	1	.....	10	.....	.....	0	0	Covered	A. Bertrand.
Varna	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Imperial Observatory.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.91	759.7	30.00	762.0	58.5	14.7	84	W	.....	.....	2	.....	10n	.....	W	0.77	19.6	Overcast	Prof. C. V. A. Van Dyck

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	30.43?	772.9?	30.42?	772.7?	5.5	—14.7	85	Calm	0	0	.....	3	.....	.....	.....	.....	.....	.....	Hon. J. Ferguson.
Brockville, Ontario	30.20	767.1	30.53	775.4	29	— 1.7	.....	E	1	0.4	.....	.....	10s	.....	E	0	0	Cloudy	W. R. Bigg.
*Chatham, N. B	.....	.....	30.44	773.2	3	—16.1	95	Calm	0	0	.....	Sclc	2cs	W	W	0	0	Fair	G. A. Blair.
Charlottetown, P. E. Island	30.34	770.6	30.38	771.6	23	— 5.0	77	W	8	3.6	.....	.....	8ks	.....	W	0.026	0.63	Cloudy	H. J. Cundall, C. E.
Cornwall, Ontario	30.30	769.6	30.51	774.9	25.6	— 3.6	97	E	.....	.....	1	.....	10s	.....	.....	0	0	Dull	James Smith, M. A.
Dalhousie, N. B	30.41	772.4	30.44	773.2	10.6	—11.9	80	W	.....	.....	1	.....	.....	.....	.....	0	0	Pleasant	H. A. Johnson.
Esquimault, B. C	29.67	753.6	29.72	754.9	44.3	6.8	83	SE	.....	.....	.....	9cs	0	.....	.....	0.08	2.0	Cloudy	W. H. Bevis.
*Father Point, Quebec	30.47	773.9	30.49	774.4	15	— 9.4	87	S	8	3.6	.....	.....	10n	.....	Calm	0	0	Threatening	J. McWilliams.
Fredericton, N. B	30.42	772.7	30.49	774.4	8.1	—13.3	86	NW	3.0	1.3	.....	2ck	0	.....	.....	0	0	Fair	Prof. Harrison.
*Fort Garry, Manitoba	29.12	739.6	29.96	761.0	36	2.2	98	SE	3	1.3	.....	Haze	Fog	SE	SE	0.502	12.75	Foggy	James Stewart.
Goderich, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	H. J. Strang, M. A
Granton, Ontario	29.31	744.5	30.45	773.4	39	3.9	100	E	.....	.....	1	0	0	.....	.....	0	0	Foggy	James Grant.
*Halifax, N. S	30.22	767.6	30.37	771.4	19	— 7.2	85	N	15	6.7	.....	0	5ks	.....	N	Inap.	Inap.	Fair	F. Allison, M. A.
Hamilton, Ontario	30.13	765.3	30.52	775.2	39.9	4.4	93	SE	.....	.....	1	10ck	.....	.....	.....	0	0	Misty	Geo. Dickson, M. A
Heart's Content, N. F	29.70	754.4	29.72	754.9	35	1.7	90	E	.....	.....	8	.....	10	.....	.....	0.50	12.7	Overcast	E. Weedon.
*Kingston, Ontario	30.18	766.6	30.54	775.7	31	— 0.6	97	NE	1	0.4	.....	.....	10s	.....	Calm	Inap.	Inap.	Cloudy	S. Woods, M. A
Little Glace Bay, N. S	30.09	764.3	30.13	765 3	24.0	— 4.4	.....	N	14	6.3	.....	.....	.....	.....	.....	0.26	6.6	Snow squalls	C. H. Rigby.
*Montreal, Quebec	30.32	770.1	30.54	775.7	24	— 4.4	95	Calm	0	0	.....	.....	Fog	.....	.....	Inap.	Inap.	Cloudy	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.77	756.1	30.49	774.4	35	1.7	99	NE	4	1.8	.....	.....	Fog	.....	NE	0.15	3.8	Foggy	Rev. R. Mosley.
Peterboro, Ontario	29.73	755.1	30.49	774.4	33.7	0.9	90	Calm	.....	.....	0	.....	.....	.....	.....	0	0	Misty	J. F. Jeffers, B. A.
Port Dover, Ontario	29.76	755.9	30.48	774.2	41	5.0	100	NE	5	2.2	.....	.....	Fog	.....	.....	0.01	0.3	Foggy	H. Morgan.
Port Hastings, N. S	30.18	766.6	30.24	768.1	25.7	— 3.5	.....	N	7	3.1	.....	.....	.....	.....	.....	0	0	Fine	Peter Grant.
Port Stanley, Ontario	29.78	756.4	30.46	773.7	38	3.3	98	E	3	1.3	.....	.....	Fog	.....	E	0	0	Foggy	M. Payne.
*Quebec, Quebec	30.15	765.8	30.50	774.7	18	— 7.8	68	Calm	0	0	.....	.....	10n	.....	Calm	0	0	Cloudy	Capt. Ashe, R. N
*Rockliffe, Ontario	30.05	763.3	30.54	775.7	28	— 2.2	90	Calm	0	0	.....	.....	10s	.....	Calm	0.02	0.5	Cloudy	W. H. McIntyre.
St. John, N. B	30.30	769.6	30.48	774.2	13	—10.6	90	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	G. Murdock, C. E.
*Saugeen, Ontario	29.71	754.6	30.43	772.0	44	6.7	92	S	1	0.4	.....	.....	10s	.....	.....	Inap.	Inap.	Cloudy	K. Stewart.
Stayner, Ontario	29.67	753.6	30.49	774.4	38	3.3	86	SE	5	2.2	.....	.....	Fog	.....	.....	0.02	0.5	Hazy	R. J. Cole.
Stratford, Ontario	29.17	740.9	30.50	774.7	39.3	4.1	99	Calm	0	0	.....	.....	Fog	.....	.....	0	0	Foggy	C. J. MacGregor, M. A.
*Sydney, C. B	30.15	765.8	30.18	766.6	25	— 3.9	77	NW	17	7.6	.....	.....	10n	.....	.....	0.10	2.5	Cloudy	T. C. Hill.
*Toronto, Ontario	30.11	764.8	30.51	774.9	38	3 3	96	NE	2	0.9	.....	.....	10n	.....	.....	0.04	1.0	Foggy	Magnetic Observatory.
Windsor, N. S	.....	.....	.....	.....	.....	.....	.....	N	0	0	.....	0	.....	.....	.....	0	0	Fair	Prof. John E. Oram.
Woodstock, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Montgomery.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	37.0	2.8	.....	E	.....	.....	.....	.....	10n	.....	.....	.....	.....	Raining	John Delany
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	30.23	767.8	30.47	773.9	35	1.7	80	Calm	0	0	.....	.....	10s	.....	Calm	Inap.	Inap.	Cloudy	
Alpena, Michigan	29.74	755.4	30.42	772.7	39	3.9	100	Calm	0	0	.....	.....	Fog	.....	Calm	0	0	Foggy	
Atlantic City, New Jersey	30.52	775.2	30.54	775.7	37	2.8	90	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Augusta, Georgia	30.'8	766.6	30.37	771.4	54	12.2	87	NE	8	3.6	.....	.....	10s	.....	E	Inap.	Inap.	Cloudy	
Baltimore, Maryland	30.52	775.2	30.57	776.5	45	7.2	76	SE	3	1.3	.....	5k	5s	Calm	Calm	0	0	Cloudy	
Barnegat, New Jersey	30.51	774.9	30.53	775.4	38	3.3	80	NW	8	3.6	.....	2c	0	NW	.....	0	0	Fair	
Bismarck, Dakota	28.05	712.5	29.75	755.6	34	1.1	100	NW	6	2.7	.....	.....	Fog	.....	.....	0.05	1.3	Foggy	
Boise City, Idaho	27.25	692.1	30.13	765.3	27	— 2.8	77	S	4	1.8	.....	0	0	.....	.....	Inap.	Inap.	Clear	
Boston, Massachusetts	30.33	770.4	30.50	774.7	35	1.7	61	SW	6	2.7	.....	8ck	Sm'e	NW	.....	0	0	Fair	
Brackettville, Texas	28.82	732.0	29.90	759.4	45	7.2	60	Calm	0	0	.....	0	0	.....	.....	0.01	0.3	Clear	
Breckenridge, Minnesota	28.90	734.0	29.90	759.4	43	6.1	100	SE	10	4.5	.....	.....	10s	.....	SE	0.11	2.8	Cloudy	
Brownsville, Texas	29.82	757.4	29.89	759.2	62	16.7	94	E	2	0.9	.....	0	2s	.....	Calm	0	0	Clear	
Buffalo, New York	29.73	755.1	30.46	773.7	43	6.1	97	Calm	0	0	.....	.....	10s	.....	Calm	0	0	Cloudy	
Burkes, Arizona	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Burlington, Vermont	30.24	768.1	30.52	775.2	31	— 0.6	69	N	4	1.8	.....	.....	10s	.....	Calm	0.03	0.8	Cloudy	
Cairo, Illinois	29.62	752.3	30.00	762.0	58	14.4	94	SE	13	5.8	.....	.....	10n	.....	S	0.50	12.7	Light rain	
Camp Grant, Arizona	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Camp Verde, Arizona	26.70	678.2	30.19	766.8	32	0.0	89	NW	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Campo, California	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Cape Hatteras, N. Carolina	30.43	772.9	30.44	773.2	54	12.2	93	NE	13	5.8	.....	2k	5s	NE	Calm	0.03	0.8	Fair	
Cape Henry, Virginia	30.50	774.7	30.53	775.4	47	8.3	85	NE	16	7.2	.....	.....	10s	.....	Calm	0	0	Cloudy	
Cape Lookout, N. Carolina	30.41	772.4	30.43	772.9	53	11.7	93	NE	19	8.5	.....	.....	10s	.....	NE	0.70	17.8	Cloudy	
Cape May, New Jersey	30.52	775.2	30.55	776.0	37	2.8	80	NE	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Charleston, South Carolina	30.31	769.9	30.38	771.6	55	12.8	93	NE	9	4.0	.....	.....	10n	.....	Calm	0.06	1.5	Light rain	
Cheyenne, Wyoming	23.84	605.5	29.78	756.4	27	— 2.8	53	NW	20	8.9	.....	0	5s	.....	SW	0	0	Fair	
Chicago, Illinois	29.43	747.5	30.13	765.3	47	8.3	85	SE	12	5.4	.....	.....	10s	.....	SE	0	0	Cloudy	
Cincinnati, Ohio	29.56	750.8	30.21	767.3	54	12.2	74	SE	3	1.3	.....	.....	10s	.....	SE	0	0	Cloudy	
Cleveland, Ohio	29.67	753.6	30.43	772.9	41	5.0	82	SE	9	4.0	.....	5cs	0	SW	.....	0	0	Fair	
Concho, Texas	27.95	709.9	29.67	753.6	44	6.7	83	W	1	0.4	.....	4c	0	W	.....	0	0	Cloudy	
Corsicana, Texas	29.39	746.5	29.86	758.4	51	10.6	93	SW	3	1.3	.....	0	8s	.....	SW	0	0	Cloudy	
Davenport, Iowa	29.34	745.2	29.98	761.5	55	12.8	93	SE	16	7.2	.....	.....	10n	.....	Calm	0.16	4.1	Light rain	
Deadwood, Dakota Ty	.....	.....	.....	.....	20	— 6.7	85	NW	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Denison, Texas	29.03	737.3	29.83	757.7	53	11.7	86	SE	7	3.1	.....	.....	10s	.....	S	0.25	6.3	Threatening	
Denver, Colorado	24.51	625.1	29.83	757.7	26	— 3.3	76	S	4	1.8	.....	8c	0	Calm	.....	0	0	Fair	
Detroit, Michigan	29.68	753.9	30.37	771.4	42	5.6	91	E	4	1.8	.....	2ck	2s	Calm	Calm	Inap.	Inap.	Fair	
Dodge City, Kansas	27.10	688.3	29.37	746.0	40	4.4	91	NW	32	14.3	.....	.....	10n	.....	NW	1.63	41.4	Light rain	
Dubuque, Iowa	29.33	745.0	30.03	762.7	50	10.0	100	E	6	2.7	.....	.....	10n	.....	E	0.09	2.3	Light rain	
Duluth, Minnesota	29.47	748.5	30.16	766.1	42	5.6	96	NE	12	5.4	.....	.....	Fog	.....	Calm	0.06	1.5	Foggy	
Eagle Pass, Texas	29.09	738.9	29.84	757.9	48	8.9	93	Calm	0	0	.....	0	Fog	.....	Calm	0	0	Clear	
Eastport, Maine	30.40	772.1	30.48	774.2	20	— 6.7	85	NW	6	2.7	.....	5ck	0	NW	.....	0	0	Fair	
Erie, Pennsylvania	29.69	754.1	30.43	772.9	42	5.6	91	SE	4	1.8	.....	2c	Fog	.....	.....	0	0	Fair	
Escanaba, Michigan	29.66	753.4	30.34	770.6	38	3.3	90	N	6	2.7	.....	.....	Fog	.....	.....	0.02	0.5	Dense fog	
Florence, Arizona	28.27	718.0	29.87	758.7	45	7.2	60	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Fort Bayard, New Mexico	23.92	607.6	29.92	760.0	30	— 1.1	10	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Fort Craig, New Mexico	25.43	645.9	.....	.....	23	— 5.0	73	N	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Fort Gibson, Indian Ter	29.22	742.2	29.74	755.4	56	13.3	93	S	12	5.4	.....	.....	10s	.....	S	0.22	5.6	Cloudy	
Fort Griffin, Texas	28.57	725.7	29.74	755.4	48	8.9	85	W	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	28.56	725.4	29.66	753.4	49	9.4	93	SW	1	0.4	.....	.....	10s	.....	S	0.02	0.5	Cloudy	
Galveston, Texas	29.89	759.2	29.93	760.2	58	14.4	97	S	4	1.8	.....	0	2ks	.....	SW	0.03	0.8	Fair	
Grand Haven, Michigan	29.61	752.1	30.27	768.8	48	8.9	85	E	16	7.2	.....	.....	10s	.....	E	0	0	Cloudy	
Indianapolis, Indiana	29.37	746.0	30.15	765.8	55	12.8	73	E	6	2.7	.....	.....	10n	.....	SE	0.02	0.5	Light rain	
Indianola, Texas	29.90	759.4	29.93	760.2	60	15.6	100	S	3	1.3	.....	.....	Fog	.....	Calm	0.17	4.3	Foggy	
Jacksboro, Texas	28.70	729.0	29.82	757.4	52	11.1	86	W	10	4.5	.....	.....	10s	.....	W	0	0	Cloudy	
Jacksonville, Florida	30.20	767.1	30.22	767.6	68	20.0	79	E	10	4.5	.....	5c	0	Calm	.....	0.12	3.0	Fair	
Keokuk, Iowa	29.25	742.9	29.85	758.2	55	12.8	93	SE	24	10.7	.....	.....	10n	.....	Calm	0.30	7.6	Light rain	
Key West, Florida	30.03	762.7	30.07	763.8	74.5	23.6	76	E	16	7.2	.....	2cs	2ks	SW	E	0.09	2.3	Cloudy	
Kittyhawk, North Carolina	30.46	773.7	30.49	774.4	51	10.6	100	NE	17	7.6	.....	0	8ks	.....	NE	0	0	Fair	
Knoxville, Tennessee	29.23	742.4	30.25	768.3	53	11.7	73	NE	8	3.6	.....	.....	10ks	.....	SW	0	0	Cloudy	
La Crosse, Wisconsin	29.31	744.5	30.05	763.3	53	11.7	73	SE	6	2.7	.....	10k	0	Calm	.....	0	0	Cloudy	
La Mesilla, New Mexico	25.94	658.9	30.09	764.3	29	— 1.7	78	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Laredo, Texas	.....	.....	.....	.....	56	13.3	93	Calm	0	0	.....	.....	Fog	.....	Calm	0	0	Foggy	
Leavenworth, Kansas	28.84	732.5	29.66	753.4	53	11.7	93	SE	5	2.2	.....	.....	10ks	.....	SE	0.12	3.0	Cloudy	
Los Angeles, California	29.56	750.8	29.99	759.4	47	8.3	85	N	7	3.1	.....	0	0	.....	.....	0	0	Clear	
Louisville, Kentucky	29.59	751.6	30.15	765.8	56	13.3	81	SE	7	3.1	.....	.....	10s	.....	SE	0.05	1.3	Cloudy	
Lynchburg, Virginia	29.80	756.9	30.51	774.9	47	8.3	77	Calm	0	0	.....	.....	10s	.....	SW	Inap.	Inap.	Cloudy	
Maricopa Wells, Arizona	.....	.....	.....	.....	41	5.0	65	N	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Marquette, Michigan	29.55	750.6	30.28	769.1	43	6.1	75	E	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Mason, Texas	28.24	717.3	29.99	761.7	53	11.7	86	SW	8	3.6	.....	.....	10s	.....	.....	0	0	Cloudy	
Memphis, Tennessee	29.66	753.4	29.98	761.5	59	15.0	94	SE	6	2.7	.....	.....	10s	.....	SE	1.00	25.4	Cloudy	
Milwaukee, Wisconsin	29.50	749.3	30.21	767.3	44	6.7	92	SE	7	3.1	.....	.....	8s; fg	.....	.....	0.01	0.3	Cloudy	
Mobile, Alabama	30.00	762.0	30.05	763.3	63	17.2	94	SE	6	2.7	.....	8c	2s	W	S	1.00	25.4	Cloudy	
Montgomery, Alabama	29.89	759.2	30.12	765.0	64	17.8	91	SE	9	4.0	.....	2c	8ks; hz	W	SW; SE	0.70	17.8	Cloudy	
Morgantown, West Virginia	29.34	745.2	30.45	773.4	38	3.3	71	Calm	0	0	.....	0	Fog	.....	.....	0	0	Foggy	
Mt. Washington, N. H.	23.92	607.6	30.28	769.1	23	— 5.0	73	N	39	17.4	.....	0	10s	.....	N	0	0	Fair	
Nashville, Tennessee	29.57	751.1	30.10	764.5	61	16.1	71	SE	13	5.8	.....	.....	10ks	.....	S	0.06	1.5	Cloudy	
New Haven, Connecticut	30.39	771.9	30.51	774.9	41	5.0	75	SW	3	1.3	.....	.....	10s	.....	Calm	0	0	Cloudy	
New London, Connecticut	30.45	773.4	30.50	774.7	40	4.4	73	NW	4	1.8	.....	0	10s	.....	NW	0	0	Cloudy	
New Orleans, Louisiana	29.94	760.5	30.00	762.0	57	13.9	94	SE	1	0.4	.....	.....	Fog	.....	Calm	0.08	2.0	Foggy	
Newport, Rhode Island	30.44	773.2	30.50	774.7	40	4.4	73	W	10	4.5	.....	.....	10ks	.....	.....	0	0	Threatening	
New York, New York	30.33	770.4	30.52	775.2	38	3.3	80	SW	13	5.8	.....	.....	10s; fg	.....	Calm	0	0	Cloudy	
Norfolk, Virginia	30.46	773.7	30.52	775.2	46	7.8	92	NE	6	2.7	.....	.....	10s; fg	.....	Calm	0	0	Cloudy	
North Platte, Nebraska	26.82	681.2	29.39	746.5	37	2.8	90	NW	24	10.7	.....	.....	10n	.....	NW	1.36	34.5	Light rain	
Olympia, Washington Ter.	29.82	757.4	29.86	758.4	37	2.8	90	SE	2	0.9	.....	.....	10s	.....	Calm	0.01	0.3	Threatening	
Omaha, Nebraska	28.61	726.7	29.66	753.4	53	11.7	93	E	7	3.1	.....	.....	10n	.....	Calm	0.14	3.6	Light rain	
Oswego, New York	30.18	766.6	30.51	774.9	44	6.7	84	Calm	0	0	.....	.....	10s	.....	Calm	0	0	Cloudy	
Pembina, Dakota	29.10	739.1	29.94	760.5	40	4.4	100	SE	4	1.8	.....	.....	10n	.....	SE	0.36	9.1	Light rain	
Philadelphia, Pennsylvania	30.52	775.2	30.57	776.5	38	3.3	81	SW	4	1.8	.....	0	Sm'e	.....	Calm	0	0	Clear	
Phœnix, Arizona	.....	.....	.....	.....	39	3.9	91	E	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Pike's Peak, Colorado	17.51	444.7	29.72	754.9	— 1	—18.3	68	NW	16	7.2	.....	8cs	0	N	.....	0	0	Cloudy	
Pioche, Nevada	23.98	609.1	29.74	755.4	30	— 1.1	67	W	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Pittsburg, Pennsylvania	29.59	751.6	30.41	773.2	39	3.9	91	E	2	0.9	.....	2c	Fog	Calm	Calm	0	0	Foggy	
Port Huron, Michigan	29.71	754.6	30.40	772.1	40	4.4	100	E	4	1.8	.....	.....	Fog	.....	Calm	0	0	Dense fog	
Portland, Maine	30.42	772.7	30.47	773.9	35	1.7	70	Calm	0	0	.....	8k	2s	N	N	0	0	Cloudy	
Portland, Oregon	29.92	760.0	30.02	762.5	35	1.7	90	S	4	1.8	.....	.....	10s	.....	S	0.03	0.8	Cloudy	
Prescott, Arizona	24.68	626.9	30.04	763.0	26	— 3.3	52	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Punta Rassa, Florida	30.12	765.0	30.14	765.5	70	21.1	83	NE	12	5.4	.....	8k	Haze	Calm	Calm	0	0	Cloudy	
Red Bluff, California	29.68	753.9	30.04	763.0	43	6.1	92	N	2	0.9	.....	2k	5s	Calm	Calm	0.16	4.1	Fair	

UNITED STATES SERIES.—Continued.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Rochester, New York	29.84	757.9	30.49	774.4	40	4.4	95	E	6	2.7	.....	.....	Fog	.....	Calm	0.06	1.5	Foggy	
Roseburg, Oregon	29.46	748.3	30.05	763.3	31.5	— 0.6	94	Calm	0	0	.....	10ck	0	Calm	.....	0	0	Cloudy	
Sacramento, California	29.96	761.0	30.05	763.3	51	10.6	93	Calm	0	0	.....	.....	10ks	.....	SW	0.20	5.1	Cloudy	
St. Louis, Missouri	29.36	745.7	29.92	760.0	57	13.9	94	SE	16	7.2	.....	.....	10n	.....	Calm	0.20	5.1	Light rain	
St. Marks, Florida	30.12	765.0	30.14	765.5	67	19.4	90	SE	15	6.7	.....	.....	10s	.....	SE	0.09	2.3	Cloudy	
St. Paul, Minnesota	29.14	740.1	29.96	761 0	47	8.3	92	E	6	2.7	.....	.....	10s	.....	Calm	0	0	Cloudy	
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salt Lake City, Utah	25.66	651.8	29.99	761.7	32	0.0	79	NW	4	1.8	.....	10k	0	W	.....	0.02	0.5	Cloudy	
San Antonio, Texas	29.19	741.4	29.78	756.4	50	10.0	94	SE	2	0.9	.....	0	0	.....	.....	0	0	Clear	
San Diego, California	29.88	758.9	29.95	760.7	49	9.4	85	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Sandusky, Ohio	29.08	738.9	30.38	771.6	47	8.3	85	SE	8	3.6	.....	4c	Fog	Calm	Calm	0	0	Fair	
Sandy Hook, New Jersey	30.50	774.7	30.52	775.2	40	4.4	82	W	14	6.3	.....	.....	10ks	.....	NW	0	0	Cloudy	
San Francisco, California	29.97	761.2	30.03	762.7	52	11.1	79	Calm	0	0	.....	0	8ks	.....	S	0.24	6.1	Fair	
Santa Fé, New Mexico	23.08	586.2	29.62	752.3	19	— 7.2	70	NE	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Savannah, Georgia	30.22	767.6	30.32	770.1	67	19.9	87	E	11	4.9	.....	.....	10s	.....	E	0.47	11.9	Cloudy	
Shreveport, Louisiana	29.73	755.1	29.95	760.7	55	12.8	93	S	2	0.9	.....	Haze	2s	S	Calm	0.46	11.7	Fair	
Smithville, North Carolina	30.39	771.9	30.42	772.7	52	11.1	93	N	10	4.5	.....	.....	10s	.....	Calm	Inap.	Inap.	Cloudy	
Springfield, Massachusetts	30.28	769.1	30.41	772.4	38	3.3	63	Calm	0	0	.....	.....	10s	.....	S	0	0	Cloudy	
Stockton, Texas	26.81	655.6	29.81	757.2	38	3.3	91	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Thatcher's Island, Mass	30.44	773.2	30.50	774.7	35	1.7	61	W	8	3.6	.....	8cs;ck	0	NW	.....	0	0	Fair	
Toledo, Ohio,	29.60	751.8	30.30	769.6	43	6.1	91	Calm	0	0	.....	5c	Sm'e	Calm	Calm	0	0	Fair	
Tucson, Arizona	.....	.....	.....	.....	33	0 6	50	E	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Tybee Island, Georgia	30.28	769.1	30.31	769.9	56	13.3	93	NE	22	9.8	.....	.....	10ks	.....	NE	0.11	2.8	Cloudy	
Umatilla, Oregon	29.71	754.6	.....	.....	30	— 1.1	89	Calm	0	0	.....	10k	0	W	.....	0	0	Cloudy	
Vicksburg, Mississippi	29.74	755.4	30.00	762.0	60	15.6	88	SE	8	3.6	.....	5k	0	SE	.....	0.24	6.1	Fair	
Virginia City, Montana	24.21	614.9	29.69	754.1	7	—13.9	77	Calm	0	0	.....	0	0	.....	.....	0.03	0.8	Clear	
Visalia, California	29.69	754.1	30.07	763.6	43	6.1	83	Calm	0	0	.....	0	1s	.....	Calm	0	0	Clear	
Washington, D. C.	30.44	773.2	30.56	776.2	43	6.1	75	S	3	1.3	.....	.....	10s	.....	S	0	0	Cloudy	
Wickenburg, Arizona	.....	.....	.....	.....	31	— 0.6	79	S	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Wilmington, N. Carolina	30.32	770.1	30.40	772.1	52	11.1	86	NE	8	3.6	.....	.....	10s	.....	Calm	0	0	Cloudy	
Winnemucca, Nevada	25.66	651.5	30.01	762.2	20	— 6.7	85	NE	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Wood's Holl, Mass	30.48	774.2	30.54	775.7	40	4.4	73	Calm	0	0	.....	.....	10s	.....	NW	0	0	Cloudy	
Yankton, Dakota	28.51	724.1	29.80	756.9	45	7.2	92	NE	5	2.2	.....	.....	10s	.....	Calm	0.09	2.3	Cloudy	
Yuma, Arizona	29.76	755.9	29.92	760.0	49	9.4	71	E	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Sub-Series.																			
York Factory, B. A.	29.89	759.2	29.95	760.7	18.0	— 7.8	92	SW	9	4.0	.....	.....	10n	.....	.....	0.02	0.5	Rain & snow	J. Fortescue, W. Wood.
Havana, Cuba, W. I.	30.02	762.5	30.04	763.0	73	22.8	85	SE	3.6	1.6	.....	8c	0	SW	.....	0	0	Cloudy	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.13	765.3	30.14	765.5	74	23.3	81	Calm	0	0	.....	2c	0	Calm	.....	0	0	.....	James Gall.
Navassa, W. I.	29.85	758.2	29.93	760.2	80	26.7	.....	NE	12	5.4	.....	.....	.....	.....	.....	0	0	Fair	F. M Everett.
St. Thomas, W. I.	.....	.....	.....	.....	76	24.4	68	E	7	3.1	.....	4c	8ks	NE	.....	Inap.	Inap.	Cloudy	G. O. Gellich.
Paramaribo, D. Guiana, S. A.	.....	.....	29.93	760.2	82	27.8	83	E	.....	.....	2	5k	6ks	E	.....	0.050	1.27	½ cloudy	C. J. Hering.
Batavia, Dutch Guiana, S. A	29.99	761.8	30.00	762.0	85.1	29.5	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0	Cloudy	Dr. H. Groot.
Medellin, Colombia, S. A.	25.21	640.3	.....	.....	68.8	20.4	80	Calm	.....	.....	0	.....	8ks	.....	.....	0.01	0.3	Cloudy	Thomas Herran.
Honolulu, Oahu, H. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Daniel Smith.
Makawao, Maui, H. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. L. Clarke.

Note.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo; for Batavia, the barometer reduced to freezing but not to sea-level. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Deadwood, (?); Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,848 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Ploche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,546 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.468 in.; Campo, 2.67 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington 6.36 in.; Pike's Peak, 12.21 in.; Ploche, 5.77 in.; Prescott, 5.58 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 m.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation

STATIONS AND VESSELS.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard, Mare Island, Cal.	30.02	762.5	51	10.6	49	9.4	93	NW	3	1.3	....	.....	9	.....	Calm	0	0	.....	.....	Threatening	
Navy Yard, Pensacola, Fla.	30.12	765.0	.....	.....	64	17.8	100	NE	7	3.1	....	.....	10	.....	.....	0.19	4.8	.....	.....	Foggy	
Navy Yard, Portsmouth, N.H.	30.48	774.2	62	16.7	30	— 1.1	??	NNW	.....	.....	1	.....	.....	.....	.....	0	0	.....	.....	Clear	
Naval Hospital, Yokohama, Japan	30.13	765.3	48	8.9	40	4.4	64	SE	.....	.....	1	.....	8k	.....	SSW	0	0	.....	.....	Cloudy	
Alliance, Smyrna, Turkey	30.18	766.6	60	15.6	47	8.3	77	ENE	.....	.....	1	.....	10	.....	ENE	.....	.....	.....	.....	Rainy	
Ashuelot. Shanghai, China	30.58	776.7	44	6.7	30	— 1.1	89	NW	.....	.....	2	.....	5	.....	Calm	.....	.....	.....	.....	D. clouds	
Canonicus, New Orleans, La	29.99	761.7	43	6.1	54	12.2	87	S	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	Foggy	
Colorado, New York, N. Y.	30.50	774.7	41	5.0	39	3.9	82	SW	9	4.0	.....	.....	1	.....	W	0	0	.....	.....	Light fog	
Despatch, Constantinople, Turkey	30.35	770.9	74	23.3	39	3.9	90	NNE	.....	.....	4–6	.....	10	.....	NE	.....	.....	.....	.....	Rainy	
Essex, S. 8° 48′, E. 12° 53′	29.76	755.9	86	30.0	83	28.3	87	SSW	.....	.....	2	.....	9	.....	.....	.....	.....	Long	SW	D. clouds	
Franklin, Norfolk, Va.	30.62	777.7	64	17.8	46	7.8	??	NNE	3.5	1.6	.....	.....	.....	.....	NNE	0	0	.....	.....	Cloudy	
Guard, Lisbon, Portugal	30.26	768.6	57	13.9	50	10.0	64	NNE	.....	.....	1	.....	0	.....	.....	.....	.....	.....	.....	Hazy	
Lackawana, Mare Island, Cal.	30.10	764.5	.....	.....	54	12.2	74	WSW	.....	.....	0–1	.....	8	.....	NW	.....	.....	.....	.....	D. clouds	
Marion, Villefranche, France	30.20	767.1	60	10.0	56	13.3	63	SW	.....	.....	1	.....	1	.....	.....	0	0	Smooth	S	D. clouds	
Michigan, Erie, Pa.	29.99	761.7	80	26.7	44	6.7	52	S	.....	.....	1	.....	0	.....	.....	.....	.....	.....	.....	Fair	
Monocacy, Hong-Kong, China	30.22	767.6	59	15.0	53	11.7	67	ENE	.....	.....	0–1	.....	1	.....	S&W	0	0	.....	.....	D. clouds	
New Hampshire, Port Royal, S.C.	30.46	773.7	.....	.....	56	13.3	94	ENE	19	8.5	.....	.....	1	.....	ENE	0	0	.....	.....	D. clouds	
Omaha, Valparaiso, Chili	30.00	762.0	65.5	18.6	62	16.7	88	W	1	0.4	.....	.....	0	.....	.....	0	0	.....	.....	Pleasant	
Onward, Callao, Peru	29.96†	761.0†	78	25.6	76	24.4	82	SE	.....	.....	3	.....	3	.....	.....	.....	.....	Long	W	D. clouds	
Ossipee, Norfolk, Va.	30.60	777.2	75	23.9	50	10.0	86	NE	.....	.....	3	.....	10	.....	NE	.....	.....	.....	.....	Overcast	
Palos, Shanghai, China	30.56	776.2	40	4.4	31	— 0.6	100	WNW	.....	.....	2–3	.....	6	.....	N&W	.....	.....	.....	.....	.....	
Plymouth, Aspinwall	29.95	760.7	80	26.7	79	26.1	100	SE	.....	.....	1	.....	2	.....	.....	.....	.....	Smooth	NE	Clear	
Powhatan, Norfolk, Va.	.....	.....	.....	.....	59	15.0	94	NE	3.6	1.6	.....	.....	10	.....	.....	0	0	.....	.....	Overcast	
Ranger, Shanghai, China	30.72	780.3	.....	.....	37	2.8	71	WNW	.....	.....	2	.....	6	.....	Calm	.....	.....	.....	.....	Cloudy	
Rio Bravo, Brownsville, Texas	29.77	756.1	.....	.....	63	17.2	100	E	.....	.....	1	.....	2	.....	S	.....	.....	.....	.....	D. clouds	
Santee, Annapolis, Md.	30.60	777.2	62	16.7	43	6.1	75	S	.....	.....	0–1	.....	10	.....	NW	0	0	.....	.....	Cloudy	
Saratoga, Norfolk, Va.	.....	.....	.....	.....	44	6.7	93	NE	.....	.....	4	.....	8	.....	NE	0	0	.....	.....	Overcast	
St. Louis, League Island, Pa	30.40	772.1	37	2.8	37	2.8	90	NW	1	0.4	.....	.....	2	.....	NW	0	0	.....	.....	Fair	
Swatara, Norfolk, Va.	30.60	777.2	.....	.....	54	12.2	80	NE	.....	.....	2	.....	10	.....	N&E	.....	.....	.....	.....	D. clouds	
Tennessee, Shanghai, China	30.62	777.7	72	22.2	32	0.0	79	NW	.....	.....	3	.....	4	.....	NW	0	0	.....	.....	D. clouds	
Trenton, Villefranche, France	30.33	770.4	.....	.....	62	16.7	27	W	3	1.3	.....	.....	1	.....	W	0	0	.....	.....	D. clouds	
Vandalia, Naples, Italy	30.16	766.1	54	12.2	54	12.2	61	ENE	.....	.....	2–3	.....	3	.....	E	.....	.....	.....	.....	D. clouds	
Wabash, Boston, Mass.	30.50	774.7	54	12.2	34	1.1	79	WSW	6	2.7	.....	.....	10	.....	WSW	0	0	.....	.....	D. clouds	
Wyoming, Washington, D. C.	30.74†	780.8†	.....	.....	45	7.2	.....	Calm	.....	.....	0	.....	10	.....	.....	.....	.....	.....	.....	D. clouds	

Note.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. The position given for the Plymouth is that at noon, local time, instead of that at 7:35 a. m., Washington time.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.	Character.	Direction from—		
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—				
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			Capt. Berry.
S. S. China																			Capt. Cobb.
S. S. City of New York																			
S. S. City of Panama, N. 47° 38′, W. 125° 6′			29.49*	749.0*	49	9.4		NNW			4		0					D. clouds	Capt. Seabury.
S. S. City of Peking, N. 30° 33′, E. 154° 35′			30.27*	768.8*	68	20.0	90	N			2		10		W	Heavy	W	Showery	Lt. Z. L. Tanner, U.S.N.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio, N. 22° 24′, E. 116° 26′			30.26	768.6	60	15.6		NNE			6					Smooth	ENE	Blue sky	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. *Aneroid.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.

S. S. Belgic, N. 35° 31′, E. 142° 58′			30.25*	768.3*				NW			6		Light		N	Smooth			Capt. John Metcalf.
S. S. Gaelic, Hong-Kong, China			30.27†	768.8†	60	15.6	94	NE			3		Haze					Overcast	Capt. W. H. Kidley
S. S. Oceanic, N. 31° 33′, W. 139° 52′			30.10	764.5	62	16.7	88	WNW			3–4		9		WNW	High	WNW	Drizzling	Capt. H. Parsell.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. *Corrected for temperature and elevation; instrumental error not known. †Aneroid.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig																			Capt. Undütsch.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds.

UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Lo'wr	Upper.	Lower.	Character.	Direction From—		
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second	0—10.	0—10.	0—10.	From—	From—				
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, N. 41° 02′, W. 65° 02′			30.52*	775.2*	44	6.7	??	NNW			6		7		NNE	Light	NE	D. clouds	Captain Sargent.
S. S. Ohio, Liverpool			30.11	764.8	51	10.6	93	W			2		10		W			Dull	Captain Morrison.
S. S. Pennsylvania, N. 40° 56′, W. 65° 46′			30.42†	772.7†	35	1.7	??	N			2		8		N	Light	N	Overcast	Captain Harris.

Note.—The originals give the barometer as read off; wind-force by the scale 0 to 12. * Aneroid † Corrected for temperature and elevation, instrumental error not known.

RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

S. S. Nederland																			Capt. Randle.
S. S. Switzerland																			Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

S. S. Hibernian																			
S. S. Scandinavian, Halifax, N. S.			30.49	774.4	16	— 8.9		NNE			5		8		NE	Short high.	NE	D. clouds	Capt. W. Richardson.

Note.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller Boothbay, Maine			30.47	773.9	32	0.0	79	NE	3	1.3			10s		NE			Overcast	Capt. James Jorgensen.

Note.—The originals for the schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4.

Collated at the Office of the Chief Signal Officer of the Army, Washington, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^{d}.) Chief Signal Officer. U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON DECEMBER 23, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.

1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.

1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours	.....	.....	30.34	770.6	57.2	14.0	57	Calm	.....	.....	0	.....	1	.....	.....	0	0	Very fair.....	Michel.
Algiers	.....	.....	30.27	768.8	56.1	13.4	74	WNW	.....	.....	1	.....	3	.....	.....	0.220	5.6	Pretty fair..	Peter.
La Calle	.....	.....	30.27	768.9	55.9	13.3	73	NW	.....	.....	3	.....	6	.....	.....	0.669	17.0	Cloudy.....	Fleury.
Tunis	.....	.....	30.21	767.3	54.1	12.3	70	NW	.....	.....	4	.....	6	.....	.....	0	0	Cloudy.....	Jacques.
Sfax	.....	.....	30.28	769.0	55.4	13.0	.....	NNW	.....	.....	2	.....	4	.....	.....	0	0	Cloudy.....	Husson.
Saida	.....	.....	30.21	767.2	45.1	7.3	89	ENE	.....	.....	1	.....	2	.....	.....	0	0	Fair.....	Millot.
Tebessa	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Bassières.
Geriville	.....	.....	30.22	767.5	38.1	3.4	93	NE	.....	.....	2	.....	8	.....	.....	0	0	Very cloudy	Lemaillot.
Laghouat	.....	.....	30.26	768.6	48.2	9.0	73	E	.....	.....	2	.....	0	.....	.....	0	0	Clear.....	Guyot.
Biskra	.....	.....	30.31	769.8	57.2	14.0	43	Calm	.....	.....	0	.....	0	.....	.....	0	0	Clear.....	Kuntz.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890 ? meters, or 2,919.9 ? feet; Tebessa, 1,088 ? m., or 3,569.4 ? ft.; Geriville, 1,360 ? m.; or 4,461.7 ? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

Agram	29.59	751.6	30.18	766.6	23.0	— 5.0	90	Calm	.....	.....	0	.....	10	.....	.....	0	0	.....	Prof. Ivan Stozir
Cracow, I. R. Observatory	29.22	742.2	30.06	763.5	10.0	—12.2	100	NE	.....	.....	1	.....	1	.....	.....	0	0	.....	Dr. Wierzbiski.
Eperies	29.21	741.8	30.15	765.9	21.2	— 6.0	85	S	.....	.....	2	.....	10	.....	.....	0	0	.....	Julius Mikolik.
Gratz	28.83	732.2	30.16	766.1	22.6	— 5.2	83	S	.....	.....	2	.....	6	.....	.....	0	0	.....	Andreas Rospini.
Hermannstadt	28.65	727.7	30.19	766.8	21.2	— 6.0	85	NE	.....	.....	1	.....	10	.....	.....	0	0	.....	Prof. Reissenberger.
Kremsmünster	28.70	729.0	30.15	765.8	19.4	— 7.0	94	W	.....	.....	1	.....	10	.....	.....	0.165	4.2	.....	Prof. C. Wagner.
Lemberg	29.03	737.4	30.10	764.6	15.4	— 9.2	94	S	.....	.....	1	.....	0	.....	.....	0.031	0.8	.....	Dr. T. Stanecki.
Pola	29.95	760.8	30.07	763.7	43.9	6.6	62	NNW	.....	.....	1	.....	8c	.....	.....	0	0	.....	I.R.Hydrographic Office.
Szathmar	29.76	756.0	30.27	768.8	20.1	— 6.6	84	S	.....	.....	2	.....	10	.....	.....	0.079	2.0	Snowing.....	Johann Tamas, S. J.
Szegedin	29.90	759.5	30.21	767.2	24.4	— 4.2	91	S	.....	.....	1	.....	10	.....	.....	0	0	.....	Karl Stancel.
Trieste	30.01	762.2	30.11	764.8	41.5	5.3	66	SE	.....	.....	1	.....	8	.....	.....	0	0	Cloudy.....	P. Busin.
Vienna	29.38	746.3	30.14	765.5	17.2	— 8.2	88	S	.....	.....	1	.....	10	.....	.....	0.031	0.8	.....	I.R. Central Met.Obs'y.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

Arlon	28.48	723.3	30.05	763.2	32.0	0.0	98	NW	.....	.....	2	.....	10	.....	.....	0.091	2.3	Snow & fog.	Prof. M. Passau.
Brussels	29.80	757.0	30.01	762.3	40.6	4.8	89	WSW	.....	.....	1	3	.....	WSW	.....	0.118	3.00	.....	Royal Observatory.
Furnes	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.177	4.5	.....	M. E. de Cae.
Maeseyck	29.83	757.6	29.96	760.9	39.4	4.1	91	SE	.....	.....	2	.....	8	.....	.....	0.067	1.7	.....	M. Pierrot.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

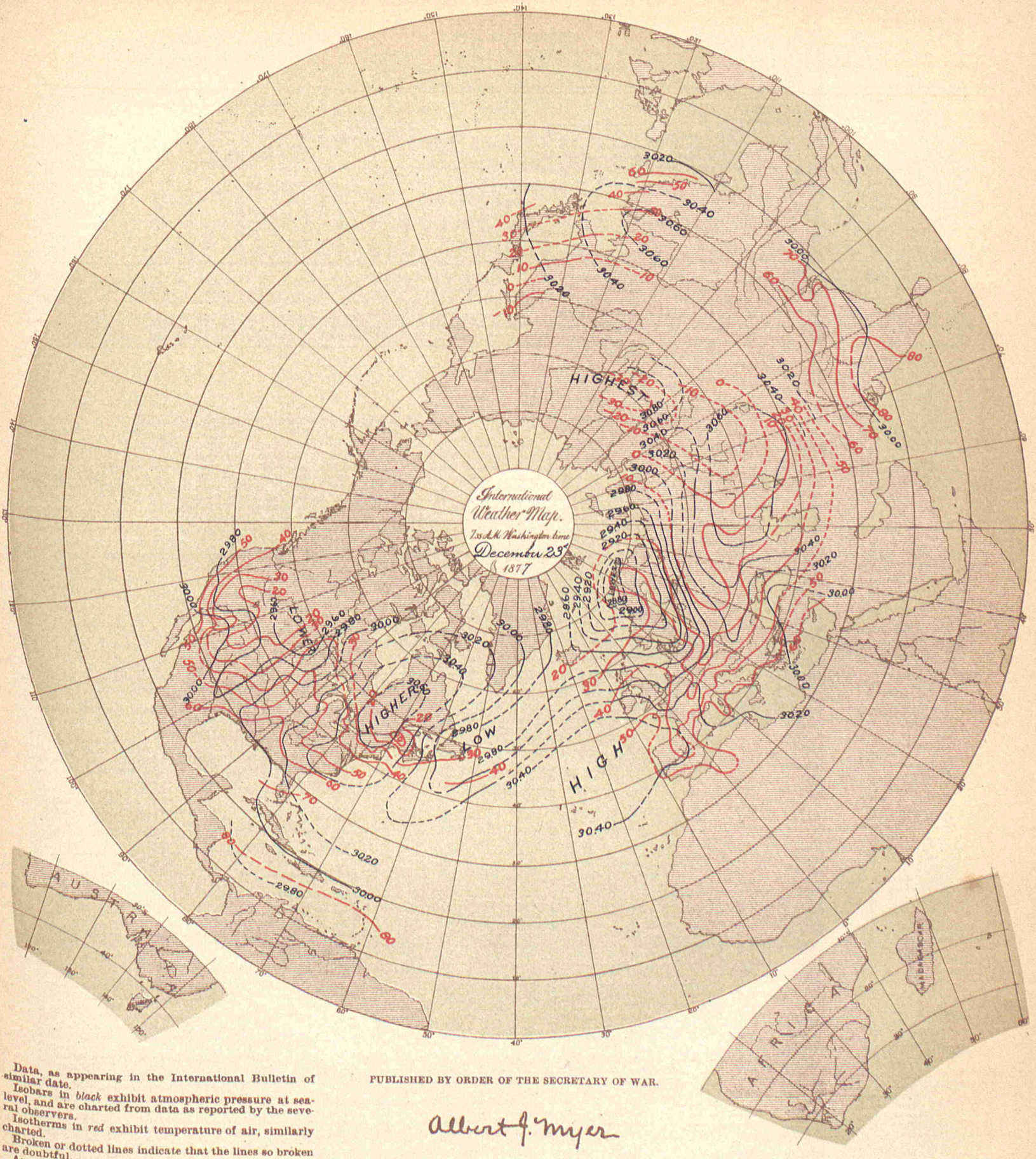
Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er. 0—10.	Clouds. Amount. Low'r. 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	29.75	755.6	29.86	758.4	35.3	1.8	.....	W	27	12.1	.....	.....	6	.....	.....	0.030	0.76	Snow-sq'lls	W. Boswell.
Ardrossan	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	William McNeil.
Armagh, Observatory	.....	.....	30.12	765.0	42.0	5.6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	S. Call, for Dr. Robinson
Bidston, (Liverpool Obs.)	.....	.....	30.10	764.5	43.4	6.3	.....	WNW	38	17.0	.....	.....	5	.....	.....	.....	.....	D. clouds	John Hartnup.
Birr Castle, (Parsonstown)	.....	.....	30.28	769.1	43.3	6.3	.....	WNW	.....	.....	1	.....	1	.....	.....	.....	.....	Blue sky	J. Dreyer.
Bradford, Yorkshire	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. McLandsborough.
Bridgetown, (Barbados)	29.89	759.2	29.92	760.0	80	26.7	.....	NE	.....	.....	1	.....	2	.....	.....	0.03	0.8	.....	Pvt. G. W. Roberts, A.
Cambridge, Observatory	.....	.....	30.07	763.8	45.0	7.2	.....	WNW	.....	.....	1	.....	5	.....	.....	.....	.....	D. clouds	H. Todd. [H. C.
Cardington	.....	.....	30.11	764.8	43.0	6.1	.....	NW	.....	.....	1	.....	1	.....	.....	.....	.....	Blue sky	John McLaren.
Chatham, School M. E	30.04	763.0	30.17	766.3	39.2	4.0	.....	SW	.....	.....	2	.....	10	.....	.....	.....	.....	Overcast	Lt. W. G. Morris, R. E.
Dartmoor	28.72	729.5	30.24	768.1	40.0	4.4	.....	N	.....	.....	4	.....	4	.....	.....	.....	.....	D. clouds	Alexander Watt.
Davos Platz (Switzerland)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Francis Redford, M. A.
Donaghadee	30.09	764.3	30.12	765.0	40	4.4	.....	WNW	.....	.....	3	.....	3	.....	.....	.....	.....	D. clouds	J. Mac Gowan.
Dover	30.07	763.8	30.10	764.5	43	6.1	.....	NW	.....	.....	4	.....	4	.....	.....	.....	.....	½ clouded	J. Costello.
Eccles, (near Manchester)	.....	.....	30.08	764.0	41.0	5.0	.....	NW	.....	.....	.....	.....	10	.....	.....	.....	.....	Showery	Thomas Mackereth.
Falmouth, Observatory	30.03	762.7	30.26	768.6	46.5	8.1	.....	NNW	.....	.....	3	.....	5	.....	.....	.....	.....	D. clouds	The Staff.
Fort Napier, (Natal)	27.49	698.2	29.69	754.1	84.3	29.1	.....	N	.....	.....	2	.....	0	.....	.....	.....	.....	Blue sky	Pvt. G. Salmon, A. H. C
Free Town, (Sierra Leone)	.....	.....	29.89	759.2	87	30.6	.....	N	.....	.....	1	.....	3	.....	.....	.....	.....	D. clouds	
Galway, Queen's College	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	30.26	768.6	30.32	770.1	55.0	12.8	.....	E	.....	.....	5	.....	9	.....	.....	.....	.....	Showery	Corpl. C. Aitken, A. H. C.
Glasgow, Observatory	29.78	756.4	29.99	761.7	40.3	4.6	.....	WNW	.....	.....	3	.....	.....	.....	.....	.....	.....	Blue sky	D. G. Maclean.
Great Yarmouth	29.99	761.7	30.00	762.0	42	5.6	.....	NW	.....	.....	4	.....	0	.....	.....	.....	.....	Blue sky	G. T. Watson.
Greenwich, Royal Obs'y	29.91	759.7	30.09	764.2	43.2	6.3	.....	NNW	.....	.....	4	.....	8	.....	.....	.....	.....	Thin cloud	The Staff, for G. B. Airy.
Guernsey	29.94	760.5	30.16	766.1	47	8.3	.....	NW	.....	.....	2	.....	4	.....	.....	.....	.....	D. clouds	Dr. S. E. Hoskins, F.R.S.
Helston	.....	.....	30.25	768.3	49	9.4	.....	N	.....	.....	2	.....	4	.....	.....	.....	.....	D. clouds	M. P. Moyle.
Holyhead	30.14	765.5	30.19	766.8	45	7.2	.....	NW	.....	.....	5	.....	3	.....	.....	0.15	3.8	D. clouds	John Tilston.
Jersey	29.90	759.4	30.19	766.8	48.0	8.9	.....	N	.....	.....	3	.....	9	.....	.....	.....	.....	D. clouds	J. Fisher.
Kew, Observatory	.....	.....	30.12	765.0	44.2	6.8	.....	NW	14	6.3	.....	.....	6	.....	.....	Blank	Blank	Gloomy	The Staff.
Kingstown	30.17	766.3	30.20	767.1	42	5.6	.....	WNW	.....	.....	5	.....	1	.....	.....	.....	.....	D. clouds	George Mitchell.
Leicester, Museum	.....	.....	30.05	763.3	47.6	8.7	.....	SW	.....	.....	4	.....	10	.....	.....	.....	.....	Blue sky	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.96	761.0	30.03	762.7	55.0	12.8	.....	W	.....	.....	3	.....	6	.....	.....	.....	.....	Overcast	Sgt. Fred. Travis, A. H.
Nairn	29.79	756.7	29.89	759.2	35	1.7	.....	NW	.....	.....	3	.....	5	.....	.....	.....	.....	D. clouds	W. D. Penny. [C.
Nassau, (Bahamas)	.....	.....	30.15	765.8	72.5	22.5	.....	E	.....	.....	3	.....	4	.....	.....	.....	.....	½ clouded	C. S. Duncombe.
Nottingham, Observatory	29.88	758.9	30.07	763.8	43.7	6.5	.....	WNW	.....	.....	5	.....	3k	.....	WNW	0.011	0.28	D. clouds	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.57	751.1	30.10	764.5	43.1	6.2	.....	NW	.....	.....	4–5	.....	9	.....	.....	.....	.....	D. clouds	Rev. Stephen Whitty
Oxford, Radcliffe Obs'y	.....	.....	30.13	765.3	44	6.7	.....	WNW	.....	.....	2	.....	3	.....	.....	.....	.....	Blue sky	Mr. Lucas.
Plymouth	30.14	765.5	30.22	767.6	46.0	7.8	.....	NNE	.....	.....	3	.....	4	.....	.....	.....	.....	D. clouds	John Merrifield.
Roche's Point	30.26	768.6	30.30	769.6	45	7.2	.....	NW	.....	.....	2	.....	5	.....	.....	.....	.....	Fine	W. Kennedy.
Saint Ann's Head	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	John C. Walker.
Sandwick Manse, (Orkneys.)	.....	.....	29.78	756.4	33.8	1.0	.....	NW	32	14.3	.....	.....	8	.....	.....	.....	.....	Snowing	Rev. C. Clouston, L.L. D
Scutari, Cemetery, (Turkey)	.....	.....	30.07	763.8	34.2	1.2	.....	N	.....	.....	2	.....	10	.....	.....	.....	.....	Snowing	Sergt. W. H. Lyne.
Sheffield	29.78	756.4	30.09	764.3	42.4	5.8	.....	NW	.....	.....	3	.....	4	.....	.....	0.04	1.0	Blue sky	W. F. Cooper.
Silloth Rectory	30.01	762.2	30.04	763.0	45.7	7.6	07	NW	.....	.....	1	.....	3	.....	.....	0.105	2.67	D. clouds	Rev. F. Redford, M. A.
Stonyhurst, Observatory	.....	.....	.....	.....	41.4	5.2	.....	W	.....	.....	1	.....	8	.....	.....	.....	.....	D. clouds	Rev. S. J. Perry.
Stornoway, Lews C. (Hebr.)	.....	.....	29.88	758.9	35	1.7	.....	NW	.....	.....	6	.....	10	.....	.....	.....	.....	Snowing	John Smith.
Stratfield Turgiss	29.91	759.7	30.13	765.3	43.9	6.6	.....	NW	.....	.....	1	.....	0	.....	.....	.....	.....	Blue sky	Rev. C. H. Griffith, F.M.S.
Thurso	.....	.....	29.77	756.1	33	0.6	.....	NW	.....	.....	5	.....	10	.....	.....	.....	.....	Snowing	John Trotter.
Truro, Royal Institution	.....	.....	30.24	768.1	49	9.4	.....	N	.....	.....	4	.....	6	.....	.....	.....	.....	D. clouds	W. Newcombe.
Valencia, Observatory	.....	.....	30.35	770.9	45.9	7.7	.....	NNW	13	5.8	.....	.....	6	.....	.....	.....	.....	D. clouds	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Henry Mercer.
Cape Good Hope, Obs'y	29.99	761.7	30.03	762.7	72.3	22.4	53	WNW	21	9.4	.....	6	8	.....	.....	.....	.....	.....	The Staff, for E. J. Stone.
Hobart Town, (Tasmania)	.....	.....	29.66	753.4	56.0	13.3	76	NW	.....	.....	2	.....	10n	.....	.....	0.95	24.1	Raining	Francis Abbott, F.R.A.S.
Leith, Restalrig Park	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Andrew Gibb.
Mauritius, Observatory	29.79	756.7	29.97	761.3	80.5	26.9	66	E	17.0	7.6	.....	3	2	W	E	0.38	9.6	Squally	C. Meldrum.
Melbourne, Observatory	29.94	760.5	30.03	762.7	53.0	11.7	70	W	16	7.2	.....	.....	7	.....	.....	0.13	3.3	Squally	R. L. J. Ellery.
Monach L't-house, (Hebrides)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Youngclause.
North Unst, (Shetland Is.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Robert Burnet.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m.

Marine Series. Vessels.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er. 0—10.	Clouds. Amount. Low'r. 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea or swell. Height scale 0—9	Sea or swell. Direction from—	Weather.	Observer.
S. S. Algeria, N. 43° 0′, W. 48° 35′	.....	.....	30.08	764.0	40	4.4	.....	NNE	.....	.....	1	.....	4	ENE	.....	5*	W	D. clouds	Capt. W. Watson.
S. S. Batavia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. J. E. Moutland.
Ship Camperdown	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. A. T. Miller.
Brig Catherine	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. Adam Smith.
Barque Celeste	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. D. F. McKechnie
S. S. Hibernia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. W. R. Cato
Barque Maroon	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. A. T. Brown.
Ship Mikado	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. C. C. Prehn.
Royal Alice, N. 43° 45′, W. 49° 45′	.....	.....	30.11	764.8	37	2.8	.....	S	.....	.....	2	.....	3	.....	.....	4	W	D. clouds	Capt. E. M. Hughes.
S. S. Seine	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. H. Manning.
Barque Sorata	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. Jas. J. Price.
Schooner Traveller	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. Alex Simpson.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in fe. weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. *Feet.



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	BAROMETER. Corrected for instru'm'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	Low'r 0—10.	Direction. Upper. From—	Lower. From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	Millimeters.	WEATHER.	OBSERVER
San José	26.19	665.2			64.8	18.2	92	NE			2		1k			0	0		Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.33	745.0	29.38	746.2	37.6	3.1	88	NW			4		5						
Fanöe	29.59	751.6	29.61	752.1	39.0	3.9	77	WNW			6		5						
Godthaab, (Greenland)	30.28	769.1	30.32	770.2	16.7	— 8.5	91	Calm			0		8						
Stykkisholm, (Iceland)	29.73	755.2	29.78	756.3	18.5	— 7.5	95	E			4		8						
Thorshavn, (Faröe)	29.71	754.5	29.74	755.4	26.4	— 3.1	76	N			3		5						
Vestervig	29.41	747.1	29.58	751.4	35.8	2.1	87	W			7		3						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

Alençon, Normal School	29.64	752.8	30.19	766.8	41.0	5	75	SW			1		10			0	0	Covered	Collignon, Director.
Amiens, Normal School	29.91	759.8	30.03	762.7	41.7	5.4	94	WNW			3		10			0	0	Covered	Bonvarne, Director.
Avignon, Normal School	30.12	765.0	30.20	767.0	38.8	3.8	41	N			2		0			0	0	Clear	Mr. Giraud, Director
Bar-sur-Seine	29.56	750.7	30.15	765.8	34.3	1.3	96	SSW			2		10		SW			Raining	C. Saillard.
Beaumette Obs'y (Angers)	30.04	762.9	30.21	767.4	44.8	7.1	97	SW	12.5	5.6					W	0.055	1.4		Albert Cheux.
Beauvais	29.82	757.5	30.12	765.0	42.8	6	88	NW			1		8		NW	0.012	0.30	Very cloudy	Normal School.
Besançon	29.37	746.1	30.31	769.8	31.6	— 0.2		SSE			2		10			0	0	Covered	Normal School.
Bourg-en-Bresse	29.40	746.8	30.32	770.1	31.5	— 0.3	93	SE			2		5kn		SE	0	0	Cloudy	Normal School.
Bourges, Normal School	29.67	753.7	30.26	768.7	32.7	0.4	96	S			4		5		S	0	0	Cloudy	A. Wagner, Director.
Brest, Naval Observatory	29.95	760.6	30.16	766.1	49.8	9.9	86	NNE			4		5		NNE	0.128	3.25	Squally	The Staff.
Carcassonne, Normal School	29.91	759 6	30.35	770.8	32.0	0.0	96	E			4		2		E	0	0	Slightly cl'dy	Vateau, Director.
Caen	30.08	763.9	30.15	765.8	47.5	8.6	83	W			4		8			0.008	0.2	Very cloudy	Normal School.
Chartres, Normal School	29.55	750.6	30.15	765.9	28.4	— 2		W			1		10			0	0	Covered	Lequin, Director.
Châlons-sur-Marne, N. Sch'l	29.76	755.9	30.10	764.4	34.5	1.4	100	W			2		10n			0.244	6.2	Covered	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.84	732.6	30.26	768.6	37.4	3.0	66	W			1		8		W	0	0	Very cloudy	Alluard, Director.
Commercy, Normal School	29.20	741.7	30.12	765.0	34.2	1.2	93	W			6		10		W	0	0	Covered	Voudez, Director.
Commune de Gréasque*	29.01	736.9	30.15	765.9	35.2	1.8	93	NW			2		2		NW	0	0	¼ covered	Dr. Goulet, Director.
Grenoble																			M. Kina. Normal School.
La Roche-sur-Yon, N. School	30.03	762.8	30.25	768.4	42.1	5.6	97	ESE			1		10			0	0	Covered	Mouillot, Director.
Le Mans, Normal School	29.84	757.9	30.16	766.1	42.4	5.8	63	SW			4		10			0.035	0.9	Covered	Poirrier, Director.
Lons-Le-Saulnier, N.School	29.32	744.8	30.29	769.3	34.3	1.3	70	S			2		5			0	0	Cloudy	T. Carré, Director.
Lorient, Naval Observatory	30.12	765.0	30.22	767.5	52.2	11.2	86	W			3		10			0.067	1.7	Covered	M. Marchal, Director.
Mâcon, Normal School	29.51	749.6	30.25	768.4	26.8	— 2.9		Calm			0		10			0	0	Covered	M. A. Schuster, Dir.
Metz																			
Mirecourt	29.05	737.9	30.16	766.0	28.0	— 2.2	72	WSW			2		10		NNE	0	0	Covered	Normal School.
Nismes, Normal School	30.03	762.7	30.24	768.1	46.8	8.2	70	NW			4		2		N	0	0	Slightly cl'dy	Boyer, Director.
Orleans, Normal School	29.80	757.0	30.21	767.4	34.2	1.2	93	SW			2		10			0	0	Covered	Bernard, Director.
Paris, Observatory	29.85	758.3	30.10	764.6	39.9	4.4	96	W			1		10					Rainy	National Observatory.
Privas	29.13	740.0	30.25	768.4	36.5	2.5	81	SW			2		10		SW	0	0	Covered	Normal School
Rochefort, Naval Obs'y	30.26	768.7	30.30	769.5	35.6	2.0	93	S			2				N	0.16	4.	Misty	Lt. Decante, Director.
Rouen, Normal School	30.13	765.2	30.21	767.4	46.8	8.2	84	NNW			2		10			0.071	1.8	Covered	F. Lucard, Director.
Tarbes, Normal School	29.24	742.7	30.37	771.4	40.1	4.5	86	NE			2		0			0	0	Clear	T. Hugues, Director.
Villefranche	29.60	751.9	30.36	771.2	31.1	— 0.5	93	SE			1		10		Calm	0	0	Covered	Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.77	756.2	29.80	756.9	78.8	26										0.24	6.		L'Abbé Marchési.
Marseilles, Observatory			30.15	765.8	38.1	3.4	55	WNW			2		8			0	0	Very cloudy	The Staff.
Mont-Louis	24.95	633.7	30.26	768.7	38.5	3.6	9	N	7.4	3.33			2		NW	0	0		Mr. Falguère.
Nice			30.08	763.9				N			2		3			0	0	Fair	Dr. A. Niepce.
Paris, Montsouris Obs'y	29.81	757.2	30.09	764.2	39.7	4.3	98	W			2–3		10		WNW	0.063	1.6		Marié Davy, Director.
Perpignan			30.22	767.6	50.2	10.1	14	NW	9.3	4.17			1		N	0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.	21.26	540.1			23.0	— 5.0		N			2		6					Fair	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.58	573.4			33.8	1.0		N			1		6			0	0	Fair	Gen'l de Nansouty.
Saint Maur, (near Paris)	29.94	760.5	30.11	764.7	37.4	3.0	100	SW			1		10		W	0.181	4.6		E. Renou.
Toulouse, Observatory	29.64	752.8	30.38	771.6	29.7	— 1.3	89	NW			1		1			0	0		The Staff.
Tours	29.99	761.8	30.19	766.8	36.0	2.2	94	SW			1		10					Drizzling	C. Marquet.
Versailles, (near Paris)			30.10	764.5	39.9	4.4	87	NW			1		10			0.097	2.48	Covered	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.54	775.6	30.56	776.2	32.0	0.0	98	W	5.8	2.6			10k			0	0	Covered	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published. At Mirecourt and Rochefort the cloud directions are apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,686.40 m., or 5,201.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg																			Prof. Dr. Hoh.
Berlin	29.53	750.0	29.71	754.6	32.0	0.0	90	SW			2		10			0.111	2.8	Snowing	Prof. Arndt.
Breslau	29.33	745.0	29.86	758.4	32.2	0.1	54	WSW			2		10					Snowing	Royal University Obs'y.
Carlsruhe	29.60	751.9	30.05	763.2	30.9	— 0.6	96	SW			6		10			0.177	4.5	Snowing	Albert Senz.
Cassel	29.34	745.1	29.94	760.5	29.5	— 1.4	92	SSW			5		10	SW				Snowing	Dr. H. Möhl.
Crefeld	29.74	755.5	29.91	759.6	40.6	4.8	88	NW			3		7			0.04	1.		Director Lose.
Emden	29.82	757.5	29.86	758.4	37.4	3.3	83	NW			3		1			0.217	5.5		Prof. Prestel.
Frankfort on the Main	29.65	753.1	30.04	762.9	31.3	— 0.4		SSW			2		10			Inap.	Inap.	Snowing	Physical Society.
Friedrichshafen	29.06	738.2	29.90	759.4	28.4	— 2.0	92	SW			5		10			0.177	4.5		M. Wilhelm.
Hamburg	29.62	752.3	29.69	754.1	39.9	4.4	84	W			4		0			0.126	3.2	Clear	Captain F. Hegemann.
Kiel	29.62	752.3	29.63	752.7	38.5	3.6	75	W			4		2			0.232	5.89		Prof. G. Karsten.
Königsberg, (Prussia)	29.59	751.6	29.67	753.6	17.4	— 8.1	78	S								0	0	Cloudy	Prof. E. Luther.
Köslin			29.54	750.2	28.8	— 1.8		SSW			6		3			0	0		H. Müller.
Leipsic, Observatory	29.45	748.0	29.89	759.2	30.4	— 0.9	92	SW			4		10					Snowing	Prof. Bruhns.
Memel, Naval School	29.63	752.5	29.67	753.7	18.9	— 7.3	92	S			6–7		10cs						Reinbrech von Skalweit.
Neufahrwasser	29.62	752.4	29.64	752.8	23.7	— 4.6	67	SSW			5		10			0.043	1.1		A. Lothes.
Posen	29.52	749.8	29.83	757.7	30.6	— 0.8	91	SW			5					0.022	0.56	Covered	Dr. Magener.
Strassburg Obs., (in Alsace	29.55	750.6	30.13	765.4	30.0	— 1.1	96	S			4		10	W				Snowing	Dr. Schur.
Stuttgart	29.08	738.7	30.04	763.0	34.7	1.5	71	W			2		10			0.142	3.6	Snowing	Prof. Schoder.
Treves, (Trier)	29.43	747.4	29.95	760.7	33.8	1.0	93	W			4		10			1.124	3.16	Foggy	Prof. Flesch.
Weissenburg, (Bavaria)	28.47	723.1	30.07	763.6	28.8	— 1.8	96	SW	9	4.			10		W	0	0	Covered	Dr. Von Bebber.
Wustrow, Naval School	29.56	750.8	29.59	751.6	37.6	3.1	91	WSW			5		4			0.065	1.65	Fair	E. F. Schütz.
German Naval Series.																			

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet: Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4. Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines, Königsberg, Posen and Wustrow in cubic zolls. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.65	753.0	30.05	763.2	48.0	8.9		N			0.5							Cloudy	Dr. J. F. J. Schmidt.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and wind-force; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.96	761.1	30.02	762.4	71.8	22.1	80	SSW	14.0?	6.3?			7			0	0	D. clouds	
Deesa	29.54	750.4	30.02	762.5	81.5	27.5	62	Calm					8	SSW		0	0	D. clouds	
Bombay	29.90	759.5	29.94	760.5	81.7	27.6	74	WNW	7.0	3.1			0			0	0	Blue sky	
Poona	27.94	709.7	29.94	760.3	83.0	28.3	43	SE					0			0	0	Blue sky	
Lahore	29.28	743.6	30.05	763.2	63.4	17.4	78	Calm	2.9	1.3			10			0	0	Cloudy	
Belgaum	27.42	696.6	29.97	761.2	76.7	24.8	52	ESE	5.0	2.2			1			0	0	D. clouds	
Bangalore																			
Roorkee	29.13	739.8	30.06	763.5	64.8	18.2	68	SW	0.5	0.2			2			0	0		
Agra	29.47	748.5	30.05	763.3	68.7	20.4	75	E					4			0	0		
Trichinopoly																			
Nagpur	28.98	736.0	30.03	762.8	79.8	26.6	55	Calm	2.0	0.9			2			0	0	Blue sky	
Madras																			
Lucknow	29.68	753.9	30.07	763.7	64.6	18.1	84	Calm	0.5	0.2			0			0	0	Blue sky	
Allahabad	29.74	755.5	30.06	763.6	66.7	19.3	69	Calm	0.8	0.4			0			0	0	Blue sky	
Patna	29.90	759.6	30.09	764.3	69.5	20.8	54	W	0.9	0.4			0			0	0	Blue sky	
Hazaribagh	28.01	711.5	30.10	764.4	63.8	17.7	44	NW	5.3	2.4			0			0	0	Blue sky	
Cuttack	29.94	760.4	30.02	762.5	75.5	24.2	60	Calm	0.3	0.1			0			0	0	Blue sky	
Calcutta (Alipore)	30.04	763.1	30.07	763.7	64.8	18.2	55	NW	2.0	0.9			0			0	0	Blue sky	
Goalpara	29.64	752.8	30.04	762.9	70.1	21.2	63	Calm	0.2	0.1			0			0	0	Blue sky	
Chittagong	29.96	760.9	30.05	763.3	69.0	20.6	82	W	2.6	1.2			0			0	0	Misty	
Sibsagar	29.71	754.6	30.06	763.5	62.0	16.7	88	ENE	0.6	0.3			2			0	0	Blue sky	
Rangoon																			
Jubbulpore	28.67	711.5	30.05	763.3	77.0	25.0	70	E	1.7	0.8			0			0	0	Blue sky	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,361 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	22.10	561.3	30.07	763.6	23.7	— 4.6	45	WSW			1		10	NE		0	0		Ab. Dom. Mongini.
Stelvio	22.07	560.5	30.09	764.2	20.5	— 6.4		ESE			1		10			0	0		Signora Ernesta Manfrell.
Udine	29.65	753.0	30.08	763.9	37.6	3.1	58	Calm	0	0			9			0	0		Prof. Giovanni Clodig.
Padua	29.97	761.2	30.08	764.1	33.1	0.6	90	S	1.3	0.6			10			0	0		Prof. Dott. Lorenzoni.
Vicenza	29.88	758.9	30.08	764.0	38.3	3.5	76	W	0	0			5			0	0		Conte Alm. Da Schio.
Verona	29.89	759.2	30.12	765.1	39.2	4.0	77	SW			1		10			0	0		Dott. B. Bertoncelli.
Bergamo	28.73	729.7	30.10	764.6	38.1	3.4	68	SSW			1		7			0	0		Prof. Trionfini Carlo.
Domodossola																			Prof. Giuseppe Calza.
Milan	29.59	751.5	30.14	765.5	34.7	1.5		W			2		5	NNW		0	0		Ab. Gio. Capelli.
Pavia	29.75	755.6	30.11	764.8	36.1	2.3	82	W			1		5			0	0		Prof. Gio. Cantoni
Moncalieri	29.18	741.1	30.12	765.1	34.9	1.6	76	NNE	1.8	0.8			8	NW		0	0		Prof. P. F. Denza.
Mondovi	28.11	714.0	30.10	764.4	36.5	2.5	55	NNW			2		4	NE		0	0		Prof. D. C. Bruno.
Porto Maurizio	29.01	759.7	30.14	765.5	50.9	10.5	50	WSW			2		5			0	0		Prof. L. Vassallo.
Genoa	29.05	760.7	30.12	765.1	48.6	9.2	58	E	3.1	1.4			10	SE		0	0		Prof. G. M. Garibaldi
Piacenza	29.85	758.3	30.12	765.1	35.1	1.7	80	NW	6.3	2.8			4			0	0		Dott. G Manzi.
Parma	29.79	756.7	30.13	765.2	38.3	3.6	71	WNW			2		2			0	0		Prof. P. Pigorini.
Florence	29.89	759.1	30.15	765.9	41.4	5.2	56	E			2		0			0	0		Cav. F Meucci.
Leghorn	30.05	763.3	30.14	765.5	45.0	7.2	63	NE	3.8	1.7			9	WSW		0	0		Prof. P. Monte.
Siena	28.88	733.6	30.13	765.2	40.3	4.6	60	NE	0	0			3	NE		0	0		Prof. L. Toscani.
Urbino	28.55	725.1	30.16	766.1	37.6	3.1	72	SW			2		3			0	0		Prof. P. Serpieri.
Pesaro	30.07	763.6	30.11	764.9	42.3	5.7	61	NW	0	0			1			0	0		Prof. Luigi Guidi.
Ancona	30.00	761.9	30.11	764.7	42.4	5.8	64	NW			4		3			0	0		Prof. F. DeBosis.
Grosseto	30.05	763.2	30.16	766.1	46.8	8.2	63	NNW			2		2	NE		0	0		Avv. P. Ponticelli.
Rome	29.95	760.7	30.13	765.3	46.4	8.0	54	N	1.8	0.8			1			0	0		Prof. P. A. Secchi.
Naples, O. U	29.91	759.6	30.11	764.8	52.2	11.2	39	NE			2		0			0	0		Prof. L. Palmieri.
Lecce																			Prof. C. De Giorgi.
Cosenza	29.22	742.1	30.13	765.3	47.1	8.4	68	SW	1.8	0.8			6			0.024	0.6		Prof. F. D. Conti.
Cagliari	29.94	760.5	30.14	765.5	51.6	10.9	56	N			4		0			0.055	1.4		Prof. A. Pacinotti.
Riposto, (Sicily)	30.04	762.9	30.08	764.1	54.1	12.3	78	SW			2		7	N		0	0		Prof. F. Cafiero.
Palermo	29.80	757.0	30.07	763.6	52.7	11.5	57	NE	4.3	1.9			6			0.063	1.6		Prof. G. Cacciatore.
Caltanissetta	28.08	713.1	30.07	763.6	44.6	7.0	73	NE			2		1	S		0	0		Prof. A. Pagani.
Syracuse	30.00	762.0	30.08	763.9	51.3	10.7	69	NW			2		8	NE		0	0		Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.58	751.3	30.13	765.4	48.7	9.3	45	ESE	1.3	0.6			2			0	0		Prof. F. Brioschi.

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,543.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Siena, 348.5 m., or 1,143.3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Tokei (Yeddo)																			The Observatory.
Tokei (Yeddo) University	30.14	765.5	30.25	768.3	37	2.8	28	NE	8	3.6						0	0	Clear	Prof. P. V. Veeder.

MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Aguascallentes																			I. N. Marin, M. D.
Córdoba																			C. Peña, M. D.
Cuernavaca																			L. Castillo, A. E.
Guadalajara																			Prof. L. Pérez.
Guanajuato																			Prof. V. Fernandez.
Leon																			Prof. M. Leal.
Mexico	2.301	384.6	30.10	764.6	40.6	4.8	53	Calm	0	0		0	0			0	0	Very fine	Central Observatory.
Orizaba																			N. N.
Orizaba																			I. Orozco, M. D.
Pabellon, (Aguascalts)																			M. V. de Leon, M. E.
Puebla																			Prof. B. Gonzalez.
Toluca																			Prof. C. Velazquez.
Tlacotalpam																			Prof. F. R. Bayly.
San Luis Potosi																			G. Barroeta, M. D.
Vera-Cruz																			Prof. J. Rossell.
Zacatecas																			J. A. Bonilla, M. E.
Puebla, (Catholic Institute)																			P. Spina. [M. M. D. D.
Morelia																			M. Tena, F. L. Páramo

Note.—The elevation of Aguascallentes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,290 m., or 7,512.9 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,626 m., or 8,611.8 ft.; San Luis Potosi, 1,803 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	29.97	761.3	29.97	761.3	42.8	6.0		NW			4					0.197	5.0		
Groningen	29.77	756.1	29.82	757.5	40.3	4.6		NW			2					0.106	2.7		
Helder	29.88	759.0	29.88	759.0	43.7	6.5		WNW			5					0.071	1.8		
Hellevoetsluis			29.96	760.9	43.6	6.4	79	NW			3								
Utrecht	29.89	759.2	29.94	760.4	42.8	6.0	80	WNW			2		2			0.110	2.8	Light cloudy	H. v d Brink.

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Bergen	29.37	745.9	29.42	747.3	30.6	— 0.8	96	W	13.9	6.2	.....	.....	6	.....	.....	0.110	2.8	Hailing	
Brönö	28.89	733.7	28.93	734.7	28.0	— 2.2	77	S	18	8	.....	.....	8	.....	.....	0	0	.....	
Christiania	29.19	741.3	29.34	745.1	31.1	— 0.6	51	WSW	4	2	.....	.....	1	.....	.....	0	0	.....	
Tromsö	28.73	729.8	28.78	730.9	30.6	— 0.8	100	SW	4	2	.....	.....	10	.....	.....	0.433	11.0	Snowing	

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the cooperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Dom. Luiz at Lisbon.

Angra, (Azores)	30.35	770.8	30.54	775.7	57.0	13.9	71	E	9.4	4.2	.....	.....	6	.....	.....	0	0	.....	Dr. J. A. Sampaio.
Campo Major	29.35	745.5	30.40	772.2	48.0	8.9	50	ESE	2.5	1.1	.....	.....	0	.....	.....	0	0	.....	Dr. A. M. R. dos Santos
Funchal, (Madeira)	30.17	766.3	30.24	768.1	64.4	18.0	44	NNE	9.4	4.2	.....	.....	1	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	30.02	762.6	30.39	772.0	45.3	7.4	58	NE	11.2	5.0	.....	.....	0	.....	.....	0	0	.....	The Staff.
Ponta Delgada, (Azores)	30.46	773.6	30.53	775.4	58.9	15.5	64	ENE	0.7	0.3	.....	.....	10	.....	.....	0	0	.....	

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 6 h. 6 m., p. m.

Naval Series. Vessels.	Sea or swell. Height scale 0–9	Sea or swell. Direction from—		
S. Bartholomew Dias	.....	.....	.....	R, A. T. Pinha, Com'd't.
S. S. India	.....	.....	.....	A. D. Pedroso, Com'd't.
S. S. Mindello	.....	.....	.....	J. F. R. R. Bastos, Com'd't.
S. S. Sado	.....	.....	.....	A. N. P. Sampaio, Com'd't.
S. S. Sá da Bandeira	.....	.....	.....	F. Texeira da Silva, Com'd't.
S. S. Tejo	.....	.....	.....	F. J. Ferreina, dos Amas, Com'd't.

Note.—The originals, except for S. S. Tejo, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the cooperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.47	748.6	29.93	760.3	14.9	— 9.5	87	SE	16	7	.....	.....	10ks	.....	.....	.....	.....	Light clouds	Astronomical Obs.
Wilna	29.58	751.2	30.03	762.8	14.9	— 9.5	87	S	7	3	.....	.....	10	.....	.....	.....	.....	Snowing	Astronomical Obs.
Dorpat	29.50	749.3	29.76	756.0	15.8	— 9.3	81	S	13	6	.....	.....	10n	.....	.....	.....	.....		Prof. Dr. Weihrauch
St. Petersburg	29.75	755.7	29.77	756.1	18.0	— 7.8	75	S	20	9	.....	.....	10n;s	.....	.....	.....	.....		Central Physical Obs.
Kuopio	28.95	735.2	29.28	743.6	24.8	— 4.0	100	SSW	47	21	.....	.....	10	.....	.....	Blanc	Blank		Ch. Forsten.
Kieff	29.59	751.5	30.29	769.4	9.3	—12.6	84	ESE	7	3	.....	.....	8ck;s	.....	.....	.....	.....		Physical Cabinet.
Nikolaiev	30.13	765.2	30.20	767.0	17.1	— 8.3	76	ENE	18	8	.....	.....	10n	.....	.....	.....	.....	Snowing	Kurdakof.
Kertch	30.07	763.6	30.08	764.1	28.2	— 2.1	92	ENE	9	4	.....	.....	10	.....	.....	.....	.....		Lagorio.
Moscow	29.93	760.1	30.54	775.7	8.6	—13.0	57	S	7	3	.....	.....	0	.....	.....	.....	.....		Meteorological Obs.
Lugan	30.17	766.4	30.39	772.0	19.6	— 6.9	38	ESE	22	10	.....	.....	0	.....	.....	.....	.....		Meteorological Obs.
Archangel	29.47	748.4	29.48	748.9	20.1	— 6.6	95	SSW	27	12	.....	.....	10	.....	.....	.....	.....		Ogorodnikof.
Tiflis	28.94	735.0	30.47	773.8	24.6	— 4.1	89	Calm	0	0	.....	.....	10	.....	.....	.....	.....	Snowing	Physical Observatory
Astrakhan	30.70	779.8	30.62	777.7	18.0	— 7.8	45	ESE	9	4	.....	.....	0	.....	.....	.....	.....		Sebastianof.
Kasan	30.28	769.0	30.58	776.6	11.7	—11.3	65	SW	2	1	.....	.....	5	.....	.....	.....	.....		Physical Cabinet.
Orenburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....		Tschernischef.
Ekaterinburg	29.35	745.6	30.42	772.6	0.5	—17.5	89	SW	2	1	.....	.....	6	.....	.....	.....	.....		Meteorological Obs.
Nukuss	30.30	769.7	30.57	776.4	8.2	—13.2	84	NNE	0	0	.....	.....	4ks	.....	.....	.....	.....		
Kasaly	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....		Bobrof.
Tashkend	28.78	731.0	30.60	779.6	8.6	—13.0	96	NNW	2	1	.....	.....	.....	.....	.....	.....	.....		Michelson.
Barnaul	29.98	761.5	30.59	777.0	—11.2	—24.0	79	Calm	0	0	.....	.....	5	.....	.....	.....	.....		Meteorological Obs.
Yeniseisk	30.58	776.6	30.97	786.6	—30.1	—34.5	85	Calm	0	0	.....	.....	0	.....	.....	.....	.....		Marks.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....		Usolzef.
Oorga	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....		Mossin.
Krotkowo*	30.14	765.5	30.66	778.7	8.2	—13.2	57	S	2	1	.....	.....	0	.....	.....	.....	.....		Cand. Fatjanow.
Peking, (China)	30.35	770.8	30.49	774.4	18.0	— 7.8	48	Calm	0	0	.....	.....	8n	.....	.....	.....	.....		Physical Observatory
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....		Meteorological Obs.
Vladivostock	30.27	768.8	30.31	769.8	15.8	— 9.0	78	NW	2	1	.....	.....	0	.....	.....	.....	.....		
Nikolaievsk, on the Amoor	.....	.....	.....	.....	—16.6	—27.0	.....	Calm	0	0	.....	.....	0	.....	.....	.....	.....		

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall; for Krotkowo, the barometer reduced to freezing but not to sea level. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 492 m., or 1,636 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft. * N. 53° 47′, E. 48° 34′.

SPANISH SERIES.

Furnished by the cooperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Rave, Director.
Bilbao, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Manuel de Naveram
Burgos, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Domingo Martin y Perez.
Madrid, Royal Observatory	28.06	712.8	30.41	772.4	37.0	2.8	58	S	2.2	1.00	.....	1	0	.....	.....	0	0	Light clouds	The Staff.
Murcia, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Olayo Diaz, Director.
Santiago, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.97	761.3	30.04	763.0	73.3	22.9	84	ESE	4.5	2.0	.....	4ck	1ks	WSW	.....	0	0	Fair	Benito Vines, S. J.
San Fernando, Naval Obs'y	30.24	768.1	30.34	770.7	67.7	14.3	67	ESE	18.0	8.1	.....	0	4	.....	ESE	0	0	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de PortoRico, W. I.	.....	.....	29.99	761.8	77.7	25.4	68	NE	20.1	9.00	.....	5c	3kn	NE	NE	0	0	Cloudy	Leonardo de Tejeda, Chief of Engineers.

Note.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. m. instead of 8:19 a. m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,15

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

STATIONS	Barometer. Corrected for instru-m'tal error and temperature. Inches.	Barometer. Corrected for instru-m'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	28.98	736.2	29.02	737.2	31.3	— 0.4	.....	W	.....	.....	2	.....	10	.....	.....	0.236	6.0	.....	
Umea	29.10	739.1	29.15	740.4	27.7	— 2.4	96	W	.....	.....	2	.....	1	.....	.....	0	0	.....	
Hernosand	29.13	739.9	29.18	741.2	29.5	— 1.4	100	Calm	.....	.....	0	.....	2	.....	.....	0	0	.....	
Stockholm	29.01	736.9	29.19	741.4	33.1	0.6	96	Calm	.....	.....	0	.....	10	.....	.....	0.118	3.0	Snowing	
Wisby	29.23	742.5	29.29	744.0	33.1	0.6	96	SW	.....	.....	7	.....	10	.....	.....	0.083	2.1	.....	
Sub-Series.																			
Upsala	29.18	740.1	29.21	742.0	32.9	0.5	100	SW	2.2	1.0	.....	.....	10	.....	.....	0.026	0.66	Foggy	Dr. Hildebrandsson.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.80	731.5	30.30	769.5	28.6	— 1.9	80	WSW	.....	.....	1	.....	9	.....	.....	0	0	Vapory	The Observatory.
Zurich	28.51	724.1	30.23	767.9	29.5	— 1.4	75	SE	.....	.....	1	.....	9	.....	.....	0.122	3.1	Covered	The Observatory.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—For Geneva the corresponding departures from the normal values are: Barometer, +4.9 mm; Thermometer, —3.7 cent.; Relative Humidity, +0.0 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	30.11	764.7	33.8	1.0	92	N	15	6.5	.....	.....	10	.....	N	0.047	1.2	Snowing	The Observatory.
Fao, (Persian Gulf)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	B. Stefanides.
Salonica	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. Bertrand.
Valona	.....	.....	30.00	762.0	48.6	9.2	.....	NE	.....	.....	1	.....	2	.....	.....	0	0	Slightly cl'dy	Imperial Observatory.
Varna	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Sub-Series.																			
Beirut,(Syria,) Lee Obs'y	29.86	758.4	29.98	761.6	60.3	15.7	68	S	.....	.....	2	.....	8kn	.....	SW	0.69	17.5	D. clouds	Prof. C. V. A. Van Dyck

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Hon. J. Ferguson.
Brockville, Ontario	30.29	769.4	30.61	777.5	28	— 2.2	.....	NE	1	0.4	.....	0	2s	.....	E	0.03	0.8	Fair	W. R. Bigg.
*Chatham, N. B	30.34	770.6	30.41	772.4	16	— 8.9	95	NW	1	0.4	.....	0	0	.....	.....	0	0	Clear	G. A. Blair.
Charlottetown, P. E. Island.	30.27	768.8	30.31	769.9	27	— 2.8	76	NW	14	6.3	.....	.....	10s	.....	Calm	0	0	Cloudy	H. J. Cundall, C. E.
Cornwall, Ontario	30.38	771.6	30.59	777.0	26.5	— 3.1	100	E	.....	.....	1	1k	0	.....	.....	0	0	Clear	James Smith, M. A.
Dalhousie, N. B	30.32	770.1	.....	.....	.....	.....	.....	NW	.....	.....	1	.....	.....	.....	.....	0	0	Bright	H. A. Johnson.
Esquimault, B. C	29.71	754.6	29.76	755.9	38.6	3.7	100	N	.....	.....	.....	9ck	0	.....	.....	0	0	Cloudy	W. H. Bevis.
*Father Point, Quebec	30.56	776.2	30.58	776.7	22	— 5.6	86	N	12	5.4	.....	5ck	2s	NE	NE	0	0	Fair	J. McWilliams.
Fredericton, N. B	30.42	772.7	30.49	774.4	8.9	—12.8	100	NW	1.0	0.4	.....	.....	0	.....	.....	0	0	Clear	Prof. Harrison.
*Fort Garry, Manitoba	28.95	735.3	29.77	756.1	42	5.6	100	SE	13	5.8	.....	5k	5n	SE	SE	1.134	28.80	Cloudy	James Stewart.
Goderich, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	H. J. Strang, M. A
Granton, Ontario	29.28	743 7	30.43	772.9	33	0.6	100	E	.....	.....	1	.....	10n	.....	.....	Inap.	Inap.	Cloudy	James Grant.
*Halifax, N. S	30.15	765.8	30.29	769.4	25	— 3.9	75	NW	12	5.4	.....	0	2ks	.....	NW	0	0	Fair	F. Allison, M. A.
Hamilton, Ontario	30.16	766.1	30.56	776.2	30.7	4.3	85	E	.....	.....	2	10cs	.....	.....	.....	0	0	Misty	Geo. Dickson, M. A
Heart's Content, N. F	29.92	760.0	29.94	760.5	29	— 1.7	88	SW	.....	.....	3	.....	10	.....	.....	0.19	4.8	Overcast	E. Weedon.
*Kingston, Ontario	30.25	768.3	30.60	777.2	29	— 1.7	91	NE	5	2.2	.....	.....	10s	.....	Calm	Inap	Inap.	Cloudy	S. Woods, M. A.
Little Glace Bay, N. S	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	C. H. Rigby.
*Montreal, Quebec	30.41	772.4	30.63	778.0	19	— 7.2	100	Calm	0	0	.....	.....	Fog	.....	.....	Inap.	Inap.	Foggy	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.79	756.7	30.51	774.9	37	2.8	99	SE	16	7.2	.....	.....	Fog	.....	SE	Inap.	Inap.	Foggy	Rev. R. Mosley.
Peterboro, Ontario	29.78	756 4	30.58	776.7	30.7	— 0.7	51	Calm	.....	.....	0	.....	10	.....	.....	0	0	Hvy. Mist	J. F. Jeffers, B. A.
Port Dover, Ontario	29.75	755.6	30.47	773.9	40	4 4	100	NE	9	4.0	.....	.....	Fog	.....	.....	0.01	0.3	Foggy	H. Morgan.
Port Hastings, N. S	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Peter Grant
Port Stanley, Ontario	29.76	755.9	30.43	772.9	40	4.4	97	E	3	1.3	.....	.....	10n	.....	E	0.01	0.3	Cloudy	M. Payne.
*Quebec, Quebec	30.25	768.3	30.61	777.5	12	—11.1	61	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	Capt. Ashe, R. N
*Rockliffe, Ontario	30.14	765.5	30.63	778.0	27	— 2.8	94	SE	10	4.5	.....	.....	10s	.....	SE	0.01	0.3	Cloudy	W. H. McIntyre.
St. John, N. B	30.26	768.6	30.44	773.2	18	— 7.8	68	NW	7	3.1	.....	0	0	.....	.....	0	0	Clear	G. Murdock, C. E.
*Saugeen, Ontario	29.69	754.1	30.41	772.4	40	4.4	92	SE	5	2.2	.....	10ck	0	.....	.....	0	0	Cloudy	K. Stewart.
Stayner, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. J. Cole.
Stratford, Ontario	29.19	741.4	30.53	775.4	36 4	2.4	99	SE	10.0	4.5	.....	.....	Fog	.....	.....	0	0	Foggy	C. J. MacGregor, M. A.
*Sydney, C. B	30.13	765.3	30.16	766.1	28	— 2.2	81	NW	7	3.1	.....	.....	10n	.....	.....	0	0	Cloudy	T. C. Hill.
*Toronto, Ontario	30.14	765.5	30.54	775.7	36	2.2	100	E	12	5.4	.....	.....	Fog	.....	.....	0.01	0.3	Foggy	Magnetic Observatory.
Windsor, N S	30.22	767.6	30.32	770.1	27.0	— 2.8	94	N	0	0	.....	.....	10k	.....	.....	0	0	Fair	Prof. John E. Oram.
Woodstock, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Montgomery
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	30.0	— 1.1	.....	S	.....	.....	.....	0	10ks	.....	.....	0.08	2.0	Fair	John Delany
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

By authority of the **SECRETARY OF WAR.** UNITED STATES SERIES.

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	30.34	770.6	30.59	777.0	30	— 1.1	79	NW	10	4.5	.....	.....	10s	.....	Calm	0	0	Cloudy	
Alpena, Michigan	29.71	754.6	30.38	771.6	40	4.4	100	SE	10	4.5	.....	.....	Fog	.....	Calm	0.16	4.1	Light rain	
Atlantic City, New Jersey	30.51	774.9	30.53	775.4	41	5.0	91	NE	8	3.6	.....	.....	10s	.....	Calm	0	0	Cloudy	
Augusta, Georgia	30.15	765.8	30.34	770.6	55	12.8	97	E	3	1.3	.....	.....	10s	.....	NE	0.01	0.3	Cloudy	
Baltimore, Maryland	30.48	774.2	30.53	775.4	45	7.2	84	SW	1	0.4	.....	.....	10s	.....	Calm	0	0	Cloudy	
Barnegat, New Jersey	30.50	774.7	30.53	775.4	43	6.1	79	E	14	6.3	.....	10k	Haze	Calm	Calm	0	0	Cloudy	
Bismarck, Dakota	27.86	707.6	29.55	750.6	32	0.0	89	W	12	5.4	.....	.....	10s	.....	W	0.61	15.5	Cloudy	
Boise City, Idaho	26.92	683.8	29.80	756.9	29	— 1.7	83	N	4	1.8	.....	.....	10s	.....	Calm	0	0	Cloudy	
Boston, Massachusetts	30.38	771.6	30.55	776.0	28.5	— 1.9	72	NW	12	5.4	.....	1k	0	.....	.....	0	0	Clear	
Brackettville, Texas	28.78	731.0	29.80	756.9	56	13.3	80	Calm	0	0	.....	5k	5n	Calm	S	0.07	1.8	Light rain	
Breckenridge, Minnesota	28.70	729.0	29.68	753.9	46	7.8	96	SE	20	8.9	.....	.....	10n	.....	Calm	0.54	13.7	Light rain	
Brownsville, Texas	29.85	758.2	29.91	759.7	61	16.1	88	E	4	1.8	.....	5k	0	E	.....	0	0	Fair	
Buffalo, New York	29.74	755.4	30.47	773.9	41	5.0	91	NE	8	3.6	.....	.....	10s	.....	Calm	0	0	Cloudy	
Burkes, Arizona	.....	.....	.....	.....	40	4.4	82	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Burlington, Vermont	30.34	770.6	30.62	777.7	29	— 1.7	77	N	4	1.8	.....	.....	10s	.....	Calm	Inap.	Inap.	Cloudy	
Cairo, Illinois	29.78	756.4	30.17	766.3	59	15.0	88	E	7	3.1	.....	.....	10s	.....	Calm	0.46	11.7	Cloudy	
Camp Grant, Arizona	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Camp Verde, Arizona	26.73	678.9	30.22	767.6	30	— 1.1	89	NW	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Campo, California	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Cape Hatteras, N. Carolina	30.42	772.7	30.42	772.7	54	12.2	86	NE	10	4.5	.....	.....	10s	.....	NE	0.02	0.5	Cloudy	
Cape Henry, Virginia	30.45	773.4	30.47	773.9	47	8.3	85	NE	14	6.3	.....	.....	10s	.....	NE	0	0	Cloudy	
Cape Lookout, N. Carolina	30.38	771.6	30.40	772.1	55	12.8	93	NE	14	6.3	.....	.....	10s	.....	NE	0.26	6.6	Cloudy	
Cape May, New Jersey	30.48	774.2	30.51	774.9	41	5.0	91	NE	8	3.6	.....	5c	0	W	.....	0	0	Fair	
Charleston, South Carolina	30.28	769.1	30.34	770.6	60	15.6	94	NE	9	4.0	.....	2cs	8s	Calm	SE	0.21	5.3	Cloudy	
Cheyenne, Wyoming	23.82	605.0	29.76	755.9	26	— 3.3	40	W	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Chicago, Illinois	29.49	749.0	30.18	766.6	53	11.7	86	S	4	1.8	.....	.....	10s	.....	SE	0.19	4.8	Cloudy	
Cincinnati, Ohio	29.61	752.1	30.27	768.8	50	10.0	86	Calm	0	0	.....	.....	10s	.....	S	0.34	8.6	Cloudy	
Cleveland, Ohio	29.64	752.8	30.38	771.6	46	7.8	76	SE	6	2.7	.....	.....	10s	.....	SE	0.01	0.3	Cloudy	
Concho, Texas	28.04	712.2	29.74	755.4	45	7.2	75	NW	2	0.9	.....	8cs	0	NW	.....	0	0	Cloudy	
Corsicana, Texas	29.53	750.0	30.00	762.0	51	10.6	86	W	5	2.2	.....	Haze	2s	Calm	Calm	0	0	Fair	
Davenport, Iowa	29.48	748.8	30.12	765.0	52	11.1	93	SE	1	0.4	.....	4k	0	SE	.....	0.18	4.6	Fair	
Deadwood, Dakota Ty	.....	.....	.....	.....	12	—11.1	80	NW	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Denison, Texas	29.25	742.9	30.06	763.5	49	9.4	93	NE	4	1.8	.....	.....	Fog	.....	Calm	Inap.	Inap.	Foggy	
Denver, Colorado	24.60	624.8	29.82	757.4	23	— 5.0	60	NE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Detroit, Michigan	29.66	753.4	30.35	770.9	43	6.1	91	E	6	2.7	.....	.....	10s	.....	E	0.11	2.8	Cloudy	
Dodge City, Kansas	27.41	696.2	29.81	757.2	29	— 1.7	89	Calm	0	0	.....	0	0	.....	.....	Inap.	Inap.	Clear	
Dubuque, Iowa	29.37	746.0	30.07	763.8	52	11.1	93	S	1	0.4	.....	.....	10ks	.....	Calm	0.24	6.1	Cloudy	
Duluth, Minnesota	29.29	744.0	29.98	761.5	44	6.7	96	NE	16	7.2	.....	.....	10s	.....	NE	0.25	6.3	Cloudy	
Eagle Pass, Texas	29.16	740.7	29.89	759.2	57	13.9	87	N	1	0.4	.....	2k	8s	S	Calm	0.48	12.2	Cloudy	
Eastport, Maine	30.36	771.1	30.43	772.9	23	— 5.0	73	N	11	4.9	.....	0	0	.....	.....	0	0	Clear	
Erie, Pennsylvania	29.66	753.4	30.40	772.1	45	7.2	92	Calm	0	0	.....	.....	Fog	.....	.....	0	0	Foggy	
Escanaba, Michigan	29.57	751.1	30.24	768.1	42	5.6	96	E	6	2.7	.....	.....	10n	.....	Calm	0.74	18.8	Light rain	
Florence, Arizona	28.32	719.3	29.92	760.0	50	10.0	32	E	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Fort Bayard, New Mexico	24.01	609.8	30.01	762.2	26	— 3.3	76	NW	11	4.9	.....	0	0	.....	.....	0	0	Clear	
Fort Craig, New Mexico	25.50	647.7	.....	.....	21	— 6.1	71	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Fort Gibson, Indian Ter	29.52	749.8	30.08	764 0	42	5.6	91	SE	2	0.9	.....	.....	Fog	.....	.....	0	0	Cloudy	
Fort Griffin, Texas	28.76	730.5	30.05	763.3	51	10.6	79	N	2	0.9	.....	0	5s	.....	Calm	0	0	Fair	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	28.81	731.8	29.94	760.5	43	6.1	83	N	10	4.5	.....	0	8s	.....	SW	0	0	Fair	
Galveston, Texas	29.83	757.7	29.88	758.9	60	15.6	94	NE	8	3.6	.....	.....	10ks	.....	E	0.15	3.8	Threatening	
Grand Haven, Michigan	29.55	750.6	30.21	767.3	53	11.7	86	SE	8	3.6	.....	.....	10s	.....	Calm	0.10	2.5	Cloudy	
Indianapolis, Indiana	29.43	747.5	30.21	767.3	55	12.8	93	SE	6	2.7	.....	.....	10n	.....	SE	0.54	13.7	Light rain	
Indianola, Texas	29.89	759.2	29.92	760.0	60	15.6	100	N	28	12.5	.....	.....	10ks	.....	NE	0.33	8.4	Cloudy	
Jacksboro, Texas	28.89	733.8	30.03	762.7	49	9.4	85	N	8	3.6	.....	.....	10s	.....	N	0	0	Cloudy	
Jacksonville, Florida	30.18	766.6	30.21	767.3	66	18.9	84	E	8	3.6	.....	.....	10s	.....	SE	0.03	0.8	Cloudy	
Keokuk, Iowa	29.43	747.5	30.05	763.3	53	11.7	79	S	8	3.6	.....	0	4s	.....	Calm	0.02	0.5	Fair	
Key West, Florida	30.01	762.2	30.04	763.0	74.0	23.3	74	E	15	6.7	.....	8ck	0	W	.....	Inap.	Inap.	Cloudy	
Kittyhawk, North Carolina	30.44	773.2	30.47	773.9	52	11.1	93	NE	14	6.3	.....	.....	10s	.....	NE	0	0	Cloudy	
Knoxville, Tennessee	29.28	743.7	30.30	769.6	50	10.0	93	NE	3	1.3	.....	.....	10ks	.....	E	0.12	3.0	Cloudy	
La Crosse, Wisconsin	29.24	742.7	29.97	761.2	58	14.4	100	S	10	4.5	.....	.....	10n	.....	S	0.07	1.8	Light rain	
La Mesilla, New Mexico	26.06	661.9	30.21	767.3	27	— 2.8	77	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Laredo, Texas	.....	.....	.....	.....	55	12.8	68	N	3	1.3	.....	5cs	0	Calm	.....	0.37	9.4	Fair	
Leavenworth, Kansas	29.16	740.7	30.01	762.2	47	8.3	77	S	2	0.9	.....	0	8ks	.....	S	0.20	5.1	Cloudy	
Los Angeles, California	29.56	750.8	29.90	759.4	51	10.6	72	N	4	1.8	.....	0	8s	.....	SE	0	0	Cloudy	
Louisville, Kentucky	29.67	753.6	30.23	767.8	53	11.7	93	E	2	0.9	.....	.....	10s	.....	S	0.39	9.9	Cloudy	
Lynchburg, Virginia	29.77	756.1	30.43	774.2	49	9.4	71	NE	2	0.9	.....	.....	10s	.....	NE	0	0	Cloudy	
Maricopa Wells, Arizona	.....	.....	.....	.....	38	3.3	54	N	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Marquette, Michigan	29.48	748.8	30.10	766.8	43	6.1	75	SE	6	2.7	.....	.....	10s	.....	Calm	0.16	4.1	Cloudy	
Mason, Texas	28.35	720.1	30.10	764.5	55	12.8	87	Calm	0	0	.....	0	5s	.....	Calm	0	0	Fair	
Memphis, Tennessee	29.81	757.2	30.13	765.3	61	16.1	94	E	4	1.8	.....	.....	10s	.....	SE	0.13	3.3	Cloudy	
Milwaukee, Wisconsin	29.48	748.8	30.18	766.6	46	7.8	100	SE	13	5.8	.....	.....	Fog	.....	.....	0.24	6.1	Dense fog	
Mobile, Alabama	29.96	761.5	30.03	762.7	63	17.2	94	E	18	8.0	.....	.....	10n	.....	E	0.13	3.3	Light rain	
Montgomery, Alabama	29.92	760.0	30.16	766.1	62	16.7	91	E	10	4.5	.....	.....	10n	.....	E	0.22	5.6	Light rain	
Morgantown, West Virginia	29.29	744.0	30.40	772.1	40	4.4	77	Calm	0	0	.....	8c	Fog	SW	.....	0	0	Fair	
Mt. Washington, N. H.	24.00	609.6	30.36	771.1	22	— 5.6	56	N	30	13.4	.....	0	5s	.....	N	0	0	Fair	
Nashville, Tennessee	29.67	753.6	30.21	767.3	56	13.3	87	E	3	1.3	.....	.....	10s	.....	E	0	0	Cloudy	
New Haven, Connecticut	30.44	773.2	30.56	776.2	33	0.6	89	NE	8	3.6	.....	0	0	.....	.....	0	0	Clear	
New London, Connecticut	30.49	774.4	30.55	776.0	32	0.0	89	N	5	2.2	.....	0	0	.....	.....	0	0	Clear	
New Orleans, Louisiana	29.91	759.7	29.97	761.2	63	17.2	94	NW	4	1.8	.....	.....	10n	.....	Calm	0.28	7.1	Light rain	
Newport, Rhode Island	30.48	774.2	30.54	775.7	33	0.6	79	N	6	2.7	.....	0	0	.....	.....	0	0	Clear	
New York, New York	30.37	771.4	30.56	776.2	40	4.4	82	N	8	3.6	.....	0	8ks	.....	Calm	0	0	Fair	
Norfolk, Virginia	30.42	772.7	30.48	774.2	46	7.8	92	NE	8	3.6	.....	.....	10s	.....	NE	0.03	0.8	Cloudy	
North Platte, Nebraska	27.00	685.8	29.64	752.8	30	— 1.1	78	NW	8	3.6	.....	5ck	0	W	.....	0.28	7.1	Fair	
Olympia, Washington Ter.	29.68	753.9	29.72	754.9	39	3.9	91	NW	3	1.3	.....	5c	0	Calm	.....	0.19	4.8	Fair	
Omaha, Nebraska	28.97	735.8	30.07	763.8	40	4.4	81	S	8	3.6	.....	0	0	.....	.....	0.17	4.3	Clear	
Oswego, New York	30.22	767.6	30.56	776.2	38	3.3	95	NE	7	3.1	.....	.....	Fog	.....	Calm	0	0	Foggy	
Pembina, Dakota	28.86	733.0	29.69	754.1	43	6.1	100	SE	16	7.2	.....	.....	10n	.....	SE	0.37	9.4	Light rain	
Philadelphia, Pennsylvania	30.50	774.7	30.55	776.0	40	4.4	82	NE	10	4.5	.....	.....	10s	.....	NE	0	0	Cloudy	
Phœnix, Arizona	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Pike's Peak, Colorado	17.56	446.0	29.76	755.9	3	—16.1	73	W	22	9.8	.....	5cs	0	N	.....	0	0	Fair	
Pioche, Nevada	23.87	606.3	29.64	752.8	29	— 1.7	66	SE	6	2.7	.....	8ck	0	S	.....	0	0	Cloudy	
Pittsburg, Pennsylvania	29.54	750.3	30.39	771.9	40	4.4	91	E	2	0.9	.....	2c	2s	W	.....	0	0	Fair	
Port Huron, Michigan	29.67	753.6	30.36	771.1	43	6.1	92	SE	2	0.9	.....	.....	10s	.....	SE	Inap.	Inap.	Cloudy	
Portland, Maine	30.36	771.1	30.52	775.2	32	0.0	69	NW	7	3.1	.....	0	Fog	.....	.....	0	0	Clear	
Portland, Oregon	29.69	754.1	29.79	756.7	40	4.4	91	Calm	0	0	.....	.....	10s	.....	Calm	0.40	10.2	Cloudy	
Prescott, Arizona	24.68	626.9	30.04	763.0	24	— 4.4	87	NE	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Punta Rassa, Florida	30.10	764.5	30.12	765.0	69	20.6	79	E	16	7.2	.....	0	10ks	.....	E	Inap.	Inap.	Cloudy	
Red Bluff, California	29.28	743.7	29.64	752.8	47	8.3	92	SE	14	6.3	.....	.....	10n	.....	Calm	0.80	20.3	Light rain	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Rochester, New York	29.88	758.9	30.53	775.4	38	3.3	95	SE	6	2.7	.....	.....	Fog	.....	Calm	0.02	0.5	Foggy	
Roseburg, Oregon	29.13	739.9	29.70	754.4	41.5	5.3	96	NW	6	2.7	.....	.....	10n	.....	Calm	1.14	29.0	Light rain	
Sacramento, California	29.58	751.3	29.67	753.6	50	10.0	93	SE	15	6.7	.....	.....	10n	.....	S	0.26	6.6	Light rain	
St. Louis, Missouri	29.55	750.6	30.13	765.3	51	10.6	98	SE	6	2.7	.....	.....	Fog	.....	.....	0.09	2.3	Foggy	
St. Marks, Florida	30.10	764.5	30.12	765.0	65	18.3	90	SE	14	6.3	.....	.....	10s	.....	SE	1.35	34.3	Cloudy	
St. Paul, Minnesota	29.03	737.3	29.85	758.2	50	10.0	90	SE	14	6.3	.....	5k	0	SE	.....	0.16	4.1	Fair	
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salt Lake City, Utah	25.47	646.9	29.80	756.9	29	— 1.7	67	W	6	2.7	.....	0	0	.....	.....	0	0	Clear	
San Antonio, Texas	29.23	742.4	29.82	757.4	55	12.8	100	N	3	1.3	.....	2ck	5s	Calm	N	0.10	2.5	Cloudy	
San Diego, California	29.88	758.9	29.96	761.0	52	11.1	79	E	10	4.5	.....	.....	10s	.....	SW	0	0	Cloudy	
Sandusky, Ohio	29.66	753.4	30.35	770.9	47	8.3	77	E	16	7.2	.....	.....	10s	.....	Calm	0.01	0.3	Cloudy	
Sandy Hook, New Jersey	30.52	775.2	30.54	775.7	42	5.6	83	NE	15	6.7	.....	.....	10ks	.....	NE	0	0	Cloudy	
San Francisco, California	29.61	752.1	29.67	753.6	50	10.0	82	S	14	6.3	.....	.....	10n	.....	SW	0.35	8.9	Heavy rain	
Santa Fé, New Mexico	23.18	588.8	29.72	754.9	18	— 7.8	60	NE	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Savannah, Georgia	30.21	767.3	30.30	769.6	60	15.6	100	E	7	3.1	.....	.....	Fog	.....	.....	0.26	6.6	Foggy	
Shreveport, Louisiana	29.82	757.4	30.04	763.0	55	12.8	87	NE	4	1.8	.....	.....	10s	.....	NE	0	0	Cloudy	
Smithville, North Carolina	30.36	771.1	30.40	772.1	54	12.2	100	N	10	4.5	.....	.....	Fog	.....	Calm	0.08	2.0	Foggy	
Springfield, Massachusetts	30.36	771.1	30.50	774.7	32	0.0	60	N	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Stockton, Texas	26.93	684.0	29.93	760.2	40	4.4	91	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Thatcher's Island, Mass.	30.46	773.7	30.52	775.2	35	1.7	70	N	16	7.2	.....	0	0	.....	.....	0	0	Clear	
Toledo, Ohio	29.63	752.6	30.33	770.4	43	6.1	91	NE	6	2.7	.....	.....	10s	.....	SW	0.06	1.5	Cloudy	
Tucson, Arizona	.....	.....	.....	.....	32	0.0	50	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Tybee Island, Georgia	30.27	768.8	30.30	769.6	58	14.4	100	NE	12	5.4	.....	.....	10n	.....	E	0.11	2.8	Light rain	
Umatilla, Oregon	29.43	747.5	.....	.....	35	1.7	100	SW	4	1.8	.....	.....	10n	.....	SW	0.18	4.6	Light rain	
Vicksburg, Mississippi	29.81	757.2	30.07	763.8	61	16.1	94	Calm	0	0	.....	.....	10n	.....	Calm	0.15	3.8	Light rain	
Virginia City, Montana	24.04	610.6	29.52	749.8	15	— 9.4	65	SE	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Visalia, California	29.47	748.5	29.84	757.9	42	5.6	83	E	5	1.2	.....	5ck	2ks	SW	SW	0	0	Cloudy	
Washington, D. C.	30.41	772.4	30.53	775.4	46	7.8	84	E	2	0.9	.....	.....	10s; fg	.....	E	0	0	Cloudy	
Wickenburg, Arizona	.....	.....	.....	.....	29	— 1.7	78	S	.....	.....	.....	2c	0	Calm	.....	0	0	Fair	
Wilmington, N. Carolina	30.32	770.1	30.40	772.1	53	11.7	100	NE	6	2.7	.....	.....	Fog	.....	Calm	0.21	5.3	Dense fog	
Winnemucca, Nevada	25.28	642.1	29.64	752.8	31	— 0.6	69	E	8	3.6	.....	10k	0	SW	.....	0	0	Cloudy	
Wood's Holl, Mass.	30.47	773.9	30.52	775.2	35	1.7	70	NE	12	5.4	.....	.....	10s	.....	NE	0	0	Cloudy	
Yankton, Dakota	28.61	726.7	29.94	760.5	33	0.6	89	SW	4	1.8	.....	0	0	.....	.....	0.62	15.7	Clear	
Yuma, Arizona	29.76	755.9	29.93	760.2	46	7.8	92	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Sub-Series.																			
York Factory, B. A.	29.97	761.2	30.03	762.7	24.0	— 4.4	100	SW	10	4.5	.....	3ck	4s	W	W	0.30	7.6	Rain & snow	J. Fortescue, W. Wood.
Havana, Cuba, W. I.	29.99	761.7	30.01	762.2	74	23.3	81	SE	4.8	2.1	.....	4ck	0	NW	.....	0	0	Fair	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.13	765.3	30.14	765.5	77	25.0	86	Calm	0	0	.....	2c	5s	SE	SE	0	0	.....	James Gall.
Navassa, W. I.	29.91	759.7	29.99	761.7	78	25.6	.....	NE	12	5.4	.....	.....	.....	.....	.....	0	0	Cloudy	F. M Everett.
St. Thomas, W. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	G. O. Gellich.
Paramaribo, D. Guiana, S. A.	.....	.....	.....	.....	83	28.3	79	E	.....	.....	2	5k	6ks	E	.....	0.020	0.51	½ Cloudy	C. J. Hering.
Batavia, Dutch Guiana, S. A	30.02	762.4	29.95	760.7	86.0	30	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0	Cloudy	Dr. H. Groot.
Medellin, Colombia, S. A.	25.20	640.1	30.02	762.6	65.4	18.6	83	Calm	.....	.....	0	1c; cs	2ks	.....	.....	0.60	15.2	Fair	Thomas Herran.
Honolulu, Oahu, H. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Daniel Smith.
Makawao, Maui, H. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo; for Batavia, the barometer reduced to freezing but not to sea-level. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,638 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,560 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 538.4 m.; Deadwood, (?); Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,500 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Ploche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m. Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft. or 389.6 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington 6.36 in.; Pike's Peak, 12.21 in.; Ploche, 5.77 in.; Prescott, 5.86 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.00 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation

STATIONS AND VESSELS.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard Mare Island, Cal.	29.65	753.1	51	10.6	50	10.0	86	W	18	8.0	.....	.....	9s;n	.....	W	0.25	6.3	.....	.....	Rainy.....	
Navy Yard, Pensacola, Fla.	30.12	765.0	.....	.....	63	17.2	100	ENE	29	13.0	.....	.....	10	.....	.....	1.10	27.9	.....	.....	Squally.....	
Navy Yard, Portsmouth, N.H	30.52	775.2	55	12.8	25	— 3.9	??	NW	.....	.....	1	.....	.....	.....	.....	0	0	.....	.....	Clear	
Naval Hospital, Yokohama, Japan.....	30.14	765.5	47	8.3	41	5.0	36	N	.....	.....	5	.....	0	.....	.....	Inap.	Inap.	.....	.....	Clear.....	
Alliance, Smyrna, Turkey.....	30.06	763.5	53	11.7	50	10.0	64	ENE	.....	.....	0-1	.....	10	.....	E	.....	.....	.....	.....	Overcast.....	
Ashuelot. Shanghai, China.....	30.58	776.7	49	9.4	33	0.6	100	WSW	.....	.....	2	.....	8	.....	Calm	.....	.....	.....	.....	D. clouds.....	
Canonicus, New Orleans, La.....	29.96	761.0	47	8.3	61	16.1	94	NE	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	Rainy...	
Colorado, New York, N. Y.....	30.54	775.7	42	5.6	39	3.9	82	NNE	4	1.8	.....	.....	1	.....	NNE	0	0	.....	.....	Light fog.....	
Despatch, Constantinople, Turkey.	30.24	768.1	70	21.1	36	2.2	90	NNE	.....	.....	4	.....	10	.....	NE	.....	.....	.....	.....	Snowing.....	
Essex, S. 9° 41′, E. 10° 29′.....	29.80	756.9	82	27.8	83	28.3	70	SW	.....	.....	2	.....	7	.....	.....	.....	.....	Long	SW	D. clouds.....	
Franklin, Norfolk, Va.....	30.56	776.2	50	10.0	47	8.3	??	ENE	3	1.3	.....	.....	.....	.....	ENE	0	0	.....	.....	Cloudy.....	
Guard, Lisbon, Portugal.....	30.34	770.6	57	13.9	52	11.1	73	ENE	.....	.....	1	.....	1	.....	E	.....	.....	.....	.....	Hazy.....	
Lackawana, Mare Island, Cal.....	29.73	755.1	.....	.....	53	11.7	80	W	.....	.....	0-3	.....	10	.....	.....	.....	.....	.....	.....	Raining.....	
Marion, Villefranche, France.....	30.12	765.0	56	13.3	54	12.2	55	SW	.....	.....	1	.....	6	.....	.....	0	0	Smooth	S	D. clouds. ...	
Michigan, Erie, Pa.....	29.90	759.4	56	13.3	43	6.1	75	NE	.....	.....	1	.....	10	.....	NE	.....	.....	.....	.....	Cloudy.....	
Monocacy, Hong-Kong, China.....	30.21	767.3	61	16.1	57	13.9	81	E	.....	.....	1	.....	10	.....	S&W	0	0	.....	.....	D. clouds....	
New Hampshire, Port Royal, S.C.....	30.46	773.7	.....	.....	61	16.1	100	NE	2	0.9	.....	.....	9	.....	.....	0.11	2.8	.....	.....	Foggy	
Omaha, Valparaiso, Chili.....	30.07	763.8	64	17.8	61	16.1	74	Calm	0	0	.....	.....	10	.....	W	0	0	.....	.....	Cloudy.....	
Onward, Callao, Peru.....	29.98†	761.5†	78	25.6	75.5	24.2	84	SE	.....	.....	3	.....	4	.....	.....	.....	.....	Long	W	D clouds....	
Ossinee, Norfolk, Va.....	30.54	775.7	65	18.3	49	9.4	93	NE	.....	.....	2	.....	9	.....	NE	.....	.....	.....	.....	D. clouds.....	
Palos, Shanghai, China.....	30.56	776.2	43	6.1	32	0.0	90	W	.....	.....	1	.....	8	.....	W	.....	.....	.....	.....	Misty.....	
Plymouth, Aspinwall.....	29.92	760.0	82	27.8	82	27.8	96	E	.....	.....	3	.....	5	.....	.....	.....	.....	Smooth	NE	.....	
Powhatan, Norfolk, Va.....	.....	.....	.....	.....	50	10 0	100	NE	4.8	2.1	.....	.....	8	.....	.....	0	0	.....	.....	Overcast.....	
Ranger, Shanghai, China.....	30.68	779.3	.....	.....	39	3 9	82	W	.....	.....	2	.....	10	.....	N&W	.....	.....	.....	.....	Cloudy...	
Rio Bravo, Brownsville, Texas.....	29.77	756.1	.....	.....	62	16.7	94	NNE	.....	.....	2	.....	8	.....	NNW	.....	.....	.....	.....	D. clouds....	
Santee, Annapolis, Md.....	30.58	776.7	68	20.0	44	6 7	84	N	.....	.....	2	.....	10	.....	N	0	0	.....	.....	Cloudy.....	
Saratoga, Norfolk, Va.....	.....	.....	.....	.....	46	7.8	??	NNE	.....	.....	3	.....	10	.....	Calm	Light	Light	.....	.....	Cloudy.....	
St. Louis, League Island, Pa	30.37	771.4	42	5.6	44	6.7	84	NE	7	3.1	.....	.....	10	.....	NE	0	0	.....	.....	Overcast.....	
Swatara, Norfolk, Va.....	30.55	776.0	.....	.....	50	10.0	86	NE	.....	.....	2	.....	9	.....	N&E	.....	.....	.....	.....	D. clouds.....	
Tennessee, Shanghai, China.....	30.54	775.7	72	22.2	37	2.8	81	WNW	.....	.....	1	.....	10	.....	.....	0	0	.....	.....	D. clouds.....	
Trenton, Villefranche, France.....	30.19	766.8	.....	.....	59	15.0	39	SSW	6	2.7	.....	.....	2	.....	S&W	0	0	.....	.....	D. clouds.....	
Vandalia, Palermo, Sicily.....	30.14	765.5	57	13.9	59	15.0	59	NNW	.....	.....	2	.....	3	.....	W	.....	.....	.....	.....	D. clouds.....	
Wabash, Boston, Mass.....	30.55	776.0	42	5.6	29	— 1.7	.....	NW	7	3.1	.....	.....	1	.....	Calm	0	0	.....	.....	D. clouds.....	
Wyoming, Washington, D. C.....	30.74†	780.8†	.....	.....	45	7.2	.....	Calm	.....	.....	0	.....	10	.....	.....	.....	.....	.....	.....	Drizzling.....	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. The position given for the Plymouth is that at noon, local time, instead of that at 7:35 a. m., Washington time.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Character.	Direction from—		
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			
S. S. China																			
S. S. City of New York																			Capt. Berry.
S. S. City of Panama, N. 44° 2′, W. 124° 40′			29.55*	750.6*	50	10.0		NNW			4		0						Capt. Cobb.
S. S. City of Peking, N. 30° 58′, E. 150° 20′			30.09*	764.3*	68	20.0	95	SW			7		10		W	Mod'ate	SW	Raining	Capt. Seabury.
S. S. City of Sydney																			Lt. Z. L. Tanner, U.S.N.
S. S. City of Tokio, N. 28° 40′, E. 118° 00′			30.20	769.4	65	18.3		NE			8		10		NE	Rough	NE	Overcast	Capt. Dearborn.
S. S. Colima																			Capt. Maury.
S. S. Costa Rica																			Capt. Searle.
S. S. Dakota																			Capt. Whitebury.
S. S. Georgia																			Capt. Morse.
S. S. Grenada																			Capt. Cavarly.
S. S. Wilmington																			Capt. Connolly.
																			Capt. Austin.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. *Aneroid.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.

S. S. Belgic, N. 37° 9′, E. 147° 44′			30.06*	763.5*				SE			3		Heavy		NW	Mod'ate	NW	Overcast	Capt. John Metcalf.
S. S. Gaelic, Hong-Kong, China			30.17†	766.9†	60	15.6	82	NE			4		lt					D. clouds	Capt. W. H. Kidley
S. S. Oceanic, N. 36° 30′, W. 145° 02′			30.26	768.6	62	16.7	77	NE			4		9		NE		N	D. clouds	Capt. H. Parsell.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. * Corrected for temperature and elevation; instrumental error not known. †Aneroid.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig																			Capt. Undutsch.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds.

UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Lo'wr	Upper.	Lower.	Character.	Direction From—		
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second	0—10.	0—10.	0—10.	From—	From—				
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, N. 43° 03′, W. 59° 07′			30.27*	768.8*	35	1.7	??	N			4		3		NE	Light	ENE	Snow-squalls	Captain Sargent.
S. S. Ohio, N. 52° 26′, W. 6° 02′			30.22	767.6	49	9.4	93	WNW			4		0			Smooth		Dull	Captain Morrison.
S. S. Pennsylvania, N. 39° 48′, W. 72° 54′			30.50†	774.7†	42	5.6	83	NE			2		8		NE	Light	SW	Overcast	Captain Harris.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. * Aneroid † Corrected for temperature and elevation, instrumental error not known.

RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

S. S. Nederland																			Capt. Randle.
S. S. Switzerland																			Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

S. S. Hibernian																			Capt. W. Richardson.
S. S. Scandinavian, Halifax, N. S.			30.31	769.9	20	— 6.7		N			4		2		N			D. clouds	

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, Boothbay, Maine			30.46	773.7	28	— 2.2	77	N	9	4.0			0					Clear	Capt. James Jorgensen.

NOTE.—The originals for the schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer, U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON DECEMBER 24, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—16.	Clouds. Amount. Upper 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours	.....	.....	30.24	768.0	57.2	14.0	47	Calm	.....	.....	0	.....	1	.....	.....	0	0	Very fair	Michel.
Algiers	.....	.....	30.15	765.7	55.4	13.0	61	N	.....	.....	1	.....	0	.....	.....	0	0	Clear	Peter.
La Calle	.....	.....	30.18	766.5	59.2	15.1	70	NW	.....	.....	2	.....	7	.....	.....	0.039	1.0	Very cloudy	Fleury.
Tunis	.....	.....	30.26	768.5	55.9	13.3	71	W	.....	.....	3	.....	10	.....	.....	0	0	Covered	Jacques.
Sfax	.....	.....	.....	.....	55.4	13.0	.....	W	.....	.....	2	.....	1	.....	.....	0	0	Very fair	Husson.
Saida	.....	.....	30.13	765.2	48.7	9.3	89	SSE	.....	.....	1	.....	1	.....	.....	0	0	Very fair	Millot.
Tebessa	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Bassières.
Geriville	.....	.....	30.11	764.7	38.8	3.8	90	NE	.....	.....	1	.....	4	.....	.....	0	0	Cloudy	Lemaillot.
Laghouat	.....	.....	30.14	765.6	46.4	8.0	59	E	.....	.....	2	.....	0	.....	.....	0	0	Clear	Guyot.
Biskra	.....	.....	30.19	766.8	59.2	15.1	58	NW	.....	.....	1	.....	0	.....	.....	0	0	Clear	Kuntz.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m.; or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

Agram	29.58	751.4	30.17	776.3	25.3	— 3.7	91	Calm	.....	.....	0	.....	3	.....	.....	0	0	.....	Prof. Ivan Stozir
Cracow, I. R. Observatory	29.16	740.7	29.96	761.0	31.3	— 0.4	94	W	.....	.....	1	.....	5	.....	.....	0	0	.....	Dr. Wierzbiski.
Eperies	29.15	740.3	30.10	764.4	29.1	— 0.6	92	S	.....	.....	3	.....	10	.....	.....	0	0	.....	Julius Mikolik.
Gratz	28.79	731.3	30.12	765.0	27.3	— 2.6	85	S	.....	.....	2	.....	8	.....	.....	0	0	.....	Andreas Rospini.
Hermannstadt	28.64	727.5	30.17	766.3	26.8	— 6.2	90	NE	.....	.....	1	.....	10	.....	.....	0.039	1.00	.....	Prof. Reissenberger.
Kremsmünster	28.67	728.2	30.07	763.7	34.5	1.4	78	WSW	.....	.....	2	.....	7	.....	.....	0	0	.....	Prof. C. Wagner.
Lemberg	28.87	733.2	29.91	759.7	27.0	— 2.8	98	NW	.....	.....	3	.....	10	.....	.....	0.004	0.1	.....	Dr. T. Stanecki.
Pola	29.07	701.3	30.00	764.2	45.5	7.5	66	SW	.....	.....	1	.....	1s	.....	.....	0	0	.....	I.R.Hydrographic Office.
Szathmar	29.68	753.9	30.18	766.6	23.9	— 4.5	90	SW	.....	.....	3	.....	10	.....	.....	0.091	2.3	Snowing	Johann Tamas, S. J.
Szegedin	29.84	758.0	30.14	765.6	28.2	— 3.2	87	S	.....	.....	1	.....	5	.....	.....	0.020	0.50	.....	Karl Stancel.
Trieste	30.02	762.4	30.12	765.0	44.8	7.1	68	Calm	.....	.....	0	.....	0	.....	.....	0	0	.....	P. Busin.
Vienna	29.31	744.5	30.04	762.9	37.6	3.1	64	WSW	.....	.....	2	.....	10	.....	.....	0.118	3.0	.....	I.R. Central Met. Obs'y.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or 1,125.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

Arlon	28.39	721.1	29.96	760.9	31.1	— 0.5	95	WNW	.....	.....	6	.....	10	.....	.....	0.079	2.0	Light fog	Prof. M. Passau.
Brussels	29.54	750.3	29.74	755.5	36.5	2.5	87	SW	.....	.....	6	.....	10	.....	SW	0.069	1.75	.....	Royal Observatory.
Furnes	29.67	753.6	29.89	754.2	44.8	7.1	85	WSW	.....	.....	6	.....	10	.....	.....	0.075	1.9	.....	M. E. de Cae.
Maeseyck	29.60	751.8	29.73	755.1	36.5	2.5	87	W	.....	.....	6	.....	10	.....	.....	0.197	5.0	.....	M. Pierrot.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

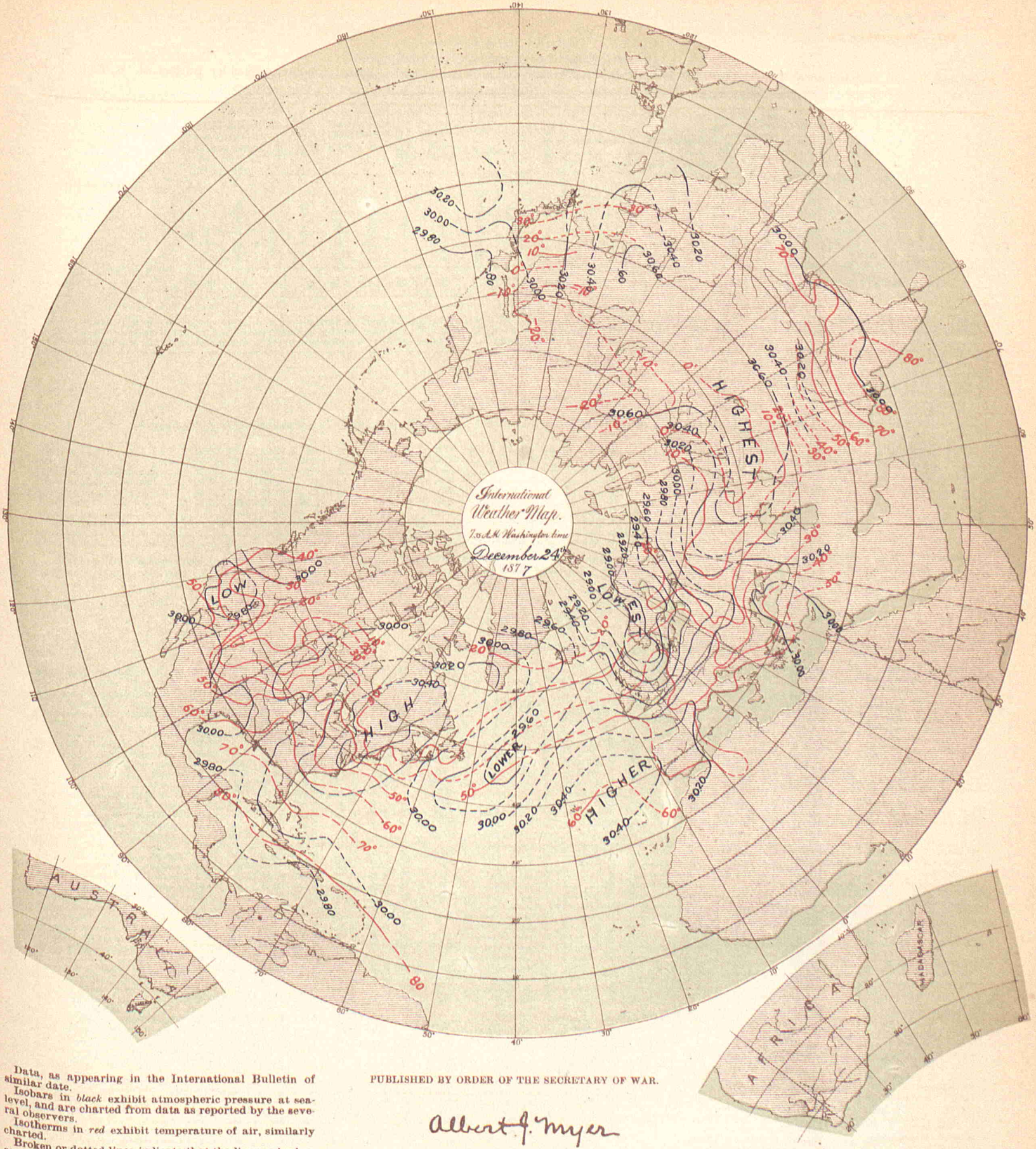
Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Aberdeen	29.30	744.2	29.40	746.7	34.0	1.1		NW	36	16.1			3			0.090	2.29	Squally	W. Boswell.
Ardrossan	29.56	750.8	29.58	751.3	39	3.9		WNW			7		4					Squally	William McNeil.
Armagh, Observatory			29.76	755.9	39.3	4.1		WNW	13	5.8			3			Blank	Blank	D. clouds	S. Call, for Dr. Robinso n
Bidston, (Liverpool Obs.)			29.62	752.3	43.1	6.2		WNW	51	22.8			7					D. clouds	John Hartnup.
Birr Castle, (Parsonstown)			29.91	759.7	42.0	5.6		W			1		4					D. clouds	J. Dreyer.
Bradford, Yorkshire	29.06	738.1	29.45	748.0	40.1	4.5		N			5		5			0.25	6.3	D. clouds	J. McLandsborough.
Bridgetown, (Barbados)	29.89	759.2	29.92	760.0	80	26.7		NE			1		2					D. clouds	Pvt. G. W. Roberts, A.
Cambridge, Observatory			29.55	750.6	44.0	6.7		W			3		7					D. clouds	H. Todd. [H. C.
Cardington			29.61	752.1	44.4	6.9		NW			6		5					D. clouds	John McLaren.
Chatham, School M. E	29.64	752.8	29.78	756.4	42.2	5.7		SW			1		5					Blue sky	Lt. W. G. Morris, R. E.
Dartmoor	28 57	725.7	30.09	764.3	39.6	4.2		W			3		3					Hail-showers	Alexander Watt,
Davos Platz (Switzerland)																			Francis Redford, M. A.
Donaghadee	29.69	754.1	29.72	754.9	39	3.9		NW			6		10					Overcast	J. Mac Gowan.
Dover	29.64	752.8	29.67	753.6	45	7.2		W			5		5					⅛ clouded	J. Costello.
Eccles, (near Manchester)			29.60	751.8	41.7	5.4		NW	14.2	6.3			5					Squally	Thomas Mackereth.
Falmouth, Observatory	29.68	753.9	29.92	760.0	47.9	8.8		WNW			5		10					Raining	The Staff.
Fort Napier, (Natal)	27.46	697.5	29.66	753.4	78.2	25.7		E			2		10					Overcast	Pvt. G. Salmon, A. H. C
Free Town, (Sierra Leone)			29.88	758.9	87	30.6		NW			0		3					D. clouds	
Galway, Queen's College																			Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	30.11	764.8	30.17	766.3	56.0	13.3		E			4		3					D. clouds	Corpl. C. Aitken, A. H. C.
Glasgow, Observatory	29.34	745.2	29.54	750.3	37.0	2.8		NNW										Squally	D. G. Maclean.
Great Yarmouth	29.49	749.0	29.50	749.3	40	4.4		WNW			5		7					Rain & hail	G. T. Watson.
Greenwich, Royal Obs'y	29.47	748.5	29.64	752.8	45.3	7.4		W			5		10					Overcast	The Staff, for G. B. Airy.
Guernsey	29.68	753.9	29.90	759.4	48	8.9		WSW			5		10					Squally	Dr. S. E. Hoskins, F.R.S.
Helston			29.95	760.7	49	9.4		NW			2		10			0.02	0.5	Overcast	M. P. Moyle.
Holyhead	29.70	754.4	29.76	755.9	43	6.1		NNW			8		1					Blue sky	John Tilston.
Jersey	29.66	753.4	29.96	761.0	48.0	8.9		W			6		10					Threatening	J. Fisher.
Kew, Observatory			29.65	753.1	46.4	8.0		W	23	10.3			10kd					Raining	The Staff.
Kingstown	29.79	756.7	29.82	757.4	42	5.6		NW			6		1					Blue sky	George Mitchell.
Leicester, Museum			29.56	750.8	41.5	5.3		W			7		7					Overcast	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.99	761.7	30.07	763.8	55.4	13.0		NW			3		6					D. clouds	Sgt. Fred. Travis, A. H.
Nairn	29.42	747.3	29.52	749.8	30	— 1.1		NNW			4		2					¼ clouded	W. B. Penny. [C.
Nassau, (Bahamas)			30.10	764.5	69.5	20.8		SE			4		10					Overcast	C. S. Duncombe.
Nottingham, Observatory	29.32	744.7	29.51	749.5	42.1	5.6		WNW			7		5k;d		WNW	0.010	0.25	D. clouds	E. J. Lowe, F. R. S
Oscott, St. Mary's College	29.10	739.1	29.63	752.6	40.2	4.6		NW			6		1					D. clouds	Rev. Stephen Whitty
Oxford, Radcliffe Obs'y			29.65	753.1	45	7.2		W			5		8					Overcast	Mr. Lucas.
Plymouth	29.80	756.9	29.87	758.7	48.0	8.9		SW			4		4					Overcast	John Merrifield.
Roche's Point	29.90	759.4	29.95	760.7	46	7.8		NW			6		8					Squally	W. Kennedy.
Saint Ann's Head			29.85	758.2	46	7.8		WNW			5		5					D. clouds	John C. Walker.
Sandwick Manse, (Orkneys)			29.38	746.2	30.9	— 0.6		NW	45	20.1			8					Snowing	Rev. C. Clouston, LL. D
Scutari, Cemetery, (Turkey)			30.04	763.0	39.0	3.9		NE			1		7					D. clouds	Sergt. W. H. Lyne.
Sheffield	29.32	744.7	29.61	752.1	36.7	2.6		NW			6		4			0.02	0.5	D. clouds	W. F. Cooper.
Silloth Rectory	29.54	750.3	29.57	751.1	38.8	3.8	70	N			6		2			0.010	0.25	D. clouds	Rev. F. Redford, M. A.
Stonyhurst, Observatory					39.0	3.9		NW			5		7					Squally	Rev. S. J. Perry.
Stornoway, Lews C., (Hebr.)			29.60	751.8	32	0.0		NW			6		8					D. clouds	John Smith.
Stratfield Turgiss	29.54	750.3	29.76	755.9	45.1	7.3		NW			2		5					D. clouds	Rev. C. H. Griffith, F. M. S
Thurso			29.41	747.0	32	0.0		NNW			7		10					Snowing	John Trotter.
Truro, Royal Institution			29.90	759.4	49	9.4		NW			4		10					Raining	W. Newcombe.
Valencia, Observatory			30.00	762.0	47.7	8.7		NW	21	9.4			8					D. clouds	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)																			Henry Mercer.
Cape Good Hope, Obs'y	29.99	761.7	30.03	762.7	75.2	24.0	41	W	5	2.2		9	9						The Staff, for E. J. Stone.
Hobart Town, (Tasmania)			29.66	753.4	54.0	12.2	80	NW			3		10kn			0.02	0.5	Covered	Francis Abbott, F.R.A.S.
Leith, Restalrig Park																			Andrew Gibb.
Mauritius, Observatory	29.82	757.4	30.00	762.1	80.6	27.0	82	ESE	24.0	10.7		8	5	W	E	0.17	4.3	Squally	C. Meldrum.
Melbourne, Observatory	29.90	759.4	29.99	761.7	53.0	11.7	86	SSW	10	4.5			10			0.18	4.6	Showery	R. L. J. Ellery.
Monach L't-house, (Hebrides)																			J. Youngclause.
North Unst, (Shetland Is.)																			Robert Burnet.

Note.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m.

Marine Series. Vessels.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea or swell. Height scale 0—9	Sea or swell. Direction from—	Weather.	Observer
S. S. Algeria, N. 45° 14′, W. 43° 55′			29.50	749.3	59	15.0		S			4		10		SW	30*	SE;E;SW	Raining	Capt. W. Watson
S. S. Batavia																			Capt. J. E. Moul and.
Ship Camperdown																			Capt. A. T. Miller.
Brig Catherine																			Capt. Adam Smith.
Barque Celeste																			Capt. D. F. McKechnie
S. S. Hibernia																			Capt. W. R. Cato
Barque Maroon																			Capt. A. T. Brown.
Ship Mikado																			Capt. C. C. Prehn.
Royal Alice, N. 43° 40′, W. 48° 0′			29.68	753.9	43	6.1		NW			6		10			8	E	Overcast	Capt. E. M. Hughes.
S. S. Seine																			Capt. H. Manning.
Barque Sorata																			Capt. Jas. J. Price.
Schooner Traveller																			Capt. Alex Simpson.

Note.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in fe weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. *Feet.



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	BAROMETER. Corrected for instrum'tal error and temperature. Inches.	BAROMETER. Corrected for instrum'tal error and temperature. Millimeters.	BAROMETER. Reduced to sea-level. Inches.	BAROMETER. Reduced to sea-level. Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Upper. From—	CLOUDS. Direction. Lower. From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	WEATHER.	OBSERVER.
San José	26.22	666.0			64.0	17.8	82	NE			2		0			0	0		Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.39	746.6	29.44	747.8	34.9	1.6	91	SW			6		10						
Fanöe	29.13	739.8	29.15	740.3	40.8	4.9	97	WSW			6		10						Raining
Godthaab, (Greenland)	30.17	766.4	30.22	767.5	26.2	— 3.2		WSW			4		10						
Stykkisholm, (Iceland)	29.76	756.0	29.81	757.1	17.1	— 8.3	94	SW			4		8						
Thorshavn, (Faröe)	29.62	752.3	29.65	753.2	22.8	— 5.1	64	NW			3		7						Snowing
Vestervig	28.76	730.5	28.93	734.8	39.2	4.0	93	SW			7		10						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the cooperation of the Director of the Paris Observatory, and the respective observers.

Alençon, Normal School	29.66	750.8	30.11	764.8	41.0	5	83	SW			1		5		SW	0.08	2.	Cloudy	Collignon, Director.
Amiens, Normal School	29.80	756.8	29.91	759.6	42.4	5.8	85	WSW			3		10			0	0	Covered	Bonvarne, Director.
Avignon, Normal School	30.06	763.5	30.14	765.5	47.5	8.6	63	N			2		0			0	0	Very clear	Mr. Giraud, Director
Bar-sur-Seine	29.46	748.2	30.05	763.2	36.0	2.2	89	SSW			1		10			0.236	6.0	Covered	C. Saillard.
Beaumette Obs'y (Angers)	29.89	759.1	30.07	763.6	42.4	5.8	84	SW	2.7	1.2					WSW	0	0		Albert Cheux.
Beauvais	29.63	752.6	29.92	760.0	38.1	3.4	82	SW			3		8		W	0	0	Very cloudy	Normal School.
Besançon	29.21	742.0	30.15	765.7	35.6	2	89	SSW			2		10			0	0	Covered	Normal School.
Bourg-en-Bresse	29.30	744.1	30.21	767.4	36.9	2.7	97	SE			2		5kn		SE	0	0	Cloudy	Normal School.
Bourges, Normal School	29.60	751.9	30.17	766.4	39.2	4	90	S			4		5		S	0	0	Cloudy	A. Wagner, Director.
Brest, Naval Observatory	29.77	756.2	29.99	761.7	46.6	8.1	83	W			3		10		W	0.010	0.25	Misty	The Staff.
Carcassonne, Normal School	29.76	755.9	30.19	766.7	45.0	7.2	83	W			4		2		NW	0	0	Slightly cl'dy	Vateau, Director.
Caen	29.86	758.4	29.93	760.3	44.2	6.8	83	SSW			2		2		SW	0.073	1.9	Slightly cl'dy	Normal School.
Chartres, Normal School	29.41	747.1	30.00	762.1	35.2	1.8		SW			2		10			0.08	2.	Covered	Lequin, Director.
Châlons-sur-Marne, N. Sch'l	29.65	753.1	29.98	761.6	34.3	1.3	98	SW			4		10n			0.008	0.2	Covered	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.74	730.1	30.13	765.3	45.9	7.7	75	NW			1		5		W	0.016	0.4	Cloudy	Alluard, Director.
Commercy, Normal School	29.20	741.7	30.12	765.0	33.8	1	85	WSW			4		10		WSW	0.150	3.8	Covered	Dr. Goulet, Director.
Commune de Grénasque*	28.99	736.3	30.13	765.3	46.8	8.2	59	NW			1		0			0	0	Clear	[illegible] Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	29.93	760.2	30.15	765.8	44.2	6.8	94	ESE			1		10			0.118	3.0	Covered	Mouillot, Director.
Le Mans, Normal School	29.73	755.1	30.05	763.3	38.8	3.8	93	W			4		8		W	0.059	1.5	Very cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.18	741.2	30.13	765.2	37.9	3 3	93	S			6		5		NE	0.244	6.20	Cloudy	Voudez, Director.
Lorient, Naval Observatory	29.99	761.8	30.09	764.3	48.2	9.0	71	W			3		10			0	0	Covered	T. Carré, Director.
Mâcon, Normal School	29.41	746.9	30.09	764.2	35.6	2	93	Calm			0		10			0	0	Covered	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	28.97	735.8	30.07	763.7	32.7	0.4	92	SW			2		10		NE	0	0	Covered	Normal School.
Nismes, Normal School	29.91	759.6	30.11	764.9	52.2	11.2	82	N			1		0			0	0	Clear	Boyer, Director.
Orleans, Normal School	29.69	754.1	30.08	764.1	37.4	3	93	SW			2		10			0.12	3.	Covered	Bernard, Director.
Paris, Observatory	29.72	754.9	29.97	761.2	37.0	2.8	83	SW			1		10			0.080	2.03	Covered	National Observatory.
Privas	29.08	738.5	30.18	766.6	40.1	4.5	71	N			1		10		N	0	0	Covered	Normal School
Rochefort, Naval Obs'y	30.12	765.1	30.15	765.9	43.2	6.2	97	SSE			1				NW	0.16	4.	Misty	Lt. Decante, Director.
Rouen, Normal School	29.80	757.0	29.89	759.2	42.8	6.0	74	WSW			2		10		W	0.110	2.8	Covered	F. Lucard, Director.
Tarbes, Normal School	29.10	739.1	30.20	767.1	49.1	9.5	62	SW			2		0			0	0	Clear	T. Hugues, Director.
Villefranche	29.47	748.6	30.22	767.5	37.4	3	95	N			4		5		S	0	0	Cloudy	Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.81	757.1	29.84	757.8	77.2	25.1										0.87	22.		L'Abbé Marchési.
Marseilles, Observatory			30.11	764.9	49.1	9.5	61	W			1		0			0	0		The Staff.
Mont-Louis	24.91	632.7	30.23	767.7	39.4	4.1	32	W	1.9	0.83			0			0	0		Mr. Falguère.
Nice			30.07	763.7	50.7	10.4	63	N			3		0			0	0	Clear	Dr. A. Niepce.
Paris, Montsouris Obs'y	29.67	753.7	29.95	760.7	36.7	2.6	84	SW			4		10		SW	Inap.	Inap.	Sprinkling	Marié Davy, Director.
Perpignan			30.17	766.2	55.6	13.1	56	NW	22.4	10.00			0			0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.	21.25	539.7			25.7	— 3.5		N			1		0					Clear	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.53	572.3			35.4	1.9		N			1		0			0	0	Clear	Gen'l de Nansouty.
Saint Maur, (near Paris)	29.81	757.1	29.97	761.3	36.0	2.2	89	SSW			2		10		W	0.031	0.8		E. Renou.
Toulouse, Observatory	29.53	750.0	30.26	768.5	42.8	6.0	73	SE			1		7			0.193	4.90		The Staff.
Tours	29.87	758.7	30.07	763.7	39.4	4.1	93	SW			1		10			0.051	1.3	Foggy	C. Marquet.
Versailles, (near Paris)			29.95	760.7	37.0	2.8	86	SW			2		10			0.023	0.57	Covered	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.46	773.6	30.48	774.2	31.8	— 0.1	87	NW	9.2	4.1			10kn			0.331	8.4	Covered	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published. At Mirecourt and Rochefort the cloud directions are apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Grénasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum't'al error and temperature. Inches.	Barometer. Corrected for instrum't'al error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg								S			2		10			0.080	2.13		Prof. Dr. Hoh.
Berlin	29.55	750.6	29.73	755.1	36.3	2.4	82	WSW			2		10			0.063	1.60		Prof. Arndt.
Breslau	29.35	745.6	29.88	759.0	34.9	1.6	72	SW			3		10			0.031	0.8		Royal University Obs'y.
Carlsruhe	29.52	749.9	29.97	761.2	32.9	0.5	86	SW			4		10	SW		0.167	4.25	Snowing	Albert Senz.
Cassel	29.06	738.2	29.67	753.5	29.7	— 1.3	84	SW			6		10			0.04	1.		Dr. H. Möhl.
Crefeld	29.52	749.8	29.68	753.9	37.4	3.0	79	SW			6		10			0.197	5.0		Director Lose.
Emden	29.41	747.1	29.45	748.0	37.4	3.0	96	SW			1		10			0.114	2.9		Prof. Prestel.
Frankfort on the Main	29.58	751.2	29.96	760.9	34.5	1.4		SW			5		9	WNW		0.024	0.6		Physical Society.
Friedrichshafen	29.05?	737.9?	30.07	763.7	36.3	2.4	93	W			6		10			0.047	1.2	Raining	M. Wilhelm.
Hamburg	29.46	748.3	29.53	750.1	36.7	2.6	82	SW			4		10			0.017	0.43		Captain F. Hegemann.
Kiel	29.38	746.3	29.40	746.7	34.9	1.6	90	SW								0.146	3.69	Snowing	Prof. G. Karsten.
Königsberg, (Prussia)	29.58	751.3	29.66	753.4	30.4	— 0.9	86	SW			4		4			0	0		Prof. E. Luther.
Köslin			29.63	752.7	29.7	— 1.3		SW			4		10	W		0.043	1.1		H. Müller.
Leipsic, Observatory	29.42	747.3	29.85	758.3	35.2	1.8	44	SW			4		10n					Snow & graupel	Prof. Bruhns.
Memel, Naval School	29.55	750.5	29.60	751.7	34.5	1.4	82	W			5		1			0	0		Reinbrech von Skalweit.
Neufahrwasser	29.66	753.4	29.68	753.8	32.2	0.1	79	SW			2					0.002	0.04	Covered	A. Lothes.
Posen	29.54	750.3	29.84	757.9	34.7	1.5	86	W			5		10			0.150	3.8		Dr. Magener.
Strassburg Obs., (in Alsace	29.46	748.3	30.04	763.0	33.8	1.0	79	SW			2		10			0.031	0.8		Dr. Schur.
Stuttgart	29.01	736.9	30.11	764.8	34.7	1.5	71	SW			1		10			0.071	1.80	Foggy	Prof. Schoder.
Treves, (Trier)	29.31	744.4	29.83	757.6	33.4	0.8	86	W			6		10			0.075	1.9	Covered	Prof. Flesch.
Weissenburg, (Bavaria)	28.44	722.3	30.01	762.3	30.9	— 0.6	96	S	4	2			10	W					Dr. Von Bebber.
Wustrow, Naval School	29.56	750.8	29.56	751.6	33.8	1.0	95	S			5		10			0	0	Covered	E. F. Schütz.
German Naval Series.																			

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet: Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4. Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines, Königsberg, Posen and Wustrow in cubic zolls. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.68	753.9	30.08	764.1	50.0	10.0		NW			0.5							Clear	Dr. J. F. J. Schmidt.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and wind-force; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	30.03	762.7	30.08	764.0	78.5	23.1	74	SSW	11.0?	4.9?			1			0	0	D. clouds	
Deesa	29.58	751.4	30.06	763.6	80.9	27.2	46	Calm					1	W		0	0	D. clouds	
Bombay	29.89	759.1	29.93	760.1	82.3	27.9	79	NNW	19.0	8.5			7	NNW		0	0	D. clouds	
Poona	27.97	710.4	29.97	761.1	82.1	27.8	47	SE					10	SW		0	0	Dust-whirl	
Lahore	29.33	744.9	30.10	764.6	63.2	17.3	89	W	1.7	0.8			8			0	0	Cloudy	
Belgaum	27.41	696.3	29.96	760.9	76.7	24.8	44	E	10.0	8.5			4	W		0	0	D. clouds	
Bangalore																			
Roorkee	29.15	740.4	30.08	764.1	66.4	19.1	81	Calm	0.4	0.2			1			0	0		
Agra	29.48	748.7	30.06	763.5	70.7	21.5	66	E								0	0		
Trichinopoly																			
Nagpur	28.99	726.0	30.04	763.0	78.9	26.1	52	Calm	2.0	0.9			2			0	0	Blue sky	
Madras																			
Lucknow	29.68	753.9	30.07	763.7	66.4	19.1	81	Calm	0.8	0.4			10			0	0	Overcast	
Allahabad	29.74	755.3	30.05	763.4	70.7	21.5	69	Calm	0.2	0.1			2			0	0	D. clouds	
Patna	29.91	759.8	30.10	764.5	70.3	21.3	58	W	1.5	0.7			5	W	W	0	0	D. clouds	
Hazaribagh	28.01	711.5	30.08	764.1	63.8	17.7	44	NW	5.3	2.4			0			0	0	Blue sky	
Cuttack	29.97	761.2	30.05	763.3	73.0	22.8	63	Calm	0.5	0.2			0			0	0	Blue sky	
Calcutta (Alipore)	30.03	762.8	30.05	763.4	66.8	19.3	79	NW	3.0	1.3			0			0	0	Blue sky	
Goalpara	29.62	752.2	30.02	762.4	69.8	21.0	61	Calm	0.3	0.1			0			0	0	Blue sky	
Chittagong	29.95	760.6	30.04	763.0	72.3	22.4	68	E	2.5	1.1			0			0	0	Blue sky	
Sibsagar	29.72	754.9	30.07	763.8	64.9	18.3	89	Calm	0.8	0.4			0			0	0	Blue sky	
Rangoon																			
Jubbulpore	28.66	728.1	30.05	763.2	76.5	24.7	68	E	1.2	0.5			0			0	0	Blue sky	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,950 ft., or 911.0 m; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,361 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	22.08	560.8	30.10	764.5	21.9	— 5.6	47	NNW	.....	.....	2	.....	5	NW	.....	0	0	.....	Ab. Dom. Mongini.
Stelvio	22.03	559.6	30.11	764.9	17.2	— 8.2	.....	SSW	.....	.....	1	.....	7	N	.....	0	0	.....	Signora Ernesta Manfredi.
Udine	29.65	753.2	30.08	764.1	41.7	5.4	47	Calm	0	0	.....	.....	3	.....	.....	0	0	.....	Prof. Giovanni Clodig.
Padua	29.97	761.1	30.08	764.0	38.5	3.6	70	NW	3.1	1.4	.....	.....	4	.....	.....	0	0	.....	Prof. Dott. Lorenzoni.
Vicenza	29.89	759.2	30.09	764.3	40.3	4.6	62	E	0	0	.....	.....	2	.....	.....	0	0	.....	Conte Alm. Da Schio.
Verona	29.84	757.9	30.07	763.8	43.3	6.3	91	SW	.....	.....	1	.....	0	.....	.....	0	0	.....	Dott. B. Bertoncelli.
Bergamo	28.71	729.2	30.08	764.1	38.8	3.8	58	SE	.....	.....	1	.....	3	.....	.....	0	0	.....	Prof. Trionfini Carlo.
Domodossola	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Giuseppe Calza.
Milan	29.55	750.6	30.10	764.5	37.8	3.2	.....	WNW	.....	.....	2	.....	5	NNW	.....	0	0	.....	Ab. Gio. Capelli.
Pavia	29.72	754.9	30.08	764.1	39.0	3.9	83	E	.....	.....	1	.....	2	.....	.....	0	0	.....	Prof. Gio. Cantoni
Moncalieri	29.14	740.2	30.09	764.2	37.2	2.9	81	NNW	1.8	0.8	.....	.....	3	.....	.....	0	0	.....	Prof. P. F. Denza.
Mondovi	28.09	713.4	30.07	763.8	46.0	7.8	40	ESE	.....	.....	2	.....	1	NW	.....	0	0	.....	Prof. D. C. Bruno.
Porto Maurizio	29.90	759.5	30.13	765.3	51.6	10.9	63	SW	.....	.....	2	.....	1	.....	.....	0	0	.....	Prof. L. Vassallo.
Genoa	29.91	759.7	30.08	764.1	50.0	10.0	62	Calm	0	0	.....	.....	10	S	.....	0	0	.....	Prof. G. M. Garibaldi
Piacenza	29.83	757.7	30.10	764.5	37.6	3.1	74	E	4.9	2.2	.....	.....	0	.....	.....	0	0	.....	Dott. G Manzi.
Parma	29.77	756.2	30.10	764.6	40.5	4.7	71	SE	.....	.....	2	.....	0	.....	.....	0	0	.....	Prof. P. Pigorini.
Florence	29.87	758.7	30.14	765.5	44.6	7.0	71	SW	.....	.....	2	.....	9	.....	.....	0	0	.....	Cav. F Meucci.
Leghorn	30.02	762.5	30.11	764.7	45.3	7.4	74	ENE	7.4	3.3	.....	.....	4	W	.....	0	0	.....	Prof. P. Monte.
Siena	28.87	733.3	30.11	764.9	43.3	6.3	76	NNE	2.5	1.1	.....	.....	5	W	.....	0	0	.....	Prof. L. Toscani.
Urbino	28.54	724.9	30.16	765.9	39.7	4.3	70	SSW	.....	.....	2	.....	1	.....	.....	0.079	2.0	.....	Prof. P. Serpieri.
Pesaro	30.06	763.4	30.11	764.7	42.4	5.8	71	NE	6.3	2.8	.....	.....	0	.....	.....	0	0	.....	Prof. Luigi Guidi.
Ancona	29.98	761.4	30.09	764 2	43.2	6.2	74	Calm	0	0	.....	.....	0	.....	.....	0	0	.....	Prof. F. DeBosis.
Grosseto	30.02	762.6	30.14	765.5	51.1	10.6	58	SE	.....	.....	2	.....	3	SE	.....	0	0	.....	Avv. P. Ponticelli.
Rome	29.95	760.6	30.13	765.2	47.3	8.5	70	N	0	0	.....	.....	9	.....	.....	0	0	.....	Prof. P. A. Secchi.
Naples, O. U	29.90	761.0	30.17	766.2	50.4	10.2	55	NE	.....	.....	1	.....	4	NW	.....	0	0	.....	Prof. L. Palmieri.
Lecce	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. C. De Giorgi.
Cosenza	29.26	743.2	30.17	766.4	48.9	9.4	71	SE	1.3	0.6	.....	.....	6	.....	.....	0	0	.....	Prof. F. D. Conti.
Cagliari	29.91	759.6	30.10	764.6	53.2	11.8	73	NW	.....	.....	2	.....	10	NW	.....	0	0	.....	Prof. A. Pacinotti.
Riposto, (Sicily)	30.06	763.4	30.10	764.6	54.9	12.7	77	SSW	.....	.....	2	.....	9	S	.....	0	0	.....	Prof. F. Caflero.
Palermo	29.86	758.4	30.12	765.0	54.5	12.5	53	WSW	4.3	1 9	.....	.....	4	.....	.....	0.008	0.2	.....	Prof. G. Cacciatore.
Caltanissetta	28.15	714.9	30.13	765.4	46.6	8.1	67	W	.....	.....	2	.....	0	.....	.....	0	0	.....	Prof. A. Pagani.
Syracuse	30.02	762.5	30.10	764.4	51.8	11.0	71	WSW	.....	.....	2	.....	3	NW	.....	0	0	.....	Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.61	752.2	30.17	766.3	48.0	8.9	59	NNW	0.7	0.3	.....	.....	5	.....	.....	0.094	2.4	.....	Prof. F. Brioschi.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,543.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Siena, 348.5 m., or 1,143.3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Tokei (Yeddo)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	The Observatory.
Tokei (Yeddo) University	30.04	762.9	30.14	765.6	35	1.7	75	NW	5	2 2	.....	.....	4ks	.....	.....	0	0	Fair	Prof P. V. Veeder.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Aguascallentes	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	I. N. Marin, M. D.
Córdoba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	C. Peña, M. D.
Cuernavaca	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	L. Castillo, A. E.
Guadalajara	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. L. Perez.
Guanajuato	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. V. Fernandez.
Leon	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. M. Leal.
Mexico	23.06	585.8	30.17	766.2	42.1	5.6	63	Calm	0	0	.....	0	0	.....	.....	0	0	Very fine	Central Observatory.
Orizaba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	N. N.
Orizaba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	I. Orozco, M. D.
Pabellon, (Aguascalts)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. V. de Leon, M. E.
Puebla	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. B. Gonzalez.
Toluca	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. C. Velazquez.
Tlacotalpam	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. F. R. Bayly.
San Luis Potosi	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	G. Barroeta, M. D.
Vera-Cruz	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. J. Rossell.
Zacatecas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. A. Bonilla, M. E.
Puebla, (Catholic Institute)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	P. Spina. [M. M. D. D.
Morelia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Tena, F. L. Páramo

Note.—The elevation of Aguascallentes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,290 m., or 7,512.9 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosi, 1,803 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	29.65	753.2	29.65	753.2	40.5	4.7	.....	SW	.....	.....	5	.....	.....	.....	.....	0.047	1.2	.....	
Groningen	29.40	746.7	29.45	748.1	37.2	2.9	.....	SSW	.....	.....	5	.....	.....	.....	.....	0.098	2.5	.....	
Helder	29.44	747.7	29.44	747.7	43.9	6.6	.....	SW	.....	.....	6	.....	.....	.....	.....	0.118	3.0	.....	
Hellevoetsluis	.....	.....	29.63	752.6	38.7	3.7	95	S	.....	.....	5	.....	.....	.....	.....	.....	.....	.....	
Utrecht	29.54	750.4	29.59	751.6	37.9	3.3	92	SSW	.....	.....	6	.....	10	.....	.....	0.256	6.5	Dull	H. v d Brink.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	28.87	733.2	28.92	734.6	30.2	— 1.0	92	NW	35.8	16.0	.....	.....	8	.....	.....	.....	.....	Showing.....	
Brödo	29.01	736.8	29.05	737.8	29.0	— 5.0	71	NE	7	3	.....	.....	2	.....	.....	1.504	38.2	.....	
Christiania	28.98	736.2	29.13	740.0	28.6	— 1.9	66	NNE	4	2	.....	.....	10	.....	.....	0	0	.....	
Tromsö	29.00	736.5	29.04	737.6	23.7	— 4.6	95	SW	4	2	.....	.....	0	.....	.....	0	0	.....	
.....																			

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angrá, (Azores)	30.35	770.9	30.34	775.8	57.9	14.4	68	SE	8.7	3.9	.....	.....	6	.....	.....	0	0	.....	Dr. J. A. Sampaio.
Campo Major	29.22	742.3	30.28	769.1	47.3	8.5	52	ENE	3.1	1.4	.....	.....	1	.....	.....	0	0	.....	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.17	766.4	30.24	768.2	64.2	17.9	43	ENE	4.3	1.9	.....	.....	0	.....	.....	0.031	0.8	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.91	759.8	30.29	769.3	43.5	6.4	72	NNE	11.2	5.0	.....	.....	1	.....	.....	0	0	.....	The Staff.
Ponta Delgada, (Azores)	30.43	773.0	30.50	774.8	60.1	15.6	56	ENE	4.9	2.2	.....	.....	10	.....	.....	0	0	.....	
.....																			
.....																			

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

Naval Series. Vessels.	Sea or swell. Height scale 0–9	Sea or swell. Direction from—	
S. Bartholomew Dias	.....	.....	R. A. T. Pinha, Com'd't.
S. S. India	.....	.....	A. D. Pedroso, Com'd't.
S. S. Mindello	.....	.....	J. F. R. R. Bastos, Com'd't.
S. S. Sado	.....	.....	A. N. P. Sampaio, Com'd't.
S. S. S4 da Bandeira	.....	.....	F. Texeira da Silva, Com'd't.
S. S. Tejo	.....	.....	F. J. Ferreina,dos Amas,Com'd't
.....	.....	.....	.....

NOTE.—The originals, except for S. S. Tejo, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.37	746.0	29.81	757.2	30.4	— 0.9	96	WSW	16	7	.....	.....	10ks	.....	.....	.....	.....	.....	Astronomical Obs.
Wilna	29.27	743.5	29.72	754.8	20.5	— 6.4	91	S	2	1	.....	.....	10	.....	.....	.....	.....	Hea'y clouds	Astronomical Obs.
Dorpat	29.35	745.6	29.61	752.1	20.8	— 6.2	92	S	7	3	.....	.....	10n	.....	.....	.....	.....	.....	Prof. Dr. Welbrauch
St. Petersburg	29.64	752.8	29.65	753.2	13.3	—10.4	86	S	18	8	.....	.....	10n	.....	.....	.....	.....	.....	Central Physical Obs.
Kuopio	28.95	735.4	29.29	743.9	21.9	— 5.6	100	SW	34	15	.....	.....	10 [h	.....	.....	Blank	Blank	.....	Ch. Forsten.
Kieff	29.22	742.1	29.90	759.5	15.4	— 9.2	88	SSW	7	3	.....	.....	10c;ks;	.....	.....	.....	.....	.....	Physical Cabinet
Nikolaiev	29.95	760.6	30.02	762.4	18.1	— 7.7	83	W	0	0	.....	.....	10n	.....	.....	.....	.....	.....	Kurdakof.
Kertch	30.00	761.9	30.02	762.4	32.7	0.4	92	ENE	7	3	.....	.....	9	.....	.....	.....	.....	.....	Lagorio.
Moscow	29.63	752.7	30.24	768.2	4.3	—15.4	72	SSE	11	5	.....	.....	10s	.....	.....	.....	.....	.....	Meteorological Obs.
Lugan	29.85	758.1	30.07	763.7	25.7	— 3.5	60	ESE	22	10	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Archangel	29.72	754.9	29.74	755 4	15.8	— 9 0	94	S	29	13	.....	.....	0	.....	.....	.....	.....	.....	Ogorodnikof.
Tiflis	28.80	731.5	30.32	770.2	25.0	— 3.9	87	Calm	0	0	.....	.....	5ks	.....	.....	.....	.....	.....	Physical Observatory
Astrakhan	30.51	774.9	30.43	772.8	19.4	— 7.0	54	E	11	5	.....	.....	0	.....	.....	.....	.....	.....	Sebastianof.
Kasan	30.27	768.9	30.57	776.5	10.2	—12.1	74	Calm	0	0	.....	.....	3	.....	.....	.....	.....	.....	Physical Cabinet.
Orenburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Tschernischef.
Ekaterinburg	29.26	743.1	30.29	769.4	11.7	—11.3	78	NW	9	4	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Nukuss	30.25	768.4	30.52	775.1	7.3	—13.7	71	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Kasaly	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Bobrof.
Tashkend	28.86	733.1	30.75	781.0	15.4	— 9.2	91	NW	4	2	.....	.....	10n	.....	.....	.....	.....	.....	Michelson.
Barnaul	29.97	761.2	30.57	776.5	— 8.1	—22.3	84	SW	0	0	.....	.....	8	.....	.....	.....	.....	.....	Meteorological Obs.
Yeniseisk	30.41	772.3	30.78	781.9	—15.3	—26.3	87	Calm	0	0	.....	.....	10	.....	.....	.....	.....	Light clouds	Marks.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Usolzef.
Oorga	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Mossin.
Krotkowo*	30.06	763.4	30.58	776.6	7.9	—13.4	60	NNW	2	1	.....	.....	1s	.....	.....	.....	.....	.....	Cand. Fatjanow.
Peking, (China)	30.52	775.2	30.66	778.8	18.0	— 7.8	38	NW	27	12	.....	.....	0	.....	.....	.....	.....	.....	Physical Observatory
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Vladivostock	30.12	765.1	30.16	766.1	12.4	—10.9	83	NW	4	2	.....	.....	0	.....	.....	.....	.....	.....	
Nikolaievsk, on the Amoor	.....	.....	.....	.....	—26.0	—32.2	.....	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall; for Krotkowo, the barometer reduced to freezing but not to sea-level. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft. * N. 53° 47′, E. 48° 34′.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Rave, Director.
Bilbao, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Manuel de Naveran
Burgos, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Domingo Martin y Perez.
Madrid, Royal Observatory	27.96	710.3	30.29	769.4	40.8	4.9	66	NW	0.8	0.34	.....	0	0	.....	.....	0	0	Clear	The Staff.
Murcia, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Olayo Diaz, Director.
Santiago, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.98	761.4	30.04	763.0	71.7	22.1	87	Calm	0	0	.....	0	7k;ks	.....	.....	0	0	Fair	Benito Vines, S. J.
San Fernando, Naval Obs'y	30.13	765.2	30.23	767.8	53.6	12.0	66	N	9.4	4.2	.....	2	3	NW	N	0	0	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de PortoRico, W. I.	.....	.....	29.97	761.2	75.9	24.4	67	NE	9.5	4.25	.....	4c	2k	NE	NE	0	0	Clear	Leonardo de Tejeda, Chief of Engineers.

NOTE.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. m. instead of 8:19 a. m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,15

SWEDISH SERIES.

Furnished by the cöoperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Low'r 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.17	741.0	29.21	742.0	25.5	— 3.6	.....	SE	.....	.....	2	.....	10	.....	.....	0	0	.....	
Umea	29.06	738.1	29.11	739.4	20.8	— 6.2	95	NE	.....	.....	2	.....	10	.....	.....	0	0	.....	
Hernosand	29.05	737.9	29.10	739.2	18.5	— 7.5	92	W	.....	.....	2	.....	5	.....	.....	0.020	0.5	.....	
Stockholm	29.11	739.4	29.29	743.9	27.0	— 2.8	87	SSW	.....	.....	2	.....	1	.....	.....	0.335	8.5	.....	
Wisby	29.35	745.6	29.41	747.1	33.8	1.0	75	W	.....	.....	6	.....	3	.....	.....	0.705	17.9	.....	
Sub-Series.																			
Upsala	29.19	741.5	29.27	743.4	27.3	— 2.6	81	SSW	8.5	3.8	.....	.....	2	.....	.....	0.039	0.99	.....	Dr. Hildebrandsson.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.69	728.6	30.16	766.1	37.6	3.1	73	SSW	.....	.....	1	.....	2	.....	.....	0.020	0.5	Clear	The Observatory.
Zurich	28.42	721.8	30.13	765.2	33.4	0.8	91	W	.....	.....	1	.....	10	.....	.....	0.020	0.5	Covered	The Observatory.

Note.—For Geneva the corresponding departures from the normal values are: Barometer, +1.0 mm; Thermometer, +1.4 cent.; Relative Humidity, —7 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	30.07	763.8	37.6	3.1	78	NNE	6	2.5	.....	.....	9	.....	N	0	0	.....	The Observatory.
Fao, (Persian Gulf)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salonica	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	B. Stefanides.
Valona	.....	.....	30.07	763.6	52.2	11.2	.....	W	.....	.....	1	.....	2	.....	.....	0	0	Slightly cl'dy	A. Bertrand.
Varna	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Imperial Observatory.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.55	750.6	29.67	753.5	53.6	12.0	89	SW	.....	.....	3	.....	10n	.....	SW	2.68	68.1	Raining	Prof. C. V. A. Van Dyck

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	30.24	768.1	30.31	769.9	24.5	— 4.2	80	N	5.0	2.2	.....	0	.....	.....	.....	.....	.....	.....	Hon. J. Ferguson.
Brockville, Ontario	30.14	765.5	30.47	773.9	23	— 5.0	.....	Calm	0	0	.....	.....	Fog	.....	N	0	0	Foggy	W. R. Bigg.
*Chatham, N. B	30.22	767.6	30.29	769.4	21	— 6.1	83	N	7	3.1	.....	0	2ks	.....	Calm	0	0	Fair	G. A. Blair.
Charlottetown, P. E. Island	30.10	764.5	30.14	765.5	30	— 1.1	93	N	12	5.4	.....	.....	10n	.....	Calm	0.050	1.27	Light snow	H. J. Cundall, C. E.
Cornwall, Ontario	30.25	768.3	30.46	773.7	22.4	— 5.3	100	E	.....	.....	1	.....	Fog	.....	.....	0	0	Foggy	James Smith, M. A.
Dalhousie, N. B	30.26	768.6	30.30	769.6	24.8	— 4.0	83	NW	.....	.....	1	.....	.....	.....	.....	0	0	Clear	H. A. Johnson.
Esquimault, B. C	30.06	763.5	30.10	764.5	41.1	5.1	82	N	.....	.....	.....	10ck	0	.....	.....	0	0	Cloudy	W. H. Bevis.
*Father Point, Quebec	30.40	772.1	30.42	772.7	27	— 2.8	92	W	12	5.4	.....	5k	5s	N	N	0	0	Cloudy	J. McWilliams.
Fredericton, N. B	30.27	768.8	30.33	770.4	21.0	— 6.1	75	W	6.0	2.7	.....	0	0	.....	.....	0	0	Clear	Prof. Harrison.
*Fort Garry, Manitoba	29.15	740.4	30.01	762.2	30	— 1.1	97	S	10	4.5	.....	10k	0	S	.....	0.414	10.51	Cloudy	James Stewart.
Goderich, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	H. J. Strang, M. A.
Granton, Ontario	29.20	741.7	30.36	770.9	34	1.1	90	SE	.....	.....	1	.....	10n	.....	.....	0	0	Foggy	James Grant.
*Halifax, N. S	29.97	761.2	30.12	765.0	28	— 2.2	84	N	17	7.6	.....	0	5ks	.....	N	0	0	Fair	F. Allison, M. A.
Hamilton, Ontario	30.03	762.7	30.42	772.7	36.1	2.3	86	E	.....	.....	1	10cs	.....	.....	.....	0	0	Misty	Geo. Dickson, M. A
Heart's Content, N. F	29.94	760.5	29.97	761.2	32	0.0	100	NE	.....	.....	8	.....	10	.....	.....	.....	.....	Rain & snow	E. Weedon.
*Kingston, Ontario	30.12	765.0	30.48	774.2	25	— 3.9	89	NE	3	1.3	.....	.....	Fog	.....	NE	0	0	Foggy	S. Woods, M. A
Little Glace Bay, N. S	29.96	761.0	30.00	762.0	31.0	— 0.6	.....	N	10	4.5	.....	7k	.....	N	.....	.....	.....	Snow squalls	C. H. Rigby.
*Montreal, Quebec	30.26	768.6	30.48	774.2	24	— 4.4	100	Calm	0	0	.....	.....	Fog	.....	.....	0	0	Foggy	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.67	753.6	30.40	772.1	31	— 0.6	89	E	6	2.7	.....	2cs	0	SW	.....	0	0	Fair	Rev. R. Mosley.
Peterboro, Ontario	29.65	753.1	30.45	773.4	26.3	— 3.2	61	Calm	.....	.....	0	.....	10	.....	.....	0	0	Foggy	J. F. Jeffers, B. A.
Port Dover, Ontario	29.66	753.4	30.38	771.6	37	2.8	100	NE	5	2.2	.....	.....	Fog	.....	.....	0	0	Foggy	H. Morgan.
Port Hastings, N. S	29.88	758.9	29.93	760.2	35.6	2.0	.....	NE	2	0.9	.....	.....	.....	.....	.....	0	0	Fine	Peter Grant.
Port Stanley, Ontario	29.69	754.1	30.36	771.1	37	2.8	97	E	4	1.8	.....	.....	Fog	.....	NE	0	0	Foggy	M. Payne.
*Quebec, Quebec	30.15	765.8	30.50	774.7	20	— 6.7	85	Calm	0	0	.....	.....	10n	.....	Calm	0	0	Cloudy	Capt. Ashe, R. N
*Rockliffe, Ontario	30.00	762.0	30.49	774.4	23	— 5.0	88	E	8	3.6	.....	.....	10s	.....	SE	Inap.	Inap.	Cloudy	W. H. McIntyre.
St. John, N. B	30.12	765.0	30.30	769.6	22	— 5.6	86	N	7	3.1	.....	0	0	.....	.....	0	0	Clear	G. Murdock, C. E.
*Saugeen, Ontario	29.61	752.1	30.35	770.9	34	1.1	91	Calm	0	0	.....	5cs	0	.....	.....	0	0	Fair	K. Stewart.
Stayner, Ontario	29.57	751.1	30.39	771.9	32	0.0	94	SE	10	4.5	.....	.....	10n	.....	SE	0	0	Cloudy	R. J. Cole.
Stratford, Ontario	29.08	738.6	30.42	772.7	32.2	0.1	90	SE	8.5	3.8	.....	.....	Fog	.....	.....	0	0	Foggy	C. J. MacGregor, M. A.
*Sydney, C. B	29.99	761.7	30.02	762.5	33	0.6	91	N	8	3.6	.....	.....	10n	.....	.....	0.05	1.3	Light snow	T. C. Hill.
*Toronto, Ontario	30.03	762.7	30.44	773.2	34	1.1	98	E	6	2.7	.....	.....	10n	.....	.....	Inap.	Inap	Foggy	Magnetic Observatory.
Windsor, N. S	30.08	764.0	30.18	766.6	28.0	— 2.2	88	N	18	8.0	.....	.....	10k	.....	.....	0	0	Fair	Prof. John E. Oram.
Woodstock, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Montgomery.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	32.0	0.0	.....	S	.....	.....	.....	Fog	Fog	.....	.....	0.02	0.5	Snowing	John Delany

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	30.20	767.1	30.44	773.2	27	— 2.8	77	NW	9	4 0	.....	.....	10s	.....	Calm	0	0	Cloudy	
Alpena, Michigan	29.62	752.3	30.28	769.1	39	3.9	100	SE	6	2.7	.....	.....	Fog	.....	Calm	0.05	1.3	Light rain	
Atlantic City, New Jersey	30.38	771.6	30.40	772.1	38	3.3	100	N	1	0.4	.....	.....	10s	.....	Calm	0	0	Threatening	
Augusta, Georgia	30.05	763.3	30.23	767.8	58	14.4	88	E	10	4.5	.....	.....	10s	.....	E	0.23	5.8	Threatening	
Baltimore, Maryland	30.37	771.4	30.42	772.7	42	5.6	100	E	2	0.9	.....	.....	10n	.....	Calm	0.01	0.3	Light rain	
Barnegat, New Jersey	30.37	771.4	30.39	771.9	36	2.2	95	NW	6	2.7	.....	.....	10s	.....	Calm	0	0	Cloudy	
Bismarck, Dakota	28.20	716.3	29.91	759.7	34	1.1	79	SW	4	1.8	.....	.....	10s	.....	W	0	0	Cloudy	
Boise City, Idaho	27.07	687.6	29.95	760.7	28	— 2.2	71	Calm	0	0	.....	5c	0	Calm	.....	0	0	Fair	
Boston, Massachusetts	30.20	767.1	30.36	771.1	28	— 2.2	77	NW	7	3.1	.....	1c	Sm'e	.....	.....	0.05	1.3	Clear	
Brackettville, Texas	28.87	733.3	29.92	760.0	53	11.7	79	Calm	0	0	.....	0	0	.....	.....	0.02	0.5	Clear	
Breckenridge, Minnesota	29.02	737.1	30.06	763.5	28	— 2.2	94	N	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Brownsville, Texas	30.00	762.0	30.07	763.8	56	13.3	93	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Buffalo, New York	29.62	752.3	30.35	770.9	39	3.9	100	NE	6	2.7	.....	.....	Fog	.....	Calm	0	0	Foggy	
Burkes, Arizona	.....	.....	.....	.....	51	10.6	72	SE	.....	.....	.....	.....	10ks	.....	SW	0	0	Cloudy	
Burlington, Vermont	30.21	767.3	30.50	774.7	26	— 3.3	77	NE	5	2.2	.....	.....	10s	.....	Calm	0	0	Cloudy	
Cairo, Illinois	29.53	750.0	29.92	760.0	58	14.4	94	E	11	4.9	.....	.....	10n	.....	Calm	1.19	30.2	Light rain	
Camp Grant, Arizona	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Camp Verde, Arizona	26.62	676.1	30.11	764.8	36	2.2	80	NW	.....	.....	.....	5k	0	S	.....	0	0	Fair	
Campo, California	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Cape Hatteras, N. Carolina	30.33	770.4	30.34	770.6	52	11.1	79	NE	20	8.9	.....	5c	2s	W	Calm	0	0	Fair	
Cape Henry, Virginia	30.42	772.7	30.44	773.2	45	7.2	84	NE	12	5.4	.....	.....	10s	.....	Calm	0	0	Cloudy	
Cape Lookout, N. Carolina	30.30	769.6	30.32	770.1	52	11.1	86	NE	20	8.9	.....	.....	10s	.....	NE	0	0	Cloudy	
Cape May, New Jersey	30.40	772.1	30.43	772.9	39	3.9	91	N	3	1.3	.....	.....	10s	.....	N	0	0	Threatening	
Charleston, South Carolina	30.20	767.1	30.27	768.8	58	14.4	93	NE	8	3.6	.....	.....	10n	.....	NE	0.03	0.8	Light rain	
Cheyenne, Wyoming	23.98	609.1	29.92	760.0	19	— 7.2	39	W	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Chicago, Illinois	29.39	746.5	30.08	764.0	52	11.1	86	SE	9	4.0	.....	.....	10n	.....	Calm	0.15	3.8	Light rain	
Cincinnati, Ohio	29.47	748.5	30.11	764.8	57	13.9	81	E	3	1.3	.....	2k	4s	S	Calm	0.03	0.8	Fair	
Cleveland, Ohio	29.55	750.6	30.30	769.6	45	7.2	84	E	3	1.3	.....	5ck	2s	SW	Calm	0	0	Fair	
Concho, Texas	28.10	713.7	29.82	757.4	40	4.4	80	Calm	0	0	.....	8cs	0	W	.....	0.08	2.0	Cloudy	
Corsicana, Texas	29.55	750.6	30.02	762.5	49	9.4	93	N	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Davenport, Iowa	29.43	747.5	30.07	763.8	53	11.7	93	NE	1	0.4	.....	.....	10n	.....	Calm	0.02	0.5	Light rain	
Deadwood, Dakota	.....	.....	.....	.....	17	— 8.3	67	SW	2	0.9	.....	0	5s	.....	Calm	Inap.	Inap.	Fair	
Denison, Texas	29.20	741.7	30.00	762.0	51	10.6	79	NW	8	3.6	.....	5k	0	NW	.....	0	0	Fair	
Denver, Colorado	24.74	628.4	29.96	761.0	26	— 3.3	76	S	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Detroit, Michigan	29.57	751.1	30.26	768.6	41	5.0	91	E	4	1.8	.....	.....	Fog	.....	Calm	0	0	Foggy	
Dodge Cit, Kansas	27.39	695.7	29.74	755.4	36	2.2	100	S	1	0.4	.....	.....	Fog	.....	Calm	0	0	Foggy	
Dubuque, Iowa	29.40	746.7	30.11	764.8	44	6.7	100	Calm	0	0	.....	.....	Fog	.....	Calm	0	0	Foggy	
Duluth, Minnesota	29.40	746.7	30.10	764.5	40	4.4	91	Calm	0	0	.....	.....	10s	.....	Calm	0.09	2.3	Cloudy	
Eagle Pass, Texas	29.25	742.9	30.00	762.0	49	9.4	93	Calm	0	0	.....	Haze	2s	Calm	Calm	0	0	Fair	
Eastport, Maine	30.21	767.3	30.28	769.1	27	— 2.8	77	N	16	7.2	.....	5ck	2s	NW	NW	0	0	Fair	
Erie, Pennsylvania	29.58	751.3	30.32	770.1	42	5.6	91	NE	5	2.2	.....	.....	10s	.....	.....	0	0	Cloudy	
Escanaba, Michigan	29.53	750.0	30.20	767.1	42	5.6	91	E	5	2.2	.....	.....	10n;fg	.....	Calm	0.46	11.7	Light rain	
Florence, Arizona	28.24	717.3	29.84	757.9	48	8.9	77	Calm	.....	.....	.....	0	2s	.....	Calm	0	0	Fair	
FortBayard, New Mexico	24.03	610.4	30.03	762.7	28	— 2.2	87	NW	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Fort Craig, New Mexico	25.77	654.6	.....	.....	20	— 6.7	70	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Fort Gibson, Indian Ter	29.38	746.2	29.92	760.0	50	10.0	86	N	7	3.1	.....	.....	10n	.....	N	0.05	1.3	Light rain	
Fort Griffin, Texas	28.77	730.7	30.07	763.8	46	7.8	92	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	28.80	731.5	29.93	760.2	44	6.7	92	N	4	1.8	.....	2cs	0	N	.....	0	0	Clear	
Galveston, Texas	29.99	761.7	30.03	762.7	56	13.3	93	NW	6	2.7	.....	.....	Fog	.....	Calm	0.44	11.2	Foggy	
Grand Haven, Michigan	29.52	749.8	30.17	766.3	52	11.1	79	SE	10	4.5	.....	.....	10s	.....	SE	0.13	3.3	Cloudy	
Indianapolis, Indiana	29.30	744.2	30.07	763.8	58	14.4	81	SE	7	3.1	.....	.....	10n	.....	SE	0.03	0.8	Light rain	
Indianola, Texas	30.04	763.0	30.06	763.5	59	15.0	88	N	9	4.0	.....	0	0	.....	.....	0	0	Clear	
Jacksboro, Texas	28.87	733.3	30.02	762.5	46	7.8	84	N	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Jacksonville, Florida	30.10	764.5	30.12	765.0	65	18.3	90	E	4	1.8	.....	5k	5ks	SW	SE	0.02	0.5	Cloudy	
Keokuk, Iowa	29.37	746.0	29.98	761.5	52	11.1	93	NE	8	3.6	.....	.....	10n	.....	Calm	0.04	1.0	Light rain	
Key West, Florida	30.02	762.5	30.05	763.3	73.0	22.8	88	SE	14	6.3	.....	.....	10n	.....	SE	0.02	0.5	Light rain	
Kittyhawk, North Carolina	30.34	770.6	30.36	771.1	49	9.4	85	NE	19	8.5	.....	.....	10s	.....	NE	0	0	Cloudy	
Knoxville, Tennessee	29.14	740.1	30.15	765.8	53	11.7	93	E	8	3.6	.....	.....	10n	.....	S	0.15	3.8	Misting	
La Crosse, Wisconsin	29.37	746.0	30.12	765.0	45	7.2	76	S	2	0.9	.....	.....	Fog	.....	.....	Inap.	Inap.	Foggy	
La Mesilla, New Mexico	26.07	662.2	30.22	767.6	30	— 1.1	68	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Laredo, Texas	.....	.....	.....	.....	50	10.0	79	Calm	0	0	.....	10c	0	Calm	.....	0	0	Cloudy	
Leavenworth, Kansas	29.15	740.4	30.02	762.5	36	2.2	100	NW	3	1.3	.....	.....	Fog	.....	Calm	0	0	Foggy	
Los Angeles, California	29.45	748.0	29.79	756.7	44	6.7	84	N	7	3.1	.....	0	8s	.....	W	0.43	10.9	Cloudy	
Louisville, Kentucky	29.52	749.8	30.08	764.0	59	15.0	88	SE	7	3.1	.....	.....	10n	.....	SE	0.02	0.5	Light rain	
Lynchburg, Virginia	29.65	753.1	30.36	771.1	48	8.9	85	NE	1	0.4	.....	.....	10s	.....	W	0.05	1.3	Cloudy	
Maricopa Wells, Arizona	.....	.....	.....	.....	37	2.8	63	N	.....	.....	.....	5cs	0	W	.....	0	0	Fair	
Marquette, Michigan	29.45	748.0	30.16	766.1	45	7.2	76	SE	3	1.3	.....	.....	10s	.....	Calm	0.12	3.0	Cloudy	
Mason, Texas	28.40	721.3	30.20	767.1	43	6.1	92	N	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Memphis, Tennessee	29.55	750.6	29.86	758.4	60	15.6	94	E	6	2.7	.....	.....	10n	.....	E	1.00	25.4	Light rain	
Milwaukee, Wisconsin	29.44	747.8	30.14	765.5	46	7.8	100	SE	8	3.6	.....	.....	10n;fg	.....	Calm	0.44	11.2	Light rain	
Mobile, Alabama	29.91	759.7	29.96	761.0	64	17.8	97	SE	12	5.4	.....	.....	10n	.....	S	1.18	30.0	Heavy rain	
Montgomery, Alabama	29.80	756.9	30.03	762.7	62.5	16.9	88	SE	13	5.8	.....	.....	10s	.....	SE	0.19	4.8	Cloudy	
Morgantown, West Virginia	29.20	741.7	30.28	769.1	43	6.1	75	Calm	0	0	.....	10c;cs	Haze	W	.....	0	0	Cloudy	
Mt. Washington, N. H.	24.91	607.3	30.27	768.8	21	— 6.1	71	N	24	10.7	.....	10cs	5s	N	N	0	0	Cloudy	
Nashville, Tennessee	29.50	749.3	30.03	762.7	57	13.9	93	E	4	1.8	.....	.....	10n	.....	S	0.46	11.7	Heavy rain	
New Haven, Connecticut	30.26	768.6	30.38	771.6	27	— 2.8	77	N	6	2.7	.....	0	0	.....	.....	0	0	Clear	
New London, Connecticut	30.31	769.9	30.36	771.1	28	— 2.2	77	N	5	2.2	.....	2c	Haze	N	Calm	0	0	Fair	
New Orleans, Louisiana	29.89	759.2	29.95	760.7	65	18.3	94	W	6	2.7	.....	.....	10ks	.....	Calm	0.16	4.1	Cloudy	
Newport, Rhode Island	30.30	769.6	30.35	770.9	32	0.0	69	N	4	1 8	.....	2c	0	N	.....	0	0	Clear	
New York, New York	30.20	767.1	30.40	772.1	31	— 0.6	89	NW	13	5.8	.....	0	2ks	.....	NW	0	0	Foggy	
Norfolk, Virginia	30.34	770.6	30.40	772.1	45	7.2	92	E	7	3.1	.....	.....	10s;hz	.....	Calm	0.02	0.5	Cloudy	
North Platte, Nebraska	27.10	688.3	29.78	756.4	27	— 2.8	83	S	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Olympia, Washington Ter.	30.02	762.5	30.06	763.5	40	4.4	100	Calm	0	0	.....	.....	10s	.....	SW	0.03	0.8	Cloudy	
Omaha, Nebraska	28.92	734.6	30.02	762.5	40	4.4	91	SE	1	0.4	.....	.....	Fog	.....	Calm	0	0	Foggy	
Oswego, New York	30.09	764.3	30.43	772.9	35	1.7	85	E	2	0.9	.....	.....	Fog	.....	Calm	0	0	Foggy	
Pembina, Dakota	29.12	739.6	29.97	761.2	30	— 1.1	89	S	8	3.6	.....	8c	0	Calm	.....	0.11	2.8	Fair	
Philadelphia, Pennsylvania	30.36	771.1	30.42	772.7	42	5.6	91	E	3	1.3	.....	.....	Fog	.....	Calm	0	0	Foggy	
Phœnix, Arizona	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Pike's Peak, Colorado	17.68	449.1	29.89	759.2	6	—14.4	52	SE	2	0.9	.....	0	Haze	.....	.....	0	0	Clear	
Pioche, Nevada	23.77	603.8	29.54	750.3	33	0.6	80	S	8	3.6	.....	0	8s	.....	S	0	0	Cloudy	
Pittsburg, Pennsylvania	29.45	748.0	30.28	769.1	43	6.1	91	E	4	1.8	.....	10c;k	Fog	W ; Calm	Calm	0	0	Cloudy	
Port Huron, Michigan	29.60	751.8	30.28	769.1	38	3.3	100	SE	6	2.7	.....	.....	Fog	.....	Calm	0.01	0.3	Foggy	
Portland, Maine	30.28	769.1	30.34	770.6	33	0.6	79	NW	4	1.8	.....	2k	Fog	N	.....	0	0	Fair	
Portland, Oregon	30.01	762.2	30.11	764.8	38	3.3	90	NE	4	1.8	.....	.....	10s	.....	Calm	0.01	0.3	Cloudy	
Prescott, Arizona	24.57	624.1	29.93	760.2	42	5.6	42	SW	.....	.....	.....	.....	10s	.....	SW	0	0	Cloudy	
Punta Rassa, Florida	30.04	763.0	30.05	763.3	68	20.0	90	E	16	7.2	.....	5s	5n	E	E	0.26	6.6	Light rain	
Red Bluff, California	29.47	748.5	29.83	757.7	42	5.6	91	N	3	1.3	.....	.....	10s	.....	Calm	1.70	43.2	Cloudy	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Rochester, New York	29.74	755.4	30.39	771.9	36	2.2	100	E	8	3.6	.....	.....	Fog	.....	Calm	0.02	0.5	Foggy	
Roseburg, Oregon	29.45	748.0	30.03	762.7	40.5	4.7	82	N	8	1.3	.....	.....	10s	.....	Calm	1.44	36.6	Cloudy	
Sacramento, California	29.66	753.4	29.74	755.4	43	6.1	86	N	8	3.6	.....	10k	0	S	.....	0.33	8.4	Cloudy	
St. Louis, Missouri	29.37	746.0	29.93	760.2	57	13.9	100	E	4	1.8	.....	.....	10n	.....	Calm	0.25	6.3	Light rain	
St. Marks, Florida	30.06	763.5	30.08	764.0	64	17.8	89	SE	8	3.6	.....	.....	10s	.....	SE	0.24	6.1	Cloudy	
St. Paul, Minnesota	29.20	741.7	30.05	763.3	40	4.4	86	SE	11	4.9	.....	.....	10s	.....	Calm	0	0	Cloudy	
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salt Lake City, Utah	25.53	648.4	29.86	758.4	35	1.7	53	SE	8	3.6	.....	0	0	.....	.....	0	0	Clear	
San Antonio, Texas	29.86	745.7	29.95	760.7	50	10.0	86	N	2	0.9	.....	0	0	.....	.....	0	0	Clear	
San Diego, California	29.79	756.7	29.86	758.4	45	7.2	92	NE	4	1.8	.....	0	5s	.....	W	0.94	23.9	Fair	
Sandusky, Ohio	29.57	751.1	30.26	768.6	45	7.2	84	E	14	6.3	.....	.....	10s	.....	Calm	0	0	Cloudy	
Sandy Hook, New Jersey	30.36	771.1	30.38	771.6	33	0.6	80	N	11	4.9	.....	.....	8ks	.....	Calm	0	0	Cloudy	
San Francisco, California	29.68	753.9	29.75	755.6	47	8.3	77	N	14	6.3	.....	.....	10s	.....	N	0.14	3.6	Cloudy	
Santa Fé, New Mexico	23.22	589.8	29.76	755.9	21	— 6.1	57	NW	8	3.6	.....	0	Haze	.....	Calm	0	0	Clear	
Savannah, Georgia	30.12	765.0	30.21	767.3	59	15.0	88	E	8	3.6	.....	.....	10s	.....	E	0.31	7.9	Cloudy	
Shreveport, Louisiana	29.75	755.6	29.97	761.2	55	12.8	87	W	6	2.7	.....	.....	10s	.....	W	1.25	31.7	Cloudy	
Smithville, North Carolina	30.28	769.1	30.31	769.9	52	11.1	100	N	11	4.9	.....	.....	10u	.....	N	0.26	6.6	Light rain	
Springfield, Massachusetts	30.18	766.6	30.33	770.4	26	— 3.3	76	Calm	0	0	.....	2c	Fog	N	Calm	0	0	Fair	
Stockton, Texas	26.96	684.8	29.96	761.0	39	3.9	91	S	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Thatcher's Island, Mass	30.29	769.4	30.35	770.9	34	1.1	79	NW	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Toledo, Ohio	29.56	750.8	30.26	768.6	40	4.4	100	NE	12	5.4	.....	.....	Fog	.....	NE	0	0	Foggy	
Tucson, Arizona	.....	.....	.....	.....	33	0.6	33	S	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Tybee Island, Georgia	30.18	766.6	30.21	767.3	58	14.4	100	E	16	7.2	.....	.....	10n	.....	E	0.36	9.1	Light rain	
Umatilla, Oregon	29.76	755.9	.....	.....	36	2.2	90	Calm	0	0	.....	.....	10s	.....	Calm	0.07	1.8	Cloudy	
Vicksburg, Mississippi	29.66	753.4	29.91	759.7	59	15.0	88	SW	10	4.5	.....	.....	10s	.....	SW	0.11	2.8	Cloudy	
Virginia City, Montana	24.18	614.2	29.66	753.4	22	— 5.6	74	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Visalia, California	29.45	748.0	29.83	757.7	39	3.9	100	SE	1	0.4	.....	5ck	0	NW	.....	0.44	11.2	Fair	
Washington, D. C.	30.28	769.1	30.40	772.1	42.5	5.8	100	E	3	1.3	.....	.....	10n;fg	.....	.....	0.01	0.3	Light rain	
Wickenburg, Arizona	.....	.....	.....	.....	31	— 0.6	79	W	.....	.....	.....	0	10ks	.....	.....	0	0	Threatening	
Wilmington, N. Carolina	30.24	768.1	30.32	770.1	49	9.4	93	NE	8	3.6	.....	.....	10n	.....	NE	0.07	1.8	Light rain	
Winnemucca, Nevada	25.37	644.4	29.73	755 1	27	— 2.8	76	NE	16	7.2	.....	10k	0	SW	.....	0	0	Cloudy	
Wood's Holl, Mass	30.30	769.6	30.36	771.1	32	0.0	79	N	5	2.2	.....	Haze	0	.....	.....	0	0	Clear	
Yankton, Dakota	28.79	731.3	30.14	765.5	28	— 2.2	88	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Yuma, Arizona	29.64	752.8	29.81	757.2	50	10.0	86	W	15	6.7	.....	.....	10n	.....	.....	0.02	0.5	Light rain	
Sub-Series.																			
York Factory, B. A.	30.04	763.0	30.10	764.5	9.0	—12.8	89	S	5	2.2	.....	.....	10s	.....	NW	0.70	17.8	Raining	J. Fortescue, W. Wood
Havana, Cuba, W. I.	30.00	762.0	30.02	762.5	73	22.8	81	Calm	0	0	.....	4k	4ks	SW	.....	0	0	Cloudy	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	James Gall.
Nassau, W. I.	29.83	757.7	29.91	759.7	81	27.2	.....	NE	5	2.2	.....	.....	.....	.....	.....	0	0	Fair	F. M Everett.
St. Thomas, W. I.	.....	.....	.....	.....	78	25.6	.....	E	3	1.3	.....	2c	2k	NE	.....	0	0	.....	G. O. Gellich.
Paramaribo, D. Guiana, S. A.	.....	.....	29.97	761.2	83	28.3	79	E	.....	.....	3	.....	8ks	.....	.....	0.240	6.10	⅜ Cloudy	C. J. Hering.
Batavia, Dutch Guiana, S. A	29.98	761.4	29.98	761.6	84.2	29	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0	Cloudy	Dr. H. Groot.
Medellin, Colombia, S. A.	25.22	640.6	.....	.....	66.6	19.2	84	NE	.....	.....	1	4cs;ck	2ks	.....	.....	0	0	Fair	Thomas Herran.
Honolulu, Oahu, H. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Daniel Smith.
Makawao, Maui, H. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo; for Batavia, the barometer reduced to freezing but not to sea-level. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 760 ft., or 533.4 m.; Deadwood, (?); Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,110.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.: Tucson, 2,645 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.67 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in ; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.64 in.; Stockton, 3.00 in.; Tucson, 2.69 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation

STATIONS AND VESSELS.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard Mare Island, Cal.	29.73	755.1	45	7.2	45	7.2	84	ENE	6	2.7	.....	.....	9s;n	.....	S	0.095	2.41	.....	.....	Rainy.....	
Navy Yard, Pensacola, Fla.	30.08	764.0	.....	.....	63	17.2	100	E	29	13.0	.....	.....	10	.....	.....	0.69	17.5	.....	.....	Squally.....	
Navy Yard, Portsmouth, N.H	30.33	770.4	57	13.9	25	— 3.9	87	WNW	.....	.....	1	.....	.....	.....	.....	0	0	.....	.....	Clear.....	
Naval Hospital, Yokohama, Japan.....	30.07	763.8	49	9.4	38.5	3.6	68	Calm	.....	.....	0	.....	1k	.....	W	0	0	.....	.....	Fair	
Alliance, Smyrna, Turkey.....	30.06	763.5	52	11.1	49	9.4	63	N	.....	.....	1	.....	2	.....	N	.....	.....	.....	.....	Clear	
Ashuelot, Shanghai, China.....	30.44	773.2	48	8.9	33	0.6	89	NW	.....	.....	2	.....	10	.....	Calm	.....	.....	.....	.....	Hazy.....	
Canonicus, New Orleans, La.....	29.93	760.2	49	9.4	63	17.2	93	SSW	.....	.....	2	.....	8	.....	.....	.....	.....	.....	.....	Cloudy.....	
Colorado, New York, N. Y.....	30.36	771.1	31	—0.6	30	— 1 1	89	N	4	1.8	.....	.....	8	.....	N	0	0	.....	.....	Light fog.....	
Despatch, Constantinople, Turkey.	30.23	767.8	75	23.9	40	4.4	73	NE	.....	.....	3	.....	8	.....	NE	.....	.....	.....	.....	Cloudy.....	
Essex, S. 10° 38′, E. 7° 48′.....	29.86	758.4	76	24.4	78	25.6	86	SSW	.....	.....	3	.....	9	.....	.....	.....	.....	Long	SW	D. clouds.....	
Franklin, Norfolk, Va.....	30.51	774.9	57	13.9	44	6.7	??	ENE	6	2.7	.....	.....	.....	.....	ENE	0	0	.....	.....	Overcast.....	
Guard, Lisbon, Portugal.....	30.25	768.3	59	15.0	50	10.0	64	S	.....	.....	1	.....	1	.....	E	.....	.....	.....	.....	Hazy.....	
Lackawana, Mare Island, Cal.....	29.78	756.4	.....	.....	50	10.0	79	W	.....	.....	1	.....	3	.....	E	.....	.....	.....	.....	D. clouds.....	
Marion, Villefranche, France.....	30.08	764.0	54	12 2	59	15.0	88	SW	.....	.....	1	.....	1	.....	.....	0	0	Smooth	S	D. clouds.....	
Michigan, Erie, Pa.....	29.85	758.2	70	21.1	45	7.2	68	NE	.....	.....	1	.....	10	.....	NE	.....	.....	.....	.....	Cloudy.....	
Monocacy, Hong-Kong, China	30.09	764.3	66	18.9	64	17.8	78	NNW	.....	.....	0-1	.....	10	.....	S	0	0	.....	.....	D. clouds.....	
New Hampshire, Port Royal, S.C.....	30.38	771.6	.....	.....	59	15.0	100	E	15	6.7	.....	.....	.....	.....	.....	0.01	0.3	.....	.....	Raining.....	
Omaha, Valparaiso, Chili.....	30.00	762.0	65.5	18.6	62.5	16.9	77	W	1	0.4	.....	.....	6	.....	Calm	0	0	.....	.....	.....	
Onward, Callao, Peru.....	30.00†	762.0†	78	25.6	76	24.4	82	SE	.....	.....	3	.....	8	.....	.....	.....	.....	Long	W	D. clouds.....	
Ossipee, Norfolk, Va.....	30.48	774.2	70	21.1	48	8.9	66	ENE	.....	.....	2	.....	10	.....	Calm	.....	.....	.....	.....	Overcast.....	
Palos, Shanghai, China.....	30.42	772.7	43	6.1	32	0.0	90	NW	.....	.....	3	.....	10	.....	Calm	.....	.....	.....	.....	Overcast.....	
Plymouth, Aspinwall.....	29.93	760.2	82	27.8	81	27.2	100	NNE	.....	.....	2	.....	6	.....	.....	.....	.....	Smooth	NE	.....	
Powhatan, Norfolk, Va.....	.....	.....	.....	.....	48	8.9	92	ENE	4.8	2.1	.....	.....	10	.....	.....	0	0	.....	.....	Overcast.....	
Ranger, Shanghai, China.....	30.56	776.2	.....	.....	39	3.9	77	NNW	.....	.....	2	.....	10	.....	Calm	.....	.....	.....	.....	Overcast.....	
Rio Bravo, Brownsville, Texas.....	29.93	760.2	.....	.....	54	12.2	100	WNW	.....	.....	1	.....	2	.....	.....	.....	.....	.....	.....	D. clouds....	
Santee, Annapolis, Md.....	30.48	774.2	65	18.3	44	6.7	92	SE	.....	.....	1	.....	10	.....	.....	0.01	0.3	.....	.....	Foggy	
Saratoga, Norfolk, Va.....	.....	.....	.....	.....	49	9.4	100	E	.....	.....	2	.....	10	.....	ENE	0	0	.....	.....	Overcast.....	
St. Louis, League Island, Pa	30.23	767.8	40	4.4	40	4.4	91	W	4	1.8	.....	.....	10	.....	W	0	0	.....	.....	Foggy.....	
Swatara, Norfolk, Va.....	30.49	774.4	.....	.....	52	11.1	73	ENE	.....	.....	1	.....	10	.....	N&E	.....	.....	.....	.....	Overcast.....	
Tennessee, Shanghai, China	30.57	776.5	75	23 9	36	2.2	90	NW	.....	.....	2	.....	10	.....	N&W	0.22	5.6	.....	.....	D. clouds.....	
Trenton, Villefranche, France.....	30.18	766.6	.....	.....	64	17.8	51	W	3	1.3	.....	.....	1	.....	W	0	0	.....	.....	D. clouds.....	
Vandalia, Palermo, Sicily.....	30.19	766.8	60	15.6	58	14.4	58	WNW	.....	.....	1	.....	3	.....	WNW	.....	.....	.....	.....	D. clouds.....	
Wabash, Boston, Mass.....	30.41	772.4	54	12 2	27	-- 2.8	.....	NW	1	0.4	.....	.....	4	.....	Calm	0	0	.....	.....	Hazy.....	
Wyoming, Washington, D. C.....	30.74	780.8	.....	.....	48	8.9	.....	Calm	.....	.....	0	.....	10	.....	.....	.....	.....	.....	.....	D. clouds	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. The position given for the Plymouth is that at noon, local time, instead of that at 7:35 a. m., Washington time.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	OBSERVER.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.	Character.	Direction from—		
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—				
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama, N. 40° 44′, W. 124° 40′			29.74*	755.4*	54	12.2		N			4		0						Capt. Seabury.
S. S. City of Peking, N. 32° 11′, E. 146° 28′			30.35*	771.6*	68	14.4	94	S			3		10		SW	Long	NW	Showery	Lt. Z. L. Tanner, U.S.N.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio, N. 25° 51′, E. 121° 10′			30.20	767.1	68	20.0		NE			8		10		NE	Rough	ENE	Overcast	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. *Aneroid.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.

S. S. Belgic, N. 38° 36′, E. 153° 2′			29.89*	759.2*				NW			6–7		Heavy		NW	Heavy	NW	Drizzling	Capt. John Metcalf.
S. S. Gaelic, Hong-Kong, China			30.10†	766.8†	64	17.8	78	NNE			2		Fog					Foggy	Capt. W. H. Kidley
S. S. Oceanic, N. 30° 17′, W. 150° 22′			30.14	765.5	61	16.1	94	SW			3		4		W	Swell	WNW	Showery	Capt. H. Parsell.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. *Corrected for temperature and elevation; instrumental error not known. †Aneroid.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig																			Capt. Undütz.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds.

UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Lo'wr	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second	0—10.	0—10.	0—10.	From—	From—	Character.	Direction from—		
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, N. 45° 56′, W. 53° 33′			29.95*	760.7*	36	2.2	??	NE			2		8		NW	Mod'ate	NE	Snow squalls	Captain Sargent.
S. S. Ohio, N. 51° 16′, W. 12° 56′			30.06	763.5	50.5	10.3	89	NNW			5		5		NNW	Rough	NNW	Fair	Captain Morrison.
S. S. Pennsylvania																			Captain Harris.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. *Aneroid

RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

S. S. Nederland																			Capt. Randle.
S. S. Switzerland																			Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

S. S. Hibernian																			
S. S. Scandinavian, N. 45° 47′, W. 58° 30′			29.98	761.5	27	— 2.8		NNE			6		9		N	Mod'ate	NNE	Snowing	Capt. W. Richardson.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, Boothbay, Maine			30.35	770.9	32	0.0	79	N	3	1.3			0					Clear	Capt. James Jorgensen.

NOTE.—The originals for the schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^{d}.) Chief Signal Officer, U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON DECEMBER 25, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSÉ mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:48 P. M. GREENWICH mean time.
0:58 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:18 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:38 P. M. COPENHAGEN mean time.
1:38 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours	.....	.....	30.15	765.7	58.3	14.6	52	N	.....	.....	1	.....	1	.....	.....	0	0	Very fair.....	Michel.
Algiers	.....	.....	29.98	761.4	56.5	13.6	62	S	.....	.....	1	.....	3	.....	.....	0.071	1.8	Pretty fair..	Peter.
La Calle	.....	.....	29.96	761.0	51.8	11.0	71	W	.....	.....	3	.....	7	.....	.....	0.039	1.0	Very cloudy	Fleury.
Tunis	.....	.....	29.99	761.8	52.0	11.1	84	W	.....	.....	2	.....	10	.....	.....	0.016	0.4	Covered.....	Jacques.
Sfax	.....	.....	.....	.....	57.2	14.0	.....	SW	.....	.....	3	.....	10	.....	.....	0.276	7.0	Covered.....	Husson.
Saida	.....	.....	30.05	763.2	43.2	6.2	85	SSE	.....	.....	3	.....	2	.....	.....	0	0	Fair.....	Millot.
Tebessa	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Bassières.
Geriville	.....	.....	30.05	763.3	39.9	4.4	93	SSE	.....	.....	2	.....	3	.....	.....	0	0	Pretty fair..	Lemaitlot.
Laghouat	.....	.....	30.02	762.5	37.4	3.0	100	NE	.....	.....	4	.....	10	.....	.....	0	0	Covered.....	Guyot.
Biskra	.....	.....	30.02	762.4	51.8	11.0	80	NW	.....	.....	1	.....	10	.....	.....	0	0	Covered.....	Kuntz.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m.; or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

Agram	29.22	742.1	29.79	756.7	33.3	0.7	81	Calm	.....	.....	0	.....	10	.....	.....	0.787	20.0	.....	Prof. Ivan Stozir
Cracow, I. R. Observatory	28.92	734.5	29.71	754.5	35.2	1.8	75	W	.....	.....	3	.....	5	.....	.....	0	0	.....	Dr. Wierzbiski.
Eperies	28.91	734.3	29.84	758.0	23.5	— 4.7	93	S	.....	.....	1	.....	10	.....	.....	0.063	1.60	.....	Julius Mikolik.
Gratz	28.50	723.8	29.80	756.8	32.2	0.1	73	ENE	.....	.....	3	.....	4	.....	.....	0	0	.....	Andreas Rospini.
Hermannstadt	28.48	723.5	30.04	763.1	11.8	—11.2	89	NE	.....	.....	1	.....	10	.....	.....	0	0	.....	Prof. Reissenberger.
Kremsmünster	28.43	722.2	29.83	757.6	32.7	0.4	92	Calm	.....	.....	0	.....	10	.....	.....	0.138	3.5	.....	Prof. C. Wagner.
Lemberg	28.68	728.4	29.70	754.4	31.3	— 0.4	83	SW	.....	.....	2	.....	6	.....	.....	0.020	0.5	.....	Dr. T. Stanecki.
Pola	29.07	753.5	29.78	756.4	50.5	10.3	71	SW	.....	.....	1	.....	10s	.....	.....	0	0	.....	I.R.Hydrographic Office.
Szathmar	29.44	747.7	29.93	760.2	27.9	— 2.3	87	E	.....	.....	4	.....	10	.....	.....	0.039	1.0	.....	Johann Tamas, S. J.
Szegedin	29.56	750.9	29.86	758.4	29.3	— 1.5	96	S	.....	.....	2	.....	10	.....	.....	0	0	.....	Karl Stancel.
Trieste	29.71	754.6	29.81	757.2	45.5	7.5	83	Calm	.....	.....	0	.....	10	.....	.....	1.173	29.8	Raining...	P. Busin.
Vienna	29.05	737.8	29.77	756.1	36.7	2.6	72	W	.....	.....	3	.....	8	.....	.....	0	0	.....	I.R. Central Met.Obs'y.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

Arlon	28.20	717.8	29.83	757.6	28.9	— 1.7	89	NW	.....	.....	1	.....	2	.....	.....	0	0	.....	Prof. M. Passau.
Brussels	29.52	749.8	29.72	755.0	35.6	2.0	68	W	.....	.....	4	1	.....	W	.....	0.106	2.70	.....	Royal Observatory.
Furnes	29.72	755.0	29.75	755.6	38.8	3.8	67	W	.....	.....	4	.....	4	.....	.....	0.142	3.6	.....	M. E. de Cae.
Maeseyck	29.57	751.0	29.70	754.3	33.6	0.9	90	W	.....	.....	4	.....	10	.....	.....	0.063	1.6	.....	M. Pierrot.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	29.44	747.8	29.54	750.3	27.5	— 2.5		W	11	4.9			2			0.300	7.62	Blue sky	W. Boswell.
Ardrossan	29.58	751.3	29.60	751.8	33	0.6		N			1		4					Snowing	William McNeil.
Armagh, Observatory			29.61	752.1	35.8	2.1		SW	9	4.6						Blank	Blank		S. Call, for Dr. Robinson.
Bideton, (Liverpool Obs.)			29.66	753.4	34.5	1.4		NNE	2	0.9			10					Snowing	John Hartnup.
Birr Castle, (Parsonstown)																			J. Dreyer.
Bradford, Yorkshire																0.09	2.3		J. McLandsborough.
Bridgetown, (Barbados)	29.95	760.7	29.98	761.5	79	26.1		E			2		5					Raining	Pvt. G. W. Roberts, A.
Cambridge, Observatory			29.69	754.1	35.0	1.7		SW			1		7			Blank	Blank	D. clouds	H. Todd. [H.C.
Cardington			29.72	754.9	35.0	1.7		W			1		8			Blank	Blank	Overcast	John McLaren.
Chatham, School M. E.	29.68	753.9	29.82	757.4	40.2	4.6		SW			1		3					Blue sky	Lt. W. G. Morris, R. E.
Dartmoor	28.33	719.6	29.77	756.1	37.4	3.0		SW			6		8					Rain and fog	Alexander Watt.
Davos Platz (Switzerland)																			Francis Redford, M. A.
Donaghadee	29.59	751.6	29.62	752.3	33	0.6		W			3		5					D. clouds	J. Mac Gowan.
Dover	29.72	754.9	29.74	755.4	37	2.8		W			4		2					¼ clouded	J. Costello.
Eccles, (near Manchester)			29.66	753.4	35.0	1.7		NW					10					Misty	Thomas Mackereth.
Falmouth, Observatory					43.1	6.2		W			1		9					Overcast	The Staff.
Fort Napier, (Natal)	27.68	703.1	29.91	759.7	65.3	18.5		E			2		10					Overcast	Pvt. G. Salmon, A.H. C
Free Town, (Sierra Leone)			29.89	759.2	87	30.6		NW			2		3					D. clouds	
Galway, Queen's College																			Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	30.07	763.8	30.12	765.0	56.0	13.3		NW			3		0					Blue sky	Corpl. C. Aitken, A.H.C.
Glasgow, Observatory	29.38	746.2	29.59	751.6	31.6	— 0.2		WSW			1							Foggy	D. G. Maclean.
Great Yarmouth	29.66	753.4	29.67	753.6	33	0.6		W			3		5					Misty	G. T. Watson.
Greenwich, Royal Obs'y	29.56	750.8	29.74	755.4	36.6	2.6		WSW			1		10					Thin clouds	The Staff, for G. B. Airy.
Guernsey	29.58	751.3	29.81	757.2	48	8.9		WNW			1		7					D. clouds	Dr. S. E. Hoskins, F.R.S.
Helston			29.84	757.9	45	7.2		W			0		4ck			0	0	Fine	M. P. Moyle.
Holyhead	29.59	751.6	29.64	752.8	40	4.4		W			4		3					D. clouds	John Tilston.
Jersey	29.54	750.3	29.84	757.9	45.0	7.2		NW			3		8					Gloomy	J. Fisher.
Kew, Observatory			29.74	755.4	38.1	3.4		WSW	9	4.0			2					D. clouds	The Staff.
Kingstown	29.68	753.9	29.71	754.6	38	3.3		WNW			4		9					Overcast	George Mitchell.
Leicester, Museum			29.69	754.1	33.7	0.9		NE			1		10					Overcast	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.83	757.7	29.90	759.4	56.0	13.3		NW			5		6					D. clouds	Sgt. Fred. Travis, A. H.
Nairn	29.45	748.0	29.55	750.6	27	— 2.8		Calm			0		0					Clear	W. D. Penny. [C.
Nassau, (Bahamas)			29.99	761.7	68.8	20.4		SE			1		4					D. clouds	C. S. Duncombe.
Nottingham, Observatory	29.50	749.3	29.70	754.4	32.2	0.1		SW			1		10n		WSW	0.060	1.52	Snowing	E. J. Lowe, F. R. S
Oscott, St. Mary's College	29.14	740.1	29.68	753.9	36.0	2.2		WSW			3		9					D clouds	Rev. Stephen Whitty.
Oxford, Radcliffe Obs'y			29.72	754.9	36	2.2		WSW			1		6					D. clouds	Mr. Lucas
Plymouth	29.70	754.4	29.78	756.4	39.5	4.2		NE			1		2					D. clouds	John Merrifield.
Roche's Point	29.72	754.9	29.76	755.9	42	5.6		W			3		8					Showery	W. Kennedy.
Saint Ann's Head																			John C. Walker.
Sandwick Manse, (Orkneys.)			29.50	749.3	29.8	— 1.2		NW	22	9.8			5					D. clouds	Rev. C. Clouston, LL. D
Scutari, Cemetery, (Turkey)			30.12	765.0	45.0	7.2		S			1		1					Blue sky	Sergt. W. H. Lyne.
Sheffield	29.39	746.5	29.64	752.8	36.4	2.4		WSW			1		7			0.10	2.5	Overcast	W. F. Cooper.
Silloth Rectory	29.58	751.3	29.61	752.1	33.1	0.6	95	N			1		7			0.105	2.67	D. clouds	Rev. F. Redford, M. A.
Stonyhurst, Observatory					33.6	0.9		W			1		8					Misty	Rev. S. J. Perry.
Stornoway, Lews C. (Hebr.)			29.47	748.5	26	— 3.3		SW			1		8					D. clouds	John Smith.
Stratfield Turgiss	29.51	749.5	29.73	755.1	37.2	2.9		W			1		3					D. clouds	Rev. C. H. Griffith, F.M.S
Thurso			29.48	748.8	31	— 0.6		N			4		6					D. clouds	John Trotter.
Truro, Royal Institution			29.78	756.4	45	7.2		SW			3		8					Gloomy	W. Newcombe.
Valencia, Observatory			29.73	755.1	41.6	5.3		WSW	9	4.0			10					Raining	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)																			Henry Mercer.
Cape Good Hope, Obs'y	29.96	761.0	30.00	762.0	80.1	26.7	44	SE	6	2.7		2	1						The Staff, for E. J. Stone.
Hobart Town, (Tasmania)			29.86	758.4	56.5	13.6	76	SE			2		4k			0.07	1.8		Francis Abbott, F.R.A.S.
Leith, Restalrig Park																			Andrew Gibb.
Mauritius, Observatory	29.74	755.4	29.93	760.1	80.8	27.1	62	ESE	20.0	8.9		0	5		ESE	0.02	0.5	Squally	C. Meldrum.
Melbourne, Observatory	29.88	758.9	29.97	761.2	56.5	13.6	84	S	3	1.3			3			0.09	2.3	Fine	R. L. J. Ellery.
Monach L't-house, (Hebrides)																			J. Youngclause.
North Unst, (Shetland Is.)																			Robert Burnet.

Note.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m.

Marine Series. Vessels.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea or swell. Height scale 0—9	Sea or swell. Direction from—	Weather.	Observer.
S. S. Algeria, N. 47° 30′, W. 38° 5′			29.96	761.0	58	14.4		S			3		10			15*	S	Rain and fog	Capt. W. Watson
S. S. Batavia																			Capt. J. E. Moultand.
Ship Camperdown																			Capt. A. T. Miller.
Brig Catherine																			Capt. Adam Smith.
Barque Celeste																			Capt. D. F. McKechnie
S. S. Hibernia																			Capt. W. R. Cato
Barque Maroon																			Capt. A. T. Brown.
Ship Mikado																			Capt. C. C. Prehn.
Royal Alice, N. 43° 45′, W. 46° 15′			29.39	746.5	59	15.0		SE			7		10			8	NE; SE	Raining	Capt. E. M. Hughes.
S. S. Seine																			Capt. H. Manning.
Barque Sorata																			Capt. Jas. J. Price.
Schooner Traveller																			Capt. Alex Simpson.

Note.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in fe weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. *Feet.

Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—1	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
San José	26.22	666.0	.....	.....	65.3	18.5	90	NE	.....	.....	1	8pc	1ks;d	.....	NE	0	0	.....	Federico Maison.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.02	737.2	29.07	738.4	34.3	1.3	78	W	.....	.....	7	.....	3	.....	.....	.....	.....	.....	.....
Fanöe	29.18	741.2	29.20	741 7	34.0	1.1	79	W	.....	.....	6	.....	4	.....	.....	.....	.....	.....	.....
Godthaab, (Greenland)	29.99	761.8	30.04	762.9	24.	— 4.4	91	SW	.....	.....	2	.....	10	.....	.....	.....	.....	.....	.....
Stykkisholm, (Iceland)	29.57	751.1	29.61	752.2	17.1	— 8.3	100	NE	.....	.....	6	.....	8	.....	.....	.....	.....	.....	.....
Thorshavn, (Faröe)	29.41	746.9	29.44	747.8	21.4	— 5.9	82	E	.....	.....	2	.....	10	.....	.....	.....	.....	.....	.....
Vestervig	28.84	732.5	29.01	736.8	33.4	0.8	87	NW	.....	.....	8	.....	10	.....	.....	.....	.....	Snowing	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

Alençon, Normal School	29.37	746.0	29.92	760.0	41.0	5	93	SW	.....	.....	4	.....	5	.....	W	0	0	Cloudy	Collignon, Director.
Amiens, Normal School	29.65	753.2	29.77	756.1	38.5	3.6	90	W	.....	.....	3	.....	5	.....	W	0	0	Cloudy	Bonvarne, Director.
Avignon, Normal School	29.76	756.0	29.84	758.0	46.4	8	70	N	.....	.....	1	.....	0	.....	.....	0	0	Very clear.	Mr. Girand, Director
Bar-sur-Seine	29.30	744.1	29.88	759.0	36.3	2.4	84	SW	.....	.....	1	.....	10kn	.....	W	0.047	1.2	Covered	C. Saillard.
Beaumette Obs'y (Angers)	29.65	753.1	29.82	757.3	44.1	6.7	85	SW	11.0	4.9	.....	.....	.....	.....	W	0.028	0.7	.....	Albert Cheux.
Beauvais	29.54	750.2	29.83	757.7	36.9	2.7	89	W	.....	.....	1	.....	10	.....	WNW	0.177	4.50	Covered	Normal School.
Besançon	29.02	737.1	29.94	760.5	37.0	2.8	72	SE	.....	.....	2	.....	0	.....	.....	0.575	14.6	Clear.	Normal School.
Bourg-en-Bresse	29.02	737.1	29.93	760.1	37.6	3.1	97	SW	.....	.....	2	.....	10n	.....	SW	0.28	7.	Covered	Normal School.
Bourges, Normal School	29.17	741.0	29.74	755.4	39.0	4.2	97	S	.....	.....	2	.....	5	.....	S	0	0	Cloudy	A. Wagner, Director.
Brest, Naval Observatory	29.56	750.9	29.78	756.4	46.6	8.1	83	WNW	.....	.....	2	.....	10	.....	WNW	0.079	2.00	Squally	The Staff.
Carcassonne, Normal School	29.47	748.5	29.89	759.2	50.0	10	79	W	.....	.....	4	.....	5	.....	NW	0.12	3.	Cloudy	Vateau, Director.
Caen	29.73	755.1	29.80	757.0	41.4	5.2	87	W	.....	.....	1	.....	2	.....	W	0.228	5.8	Slightly cl'dy	Normal School.
Chartres, Normal School	29.33	744.9	29.91	759.8	36.1	2.3	.....	W	.....	.....	2	.....	9	.....	SE	0	0	.....	Lequin, Director.
Châlons-sur-Marne, N. Sch'l	29.50	749.4	29.84	757.8	33.8	1.0	93	S	.....	.....	2	.....	10n	.....	.....	0.118	3.0	Covered	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.48	723.5	29.87	758.7	41.7	5.4	78	NW	.....	.....	1	.....	2	.....	NW	0.094	2.4	Slightly cl'dy	Allnard, Director.
Commercy, Normal School	28.96	735.6	29.88	758.9	33.3	0.7	88	W	.....	.....	4	.....	10	.....	W	0.20	5.	Covered	Dr. Goulet, Director.
Commune de Gréasque*	28.71	729.1	29.85	758.1	45.9	7.7	66	NW	.....	.....	2	.....	2	.....	NW	0	0	¼ covered	... Kina.
Grenoble	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Normal School.
La Roche-sur-Yon, N. School	29.76	756.0	29.98	761.6	46.8	8.2	86	WNW	.....	.....	2	.....	5	.....	ESE	0.049	1.25	Cloudy	Moullot, Director.
Le Mans, Normal School	29.53	750.1	29.85	758.1	41.9	5.5	97	W	.....	.....	2	.....	8	.....	W	0.010	0.25	Very cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	28.96	735.6	29.91	759.6	37.9	3.3	80	S	.....	.....	1	.....	2	.....	W	0.362	9.20	Slightly cl'dy	Voudez, Director.
Lorient, Naval Observatory	29.80	756.9	29.90	759.4	48.6	9.2	63	W	.....	.....	3	.....	10	.....	.....	0.098	2.5	Covered	T. Carré, Director.
Mâcon, Normal School	29.14	740.1	29.85	758.1	39.4	4.1	93	WSW	.....	.....	2	.....	10	.....	.....	0.35	9.	Covered	M. Marchal, Director.
Metz	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. A. Schuster, Dir.
Mirecourt	28.76	730.6	29.84	758.0	36.0	2.2	82	WSW	.....	.....	2	.....	1	.....	ENE	0	0	Clear	Normal School.
Nismes, Normal School	29.69	754.1	29.89	759.2	56.5	13.6	73	NW	.....	.....	4	.....	0	.....	.....	0	0	Clear	Boyer, Director.
Orleans, Normal School	29.49	749.1	29.89	759.1	36.7	2.6	86	W	.....	.....	2	.....	5	.....	W	0	0	Cloudy	Bernard, Director.
Paris, Observatory	29.60	751.7	29.84	758.0	35.6	2.0	93	WSW	.....	.....	1	.....	10	.....	.....	0.030	0.74	Rain & snow	National Observatory.
Privas	28.82	732.0	29.89	759.2	51.8	11	67	SW	.....	.....	2	.....	10	.....	SW	0	0	Covered	Normal School
Rochefort, Naval Obs'y	29.90	759.4	29.93	760.2	45.7	7.6	97	SSW	.....	.....	1	.....	0	.....	.....	0.20	5.	Clear	Lt. Decante, Director.
Rouen, Normal School	29.78	755.1	29.82	757.3	41.4	5.2	79	SW	.....	.....	2	.....	10	.....	NW	0.248	6.3	Covered	F. Lucard, Director.
Tarbes, Normal School	28.86	733.1	29.96	761.0	46.8	8.2	92	SE	.....	.....	2	.....	10	.....	W	.....	.....	Raining	T. Hugues, Director.
Villefranche	29.17	741.0	29.91	759.7	38.8	3.8	93	NW	.....	.....	1	.....	8	.....	SW	0	0	Very cloudy	Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.80	757.0	29.83	757.7	75.6	24.2	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0	.....	L'Abbé Marchési.
Marseilles, Observatory	.....	.....	29.82	757.5	48.6	9.2	58	WNW	.....	.....	3	.....	1	.....	.....	Inap.	Inap.	.....	The Staff.
Mont-Louis	24.67	626.7	29.99	761.7	37.6	3.1	49	SSW	7.4	3.33	.....	.....	10	.....	WSW	0	0	.....	Mr. Falguère.
Nice	.....	.....	29.71	754.7	50.0	10.0	.....	W	.....	.....	4	.....	2	.....	.....	0	0	Clear	Dr. A. Niepce.
Paris, Montsouris Obs'y	29.55	750.6	29.83	757.6	34.5	1.4	96	W	.....	.....	1	.....	10	.....	.....	0.122	3.1	Snowy	Marié Davy, Director.
Perpignan	.....	.....	29.89	759.2	54.3	12.4	62	N	11.2	5.00	.....	.....	4	.....	NW	Inap.	Inap.	.....	Dr. Fines.
Pic du Midi, (Summit,) H. P.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.32	566.8	.....	.....	22.1	— 5.5	.....	NW	.....	.....	3	.....	10	.....	.....	0.519	20.3	Snowy	Gen'l de Nansouty.
Saint Maur, (near Paris)	29.07	753.7	29.84	757.9	34.0	1.1	98	S	.....	.....	1	.....	10	.....	.....	0.106	2.7	Covered	E. Renou.
Toulouse, Observatory	29.22	742.1	29.94	760.4	48.4	9.1	90	WSW	.....	.....	2	.....	10	.....	.....	0.548	13.90	Rainy	The Staff.
Tours	29.05	753.1	29.85	758.1	43.2	6.2	85	WSW	.....	.....	1	.....	10	.....	WSW	0.012	0.3	.....	C. Marquet.
Versailles, (near Paris)	.....	.....	29.84	757.8	34.9	1.6	96	WNW	.....	.....	1	.....	10	.....	.....	0.137	3.47	Rain & snow	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.04	778.3	30.07	778.9	34.3	1.3	76	NW	9.4	4.2	.....	.....	10kn	.....	.....	0	0	Covered	Marc Dechevrens, S. J.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published. At Mirecourt and Rochefort the cloud directions are apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,686.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg																			
Berlin	29.31	744.5	29.49	749.0	35.2	1.8	75	SW			2		10			0.258	6.55		Prof. Dr. Hoh.
Breslau	29.11	739.3	29.63	752.6	34.3	1.3	62	WSW			4		1			0	0		Prof. Arndt.
Carlsruhe	29.37	745.9	29.80	757.0	35.6	2.0	60	SW			3		1			0	0		Royal University Obs'y.
Cassel	29.04	737.5	29.64	752.8	32.0	0.0	80	W			3		5			0.056	1.43	Snowing	Albert Senz.
Crefeld	29.48	748.9	29.65	753.0	34.7	1.5	66	W			4		9			0.24	6.		Dr. H. Möhl.
Emden	29.54	750.3	29.58	751.2	33.3	0.7	92	W			2		8			0.276	7.0		Director Lose.
Frankfort on the Main	29.41	746.9	29.79	756.6	32.7	0.4		SW			2		3			0.098	2.5		Prof. Prestel.
Friedrichshafen	29.04?	737.6?	29.91	759.7	35.8	2.1	67	SW			6		8	WSW		0	0		Physical Society.
Hamburg	29.35	745.5	29.42	747.3	32.6	0.3	96	WSW			5		10			0.524	13.3	Snowing	M. Wilhelm.
Kiel	29.31	744.4	29.32	744.8	33.4	0.8	86	W			5		7			0.224	5.69		Captain F. Hegemann.
Königsberg, (Prussia)	29.23	742.4	29.31	744.5	31.1	— 0.5	91	SW								0.056	1.40	Snowing	Prof. G. Karsten.
Köslin			29.27	743.4	32.7	0.4		SW			6		3			0	0		Prof. E. Luther.
Leipsic, Observatory	29.22	742.3	29.66	753.3	32.0	0.0	67	SW			6		7			0	0		H. Müller.
Memel, Naval School	29.16	740.7	29.21	741.8	35.2	1.8	78	SSW			6		10cs;s						Prof. Bruhns.
Neufahrwasser	29.25	743.0	29.27	743.4	34.5	1.4	82	WSW			5		9			0.047	1.2		Reinbrech von Skalweit.
Posen	29.24	742.7	29.54	750.3	34.2	1.2	77	W			8					0.016	0.4	Covered	A. Lothes.
Strassburg Obs., (in Alsace)	29.30	744.1	29.87	758.6	36.1	2.3	59	SW			2		10	W		0.047	1.2		Dr. Magener.
Stuttgart	28.84	732.5	29.81	757.2	33.8	1.0	79	W			4		2	W		0	0		Dr. Schur.
Treves, (Trier)	29.17	741.0	29.69	754.1	34.3	1.3	64	W			5		8			0	0		Prof. Schoder.
Weissenburg, (Bavaria)	28.25	717.6	29.84	757.8	29.3	— 1.5	84	W	7	3			8k	W	W	0	0		Prof. Flesch.
Wustrow, Naval School	29.31	744.5	29.34	745.2	34.5	1.4	90	W			5		10			0.040	1.03	Covered	Dr. Von Bebber.
																			E. F. Schütz.
German Naval Series.																			

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4. Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines, Königsberg, Posen and Wustrow in cubic zolls. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.71	754.6	30.11	764.8	51.1	10.6		SE			1							⅛ Clear	Dr. J. F. J. Schmidt.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and wind-force; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.93	760.2	29.98	761.5	75.3	24.1	65	NW	9.0?	4.0?			0			0	0	Blue sky	
Deesa	29.57	751.1	30.05	763.3	80.5	26.9	41	NW					0			0	0	Blue sky	
Bombay	29.89	759.1	29.92	760.1	82.1	27.8	74	NNW	19.0	8.5			0			0	0	Blue sky	
Poona	29.94	760.3	29.93	760.2	82.0	27.8	46	E					9	E		0	0	Dust-whirl	
Lahore	29.33	744.9	30.10	764.6	62.4	16.9	72	N	2.9	1.3			10			0	0	Cloudy	
Belgaum	27.42	696.5	29.98	761.4	74.6	23.7	47	E	12.0	5.4			1			0	0	D. clouds	
Bangalore																			
Roorkee	29.08	738.7	30.01	762.2	66.8	19.3	87	NW	1.9	0.8			0			0	0		
Agra	29.44	747.6	30.02	762.4	68.7	20.4	67	W								0	0		
Trichinopoly																			
Nagpur	28.96	735.5	30.01	762.3	78.1	25.6	56	SE	1.8	0.8			0			0	0	Blue sky	
Madras																			
Lucknow	29.60	751.8	29.98	761.5	70.5	21.4	85	Calm	3.5	1.6			0			0	0	Blue sky	
Allahabad	29.66	753.4	29.98	761.4	72.9	22.7	72	Calm	1.7	0.8			0			0	0	Blue sky	
Patna	29.78	756.5	29.97	761.3	70.9	21.6	80	W	0.9	0.4			0			0	0	Blue sky	
Hazaribagh	27.93	709 4	30.00	761.9	66.8	19.3	59	W	7.4	3.3			0			0	0	Blue sky	
Cuttack	29.90	759.4	29.98	761.5	75.0	23.9	66	NNW					0			0	0	Blue sky	
Calcutta (Alipore)	29.96	760.8	29.98	761.4	67.0	19.4	79	W	2.0	0.9			0			0	0	Blue sky	
Goalpara	29.55	750.6	29.95	760.8	69.8	21.0	62	Calm	1.2	0.5			0			0	0	Blue sky	
Chittagong	29.89	759.2	29.99	761.6	69.2	20.7	76	NNW	3.7	1.6			0			0	0	Blue sky	
Sibsagar	29.64	752.9	29.99	761.7	62.9	17.2	87	SSE	0.7	0.3			4			0	0	Blue sky	
Rangoon																			
Jubbulpore	28.64	727.5	30.02	762.5	78.5	25.8	66	SW	2.0	0.9			0			0	0	Blue sky	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,959 ft., or 911.0 m; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,361 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	21.79	553.4	29.75	755.7	19.2	— 7.1	74	W	.....	.....	2	.....	6	WNW	.....	0	0	.....	Ab. Dom. Morgini.
Stelvio	21.76	552.6	29.74	755.5	15.6	— 9.1	.....	SSW	.....	.....	1	.....	10	.....	.....	0	0	.....	Signora Ernesta Manfredi.
Udine	29.34	745.2	29.77	756.1	40.3	4.6	84	Calm	0	0	.....	.....	10	.....	.....	0	0	.....	Prof. Giovanni Clodig.
Padua	29.65	753.2	29.77	756.1	39.4	4.1	72	NNW	2.5	1.1	.....	.....	10	WSW	.....	0.067	1.7	.....	Prof. Dott. Lorenzoni.
Vicenza	29.58	751.2	29.78	756.3	40.8	4.9	85	SE	0	0	.....	.....	6	.....	.....	0	0	.....	Conte Alm. Da Schio.
Verona	29.55	750.5	29.78	756.4	41.0	5.0	76	E	.....	.....	1	.....	10	.....	.....	0	0	.....	Dott. B. Bertoncelli.
Bergamo	28.47	723.0	29.84	757.9	37.4	3.0	66	Calm	.....	.....	0	.....	4	.....	.....	0	0	.....	Prof. Trionfini Carlo.
Domodossola																			Prof. Giuseppe Calza.
Milan	29.26	743.3	29.82	757.3	37.8	3.2	.....	WNW	.....	.....	2	.....	9	NNW	.....	0.028	0.7	.....	Ab. Gio. Capelli.
Pavia																			Prof. Gio. Cantoni
Moncalieri	28.85	732.9	29.80	756.9	38.8	3.8	70	ESE	1.3	0.6	.....	.....	2	.....	.....	0	0	.....	Prof. P. F. Denza.
Mondovi	27.84	707.0	29.82	757.4	36.7	2.6	65	W	.....	.....	2	.....	5	.....	.....	0	0	.....	Prof. D. C. Bruno.
Porto Maurizio	29.54	750.3	29.77	756.1	50.5	10.3	66	WSW	.....	.....	2	.....	7	.....	.....	0	0	.....	Prof. L. Vassallo.
Genoa	29.56	750.7	29.73	755.1	47.3	8.5	66	N	8.1	3.6	.....	.....	10	N	.....	0	0	.....	Prof. G. M. Garibaldi
Piacenza	29.03	750.1	29.80	756.9	36.3	2.4	87	WNW	4.3	1.9	.....	.....	10	.....	.....	0	0	.....	Dott. G. Manzi.
Parma	29.49	749.0	29.82	757.4	37.8	3.2	95	SE	.....	.....	4	.....	10	.....	.....	0.024	0.6	.....	Prof. P. Pigorini.
Florence	29.53	750.1	29.80	756.9	44.6	7.0	90	NW	.....	.....	2	.....	10	.....	.....	0.008	0.2	.....	Cav. F. Meucci.
Leghorn	29.67	753.7	29.76	755.9	49.8	9.9	64	S	6.9	3.1	.....	.....	10	SW	.....	0.316	8.0	.....	Prof. P. Monte.
Siena	28.58	725.8	29.82	757.4	43.9	6.6	91	SSE	0.7	0.3	.....	.....	10	SW	.....	0.193	4.9	.....	Prof. L. Toscani.
Urbino	28.30	718.8	29.91	759.8	42.6	5.9	78	SW	.....	.....	2	.....	10	.....	.....	0	0	.....	Prof. P. Serpieri.
Pesaro	29.74	755.5	29.80	756.8	48.4	9.1	73	SE	13.0	5.8	.....	.....	10	.....	.....	0.012	0.3	.....	Prof. Luigi Guidi.
Ancona	29.69	754.2	29.80	757.0	46.0	7.8	68	SE	.....	.....	4	.....	10	.....	.....	0.031	0.8	.....	Prof. F. DeBosis.
Grosseto	29.70	754.3	29.81	757.2	53.4	11.9	63	SE	.....	.....	2	.....	8	SE	.....	0	0	.....	Avv. P. Ponticelli.
Rome	29.69	754.1	29.87	758.7	50.7	10.4	81	S	7.4	3.3	.....	.....	10	.....	.....	0.185	4.7	.....	Prof. P. A. Secchi.
Naples, O. U.	29.73	755.2	29.94	760.4	52.3	11.3	85	E	.....	.....	1	.....	10	SSW	.....	0.264	6.7	.....	Prof. L. Palmieri.
Lecce																			Prof. C. De Giorgi.
Cosenza	29.69	738.9	30.00	762.1	50.7	10.4	72	SE	2.5	1.1	.....	.....	10	.....	.....	0.067	1.7	.....	Prof. F. D. Conti.
Cagliari	29.67	753.7	29.87	758.7	55.4	13.0	66	NW	.....	.....	2	.....	5	W	.....	0.039	1.0	.....	Prof. A. Pacinotti.
Riposto, (Sicily)	29.93	760.3	29.98	761.5	53.6	12.0	80	N	.....	.....	2	.....	8	.....	.....	0	0	.....	Prof. F. Caflero.
Palermo	29.66	753.4	29.92	760.0	52.5	11.4	76	WSW	1.3	0.6	.....	.....	10	.....	.....	0.031	0.8	.....	Prof. G. Cacciatore.
Caltanissetta	29.04	709.8	29.93	760.3	46.1	7.3	76	WNW	.....	.....	4	.....	10	.....	.....	0.043	1.1	.....	Prof. A. Pagani.
Syracuse	29.82	757.4	29.89	759.3	52.5	11.4	66	WSW	.....	.....	2	.....	10	SW	.....	0.039	1.0	.....	Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.37	746.1	30.32*	770.2*	48.2	9.0	77	NNW	0	0	.....	.....	10	.....	.....	0.209	5.3	.....	Prof. F. Brioschi.
.....																			
.....																			

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,548.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo 379.6 m., or 1,245.8 ft.; Mondovi, 558 m., or 1,824.2 ft.; Siena, 348.5 m., or 1,143.3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft *Probably 29.93 inches, and 760.2 mm.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Tokei (Yeddo)																			The Observatory.
Tokei (Yeddo) University	29.94	760.5	30.04	763.0	41	5.0	49	NW	6	2.7	.....	.....	5s	.....	.....	0	0	Fair	Prof P. V. Veeder.
.....																			
.....																			

MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Aguascalientes																			I. N. Marin, M. D.
Córdoba																			C. Peña, M. D.
Cuernavaca																			L. Castillo, A. E.
Guadalajara																			Prof. L. Perez.
Guanajuato																			Prof. V. Fernandez.
Leon																			Prof. M. Leal.
Mexico	23.10	586.7	30.21	767.3	45.5	7.5	60	NW	0.3	0.13	.....	3ck	1s	W	.....	0	0	Clear	Central Observatory.
Orizaba																			N. N.
Orizaba																			I. Orozco, M. D.
Pabellon, (Aguascalts)																			M. V. de Leon, M. E.
Puebla																			Prof. B. Gonzalez.
Toluca																			Prof. C. Velazquez.
Tlacotalpam																			Prof. F. R. Bayly.
San Luis Potosi																			G. Barroeta, M. D.
Vera-Cruz																			Prof. J. Rossell.
Zacatecas																			J. A. Bonilla, M. E.
Puebla, (Catholic Institute)																			P. Spina. [M. M. D. D.
Morelia																			M. Tena, F. L. Páramo

Note.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,290 m., or 7,512.9 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m,, or 8,611.8 ft.; San Luis Potosí, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	29.71	754.5	29.71	754.5	37.4	3.0	.....	W	.....	.....	5	.....	.....	.....	.....	0.197	5.0	.....	
Groningen	29.47	748.5	29.52	749.9	32.9	0.5	.....	WNW	.....	.....	4	.....	.....	.....	.....	0.322	8.2	.....	
Helder	29.54	750.2	29.54	750.2	37.6	3.1	.....	WSW	.....	.....	6	.....	.....	.....	.....	0 197	5.0	.....	
Hellevoetsluis	.....	.....	29.67	753.6	37.4	3.0	52	WNW	.....	.....	5	.....	.....	.....	.....				
Utrecht	29.59	751.6	29.64	752.8	38.4	0.8	92	W	.....	.....	4	.....	10	.....	.....	0.063	1.6	Dull	H. v d Brink.
.....																			

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter; at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	28.91	734.2	28.96	735.6	33.1	0.6	92	NNW	47.0	21.0	.....	.....	6	.....	.....	0.118	3.0	.....	
Brönö	29.06	738.2	29.10	739.2	28.4	— 2.0	70	NE	18	8	.....	.....	9	.....	.....	0	0	.....	
Christiania	28 67	728.1	28.82	731.9	33.4	0.8	80	NNE	18	8	.....	.....	10	.....	.....	0.173	4.4	.....	
Tromsö	29.25	743.0	29.30	744 1	18.7	7.4	78	WSW	4	2	.....	.....	0	.....	.....	0	0	.....	

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	30.29	769.3	30.48	774.2	58.3	14.6	63	SSW	3.1	1.4	.....	.....	5	.....	.....	0	0	.....	Dr. J. A. Sampaio.
Campo Major	29.12	739.7	30.18	766.6	45.3	7.4	61	NNE	2.5	1.1	.....	.....	2	.....	.....	0	0	.....	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.23	767.8	30.30	769.6	65.3	18.5	45	SW	4.3	1.9	.....	.....	1	.....	.....	0	0	.....	Capt. D. A. da Cunha.
Lisbon, Observatory	29.82	757.4	30.18	766.6	53.6	12.0	67	N	28.6	12.8	.....	.....	3	.....	.....	0	0	.....	The Staff.
Ponta Delgada, (Azores)	30.41	772.4	30.48	774.2	64.4	18.0	63	SSE	.....	.....	.....	.....	3	.....	.....	0	0	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 9 h. 6 m., p. m.

Naval Series. Vessels.	Sea or swell. Height scale 0–9	Sea or swell. Direction from—		
S. Bartholomew Dias	.....	.....	.....	R, A. T. Pinha, Com'd't.
S. S. India	.....	.....	.....	A. D. Pedroso, Com'd't.
S. S. Mindello	.....	.....	.....	J. F. R. R. Bastos, Com'd't.
S. S. Sado	.....	.....	.....	A. N. P. Sampaio, Com'd't.
S. S. Sá da Bandeira	.....	.....	.....	F. Texeira da Silva, Com'd't.
S. S. Tejo	.....	.....	.....	F. J. Ferreina, dos Amas, Com'
.....	.....	.....	.....	.....

Note.—The originals, except for S. S. Tejo, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.12	739.6	29.56	750.7	32.0	0.0	87	SW	20	9	.....	.....	8ks	.....	.....	.....	.....	.....	Astronomical Obs.
Wilna	29.02	737.1	29.46	748.2	26.6	— 3.0	95	S	11	5	.....	.....	10	.....	.....	.....	.....	Snowing	Astronomical Obs.
Dorpat	29.26	743.1	29.51	749.5	20.1	— 6.6	94	ESE	9	4	.....	.....	2k	.....	.....	.....	.....	.....	Prof. Dr. Weihrauch
St. Petersburg	29.66	753.3	29.67	753.7	15.3	— 9.3	93	SE	13	6	.....	.....	10n	.....	.....	.....	.....	Light snow	Central Physical Obs.
Kuopio	29.26	743.2	29.60	751.9	16.0	— 8.9	94	SE	22	10	.....	.....	10	.....	.....	Blank	Blank	.....	Ch. Forsten.
Kieff	29.23	742.4	29.90	759.5	23.0	— 5.0	81	SSE	13	6	.....	.....	10ck;s;n	.....	.....	.....	.....	.....	Physical Cabinet.
Nikolaiev	30.06	763.5	30.13	765.3	27.9	— 2.3	81	S	9	4	.....	.....	7n	.....	.....	.....	.....	.....	Kurdukof.
Kertch	30.21	767.3	30.23	767.8	25.9	— 3.4	87	WNW	4	2	.....	.....	9	.....	.....	.....	.....	.....	Lagorio.
Moscow	29.48	748.9	30.08	764.1	17.2	— 8.2	91	S	7	3	.....	.....	10s	.....	.....	.....	.....	.....	Meteorological Obs.
Lugan	29.87	758.8	30.10	764.4	24.8	— 4.0	82	E	9	4	.....	.....	10	.....	.....	Blank	Blank	.....	Meteorological Obs.
Archangel	29.93	760.3	29.95	760.8	12.6	—10.8	100	SSE	13	6	.....	.....	10	.....	.....	.....	.....	.....	Ogorodnikof.
Tiflis	28.74	730.0	30.25	768.4	27.3	— 2.6	79	Calm	0	0	.....	.....	6s	.....	.....	.....	.....	Light clouds	Physical Observatory.
Astrakhan	30.43	772.9	30.35	770.8	20.8	— 6.2	51	ESE	9	4	.....	.....	10s	.....	.....	.....	.....	.....	Sebastianof.
Kasan	30.26	768.6	30.56	776 3	6.3	—14.3	87	Calm	0	0	.....	.....	4	.....	.....	.....	.....	.....	Physical Cabinet.
Orenburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Tschernischet.
Ekaterinburg	29.48	748.7	30.54	775.6	1.6	—16.9	87	Calm	0	0	.....	.....	5c;ck	.....	.....	.....	.....	.....	Meteorological Obs.
Nukuss	30.17	766.3	30.43	772.9	11.3	—11.5	75	NE	4	2	.....	.....	0	.....	.....	.....	.....	.....	
Kasaly	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Bobrof.
Tashkend	28.72	729.4	30.56	776.1	26.8	— 2.9	85	NW	2	1	.....	.....	9k	.....	.....	.....	.....	.....	Michelson.
Barnaul	30.06	763.5	30.67	778.9	—10.7	—23.7	84	Calm	0	0	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Yeniseisk	30.51	775.0	30.90	784.9	—21.6	—29.8	86	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Marks.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Usolzef.
Oorga	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Mossin.
Krotkowo*	30.02	762.6	30.54	775.8	8.4	—13.1	53	SE	2	1	.....	.....	1s	.....	.....	.....	.....	.....	Cand. Fatjanow.
Peking, (China)	30.71	780.1	30.85	783.7	17.8	— 7.9	40	Calm	0	0	.....	.....	2cs	.....	.....	.....	.....	.....	Physical Observatory
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Vladivostock	30.32	770.2	30.36	771.2	7.2	—13.8	75	NW	13	6	.....	.....	0	.....	.....	.....	.....	.....	
Nikolaievsk, on the Amoor	.....	.....	.....	.....	—27.4	—33.0	.....	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall; for Krotkowo, the barometer reduced to freezing but not to sea level. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 494.2? m., or 1,621.2? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft. * N. 53° 47′, E. 48° 34′.

SPANISH SERIES.

Furnished by the cooperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Rave, Director.
Bilbao, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Manuel de Naveran
Burgos, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Domingo Martin y Perez.
Madrid, Royal Observatory	27.83	706.8	30.14	765.6	39.9	4.4	75	S	2.2	1.00	.....	1	0	.....	.....	0	0	Light clouds	The Staff.
Murcia, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Olayo Diaz, Director.
Santiago, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.94	760.3	30.09	762.0	72.7	22.6	92	SSE	2.2	1.0	.....	4ck	8kn	WSW	.....	1.272	32.3	Cloudy	Benito Vines, S. J.
San Fernando, Naval Obs'y	30.07	763.7	30.17	766.4	49.6	9.8	63	WNW	8.5	3.8	.....	0	1	.....	NW	0	0	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de PortoRico, W. I.	.....	.....	29.97	761.1	71.2	21.8	97	Calm	0	0	.....	5k	1c?	Calm	Calm	0	0	D. clouds	Leonardo de Tejeda, Chief of Engineers.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. m. instead of 8:19 a. m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

1877—December 25.

Furnished by the cooperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—.	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.41	747.1	29.45	748.1	29.5	— 1.4	.....	S	.....	.....	4	.....	10	.....	.....	.....	.....	Snowing	
Umea	29.32	744.7	29.37	746.0	30.2	— 1.0	80	S	.....	.....	2	.....	10	.....	.....	0	0	.....	
Hernosand	29.16	740.6	29.21	741.9	33.4	0.8	85	S	.....	.....	6	.....	10	.....	.....	0	0	.....	
Stockholm	28.79	731.2	28.97	735.7	33.4	0.8	90	SSE	.....	.....	2	.....	10	.....	.....	0.079	2.0	Snowing	
Wisby	28.91	734.3	28.97	735.8	34.5	1.4	98	SSE	.....	.....	4	.....	7	.....	.....	0.063	1.6	Rain & snow	
Sub-Series.																			
Upsala	28.92	734.6	29.00	736.5	33.4	0.8	91	ESE	16.1	7.2	.....	.....	10	.....	SE	0.177	4.50	Snowing	Dr. Hildebrandsson.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the cooperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.40	721.3	29.86	758.5	41.5	5.3	75	SSW	.....	.....	1	.....	9	.....	.....	0.016	0.4	Covered	The Observatory.
Zurich	28.22	716.8	29.03	760.2	33.8	1.0	81	SW	.....	.....	1	.....	9	.....	.....	0	0	Covered	The Observatory.
.....																			
.....																			
.....																			

Note.—For Geneva the corresponding departures from the normal values are: Barometer, —6.3 mm; Thermometer, +3.6 cent.; Relative Humidity, —5 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the cooperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	30.17	766.3	42.1	5.6	68	SE	2	1.0	.....	.....	4	.....	SE	0	0	.....	The Observatory.
Fao, (Persian Gulf)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salonica	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Valona	.....	.....	29.97	761.3	54.5	12.5	.....	S	.....	.....	2	.....	5	.....	.....	0	0	Cloudy	B. Stefanidès. A. Bertrand.
Varna	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Sub-Series.																			Imperial Observatory.
Beirut, (Syria,) Lee Obs'y	29.89	759.2	30.01	762.2	59.2	15.1	58	WNW	.....	.....	2	.....	7ks	.....	W	0.17	4.3	D. clouds	Prof. C. V. A. Van Dyck

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the cooperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Brockville, Ontario	29.89	759.2	30.22	767.6	25	— 3.9	.....	E	5	2.2	.....	.....	10s	.....	NE	0	0	Cloudy	Hon. J. Ferguson.
*Chatham, N. B	30.03	762.7	30.09	764.3	25	— 3.9	90	N	3	1.3	.....	2k	8ks	N	N	0	0	Cloudy	W. R. Bigg.
Charlottetown, P. E. Island	29.92	760.0	29.96	761.0	31	— 0.6	95	N	12	5.4	.....	.....	8ks	.....	Calm	0.300	7.62	Cloudy	G. A. Blair.
Cornwall, Ontario	29.98	761.5	30.19	766.8	24.2	— 4.8	100	E	.....	.....	1	.....	Fog	.....	.....	0	0	Foggy	H. J. Cundall, C. E.
Dalhousie, N. B	.....	.....	.....	.....	23.5	— 4.7	86	W	.....	.....	1	.....	.....	.....	.....	0	0	Clear	James Smith, M. A.
Esquimault, B. C	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0	.....	H. A. Johnson.
*Father Point, Quebec	30.20	767.1	30.22	767.6	11	—11.7	99	S	10	4.5	.....	2cs	0	S	.....	0	0	Clear	W. H. Bevis.
Fredericton, N. B	30.05	763.3	30.12	765.0	22.8	— 5.4	68	W	8.0	3.6	.....	.....	10s	.....	.....	0	0	Fine	J. McWilliams.
*Fort Garry, Manitoba	29.40	746.7	30.26	768.6	34	1.1	100	Calm	0	0	.....	.....	10n	.....	.....	Inap.	Inap.	Cloudy	Prof. Harrison.
Goderich, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	James Stewart.
Granton, Ontario	28.92	734.6	30.06	763.5	34	1.1	90	E	.....	.....	1	.....	10n	.....	.....	0	0	Cloudy	H. J. Strang, M. A
*Halifax, N. S	29.77	756.1	29.91	759.7	31	— 0.6	86	N	8	3.6	.....	.....	8ks	.....	N	0.110	2.79	Fair	James Grant.
Hamilton, Ontario	29.76	755.9	30.15	765.8	36.0	2.2	91	NE	.....	.....	2	10cs	.....	SW	.....	0	0	Cloudy	F. Allison, M. A.
Heart's Content, N. F	29.71	754.6	29.94	760.5	32	0.0	100	NE	.....	.....	1	.....	10	.....	.....	0.03	0.8	Fog & mist	Geo. Dickson, M. A
*Kingston, Ontario	29.87	758.7	30.22	767.6	26	— 3.3	91	NE	2	0.9	.....	.....	10s	.....	Calm	0	0	Cloudy	E. Weedon.
Little Glace Bay, N. S	.....	.....	.....	.....	.....	.....	.....	NE	8	3.6	.....	.....	.....	.....	.....	0.17	4.3	Rain & snow	S. Woods, M. A.
*Montreal, Quebec	30.03	762.7	30.25	768.3	22	— 5.6	100	N	1	0.4	.....	.....	Fog	.....	.....	Inap.	Inap.	Foggy	C. H. Rigby.
*Parry Sound, Ontario	29.42	747.3	30.14	765.5	35	0.6	89	E	6	2.7	.....	2cs	0	E	.....	0	0	Fair	C. H. McLeod, C. E.
Peterboro, Ontario	29.39	746.5	30.19	766.8	24.3	— 4.3	85	Calm	.....	.....	0	.....	10	.....	.....	0	0	Foggy	Rev. R. Mosley
Port Dover, Ontario	29.38	746.2	30.10	764.5	35	1.7	100	NE	6	2.7	.....	.....	Fog	.....	.....	0	0	Foggy	J. F. Jeffers, B. A.
Port Hastings, N. S	29.81	757.2	29.86	758.4	33.8	1.0	.....	NW	2	0.9	.....	.....	.....	.....	.....	0	0	Foggy	H. Morgan.
Port Stanley, Ontario	29.42	747.3	30.09	764.3	36	2.2	90	E	1	0.4	.....	.....	10ks	.....	E	0	0	Fine	Peter Grant.
*Quebec, Quebec	29.94	760.5	30.29	769.4	14	—10.0	82	Calm	0	0	.....	.....	Fog	.....	.....	0	0	Cloudy	M. Payne.
*Rockliffe, Ontario	29.74	755.4	30.23	767.8	24	— 4.4	89	SE	5	2.2	.....	.....	10s	.....	SE	0	0	Dense fog	Capt. Ashe, R. N
St. John, N. B	29.91	759.7	30.08	764.0	28	— 2.2	88	N	4	1.8	.....	0	5s	.....	.....	0	0	Fair	W. H. McIntyre.
*Saugeen, Ontario	29.35	745.5	30.08	764.0	36	2.2	90	Calm	0	0	.....	.....	10n	.....	.....	0	0	Fair	G. Murdock, C. E.
Stayner, Ontario	29.31	744.5	30.12	765.0	33	0.6	94	SE	4	1.8	.....	.....	10n	.....	.....	0.05	1.3	Light rain	K. Stewart.
Stratford, Ontario	28.80	731.5	30.13	765.3	32.4	0.2	95	SE	7.5	3.4	.....	.....	10n	.....	SE	0	0	Cloudy	R. J. Cole.
*Sydney, C. B	29.82	757.4	29.85	758.2	33	0.6	90	N	7	3.1	.....	2k	8n	.....	.....	0	0	Cloudy	C. J. MacGregor, M. A.
*Toronto, Ontario	29.76	755.9	30.16	766.1	31	— 0.6	95	NE	8	3.6	.....	.....	10s	.....	N	0.20	5.1	Cloudy	T. C. Hill.
Windsor, N. S	29.91	759.7	30.01	762.2	33.0	0.6	80	N	13	5.8	.....	0	0	.....	.....	0	0	Cloudy	Magnetic Observatory.
Woodstock, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0	Fair	Prof. John E. Oram.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	31.0	— 0.6	.....	NE	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Montgomery.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	10n	.....	.....	0.02	0.5	Cloudy	John Delany
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.97	761.2	30.21	767.3	25	— 3.9	88	NW	6	2.7			10s		Calm	0	0	Cloudy	
Alpena, Michigan	29.38	746.2	30.04	763.0	39	3.9	100	Calm	0	0			Fog		Calm	0.22	5.6	Light rain	
Atlantic City, New Jersey	30.14	765.5	30.16	766.1	28	— 2.2	88	NW	2	0.9		0	0			0	0	Clear	
Augusta, Georgia	29.78	756.4	29.96	761.0	58	14.4	97	E	4	1.8			10n		E	0.52	13.2	Heavy rain	
Baltimore, Maryland	30.11	764.8	30.16	766.1	45	7.2	92	E	5	2.2			10n		E	0.02	0.5	Light rain	
Barnegat, New Jersey	30.12	765.0	30.15	765.8	29	— 1.7	89	NW	6	2.7		0	Haze		Calm	0	0	Clear	
Bismarck, Dakota	28.39	721.1	30.18	766.6	22	— 5.6	86	W	1	0.4		0	0			0	0	Clear	
Boise City, Idaho	27.07	687.6	29.95	760.7	24	— 4.4	74	Calm	0	0		8k	0	SW		0	0	Fair	
Boston, Massachusetts	30.00	762.0	30.17	766.3	29	— 1.7	67	NW	8	3.6		0	Sm'e			0	0	Clear	
Brackettville, Texas	28.91	734.3	29.96	761.0	52	11.1	86	Calm	0	0		5k	0	W		0	0	Fair	
Breckenridge, Minnesota	29.19	741.4	30.24	768.1	33	0.6	100	N	5	2.2			10s		Calm	0.01	0.3	Cloudy	
Brownsville, Texas	30.05	763.3	30.12	765.0	53	11.7	100	Calm	0	0		2c	Fog	Calm		0	0	Foggy	
Buffalo, New York	29.32	744.7	30.04	763.0	35	1.7	100	NE	6	2.7			Fog		Calm	0	0	Foggy	
Burkes, Arizona																			
Burlington, Vermont	29.97	761.2	30.25	768.3	26	— 3.3	76	N	4	1.8			10s		Calm	0	0	Cloudy	
Cairo, Illinois	29.47	748.5	29.86	758.4	56	13.3	100	N	7	3.1			Fog		N	0.20	5.1	Foggy	
Camp Grant, Arizona																			
Camp Verde, Arizona	26.73	678.9	30.22	767.6	34	1.1	100	NW					Fog		Calm	0.93	23.6	Foggy	
Campo, California																			
Cape Hatteras, N. Carolina	30.11	764.8	30.12	765.0	50	10.0	93	NE	15	6.7			10s		NE	0	0	Cloudy	
Cape Henry, Virginia	30.12	765.0	30.14	765.5	45	7.2	84	NE	12	5.4			10s		NE	0	0	Cloudy	
Cape Lookout, N. Carolina	30.07	763.8	30.09	764.3	52	11.1	86	NE	14	6.3			10s		NE	0	0	Cloudy	
Cape May, New Jersey	30.13	765.3	30.16	766.1	40	4.4	91	NE	5	2.2		8k	0	NE		0	0	Cloudy	
Charleston, South Carolina	29.94	760.5	30.00	762.0	58	14.4	93	NE	4	1.8			10s		Calm	0.33	8.4	Cloudy	
Cheyenne, Wyoming	24.01	609.8	29.94	760.5	23	— 5.0	60	SW	2	0.9			10s		Calm	0	0	Cloudy	
Chicago, Illinois	29.22	742.2	29.92	760.0	46	7.8	84	NE	6	2.7			Fog			0.45	11.4	Foggy	
Cincinnati, Ohio	29.24	742.7	29.87	758.7	57	13.9	91	E	3	1.3			10n		Calm	0.07	1.8	Light rain	
Cleveland, Ohio	29.28	743.7	30.01	762.2	44	6.7	84	E	7	3.1		5ck	2s	SE	Calm	0	0	Fair	
Concho, Texas	28.14	714.7	29.90	759.4	38	3.3	58	Calm	0	0		0	0			0	0	Clear	
Corsicana, Texas	29.61	752.1	30.09	764.3	46	7.8	85	N	5	2.2		0	0			0	0	Clear	
Davenport, Iowa	29.32	744.7	29.96	761.0	50	10.0	93	N	9	4.0			10s		Calm	0.47	11.9	Cloudy	
Deadwood, Dakota	25.48	647.2			18	— 7.8	84	NW	2	0.9		0	0			0	0	Clear	
Denison, Texas	29.28	743.7	30.10	764.5	46	7.8	77	SW	3	3.6		0	0			0	0	Clear	
Denver, Colorado	24.80	629.9	30.02	762.5	22	— 5.6	72	Calm	0	0		5c	0	Calm		0	0	Fair	
Detroit, Michigan	29.32	744.7	30.00	762.0	40	4.4	100	E	4	1.8			10n		Calm	0.02	0.5	Light rain	
Dodge City, Kansas	27.54	699.5	29.94	760.5	32	0.0	89	N	4	1.8		0	5s		N	0	0	Fair	
Dubuque, Iowa	29.32	744.7	30.03	762.7	45	7.2	92	N	8	3.6			Fog		N	0.42	10.7	Foggy	
Duluth, Minnesota	29.48	748.8	30.18	766.6	36	2.2	85	NW	8	3.6			10s		NW	0	0	Cloudy	
Eagle Pass, Texas	29.27	743.4	30.02	762.5	49	9.4	93	Calm	0	0		0	Fog		Calm	0	0	Foggy	
Eastport, Maine	29.97	761.2	30.04	763.0	27	— 2.8	77	NW	11	4.9		5ck	2s	NW	NW	0	0	Fair	
Erie, Pennsylvania	29.31	744.5	30.03	762.7	42	5.6	91	NE	4	1.8		5c	Fog	N		0	0	Cloudy	
Escanaba, Michigan	29.42	747.3	30.09	764.3	41	5.0	82	N	10	4.5			10n		N	0.48	12.2	Cloudy	
Florence, Arizona	28.43	722.1	30.03	762.7	45	7.2	60	E					10s		E	0.76	19.3	Cloudy	
Fort Bayard, New Mexico	24.01	609.8	30.01	762.2	39	3.9	82	Calm	0	0		0	5ks		Calm	0	0	Fair	
Fort Craig, New Mexico	25.45	646.4			31	— 0.6	79	SW	2	0.9			10ks		SW	0	0	Cloudy	
Fort Gibson, Indian Ter	29.47	748.5	30.02	762.5	42	5.6	83	Calm	0	0		0	2s		N	0.27	6.9	Fair	
Fort Griffin, Texas	28.81	731.8	30.11	764.8	44	6.7	84	Calm	0	0		0	0			0	0	Clear	
Fort St. Michael, Alaska																			
Fort Sill, Indian Territory	28.86	733.0	30.01	762.2	41	5.0	91	NW	6	2.7		0	0			0	0	Clear	
Galveston, Texas	30.04	763.0	30.08	764.0	57	13.9	87	W	4	1.8		0	0			0	0	Clear	
Grand Haven, Michigan	29.34	745.2	29.99	761.7	46	7.8	100	NE	10	4.5			10n		Calm	0.29	7.4	Light rain	
Indianapolis, Indiana	29.10	739.1	29.86	758.4	56	13.3	93	SE	3	1.3			10n		SE	0.19	4.8	Light rain	
Indianola, Texas	30.10	764.5	30.13	765.3	63	17.2	100	NW	6	2.7			Fog		Calm	0	0	Foggy	
Jacksboro, Texas	28.95	735.3	30.12	765.0	42	5.6	83	N	1	0.4		0	0			0	0	Clear	
Jacksonville, Florida	29.91	759.7	29.94	760.5	66	18.9	90	Calm	0	0			10s		Calm	1.36	34.5	Cloudy	
Keokuk, Iowa	29.28	743.7	29.90	759.4	47	8.3	92	N	10	4.5			10n		Calm	0.57	14.5	Light rain	
Key West, Florida	29.94	760.5	29.98	761.5	73.0	22.6	90	Calm	0	0			10s		W	0.10	2.5	Cloudy	
Kittyhawk, North Carolina	30.10	764.5	30.12	765.0	49	9.4	93	NE	12	5.4			10s		NE	0	0	Cloudy	
Knoxville, Tennessee	29.93	734.8	29.93	760.2	52	11.1	93	NE	8	3.6			10n		S	0.79	20.1	Misting	
La Crosse, Wisconsin	29.35	745.5	30.10	764.5	42	5.6	74	N	8	3.6			10s		N	0	0	Cloudy	
La Mesilla, New Mexico	26.03	661.2	30.18	766.6	28	— 2.2	71	Calm	0	0		1c	0	Calm		0	0	Clear	
Laredo, Texas					53	11.7	86	Calm	0	0		0	0			0	0	Clear	
Leavenworth, Kansas	29.18	741.2	30.05	763.3	37	2.8	100	N	12	5.4			Fog		N	0	0	Foggy	
Los Angeles, California	29.65	753.1	30.00	762.0	44	6.7	84	NE	9	4.0			10s		S	0.47	11.9	Cloudy	
Louisville, Kentucky	29.31	744.5	29.86	758.4	57	13.9	94	SE	4	1.8			Fog		Calm	0.76	19.3	Threatening	
Lynchburg, Virginia	29.41	747.0	30.10	764.5	48	8.9	85	NE	4	1.8			10s		Calm	0.04	1.0	Cloudy	
Maricopa Wells, Arizona					38	3.3	81	Calm					10s		SW	1.27	32.3	Cloudy	
Marquette, Michigan	29.66	753.4	30.08	764.0	40	4.4	73	NW	4	1.8			10s		Calm	0.08	2.0	Cloudy	
Mason, Texas	28.40	721.3	30.20	767.1	44	6.7	92	Calm	0	0		0	0			0	0	Clear	
Memphis, Tennessee	29.56	750.8	29.83	758.9	54	12.2	93	Calm	0	0			10s		N	0.18	4.6	Cloudy	
Milwaukee, Wisconsin	29.31	744.5	30.01	762.2	43	6.1	100	N	12	5.4			10n; fg			0.87	22.1	Light rain	
Mobile, Alabama	29.94	760.5	29.98	761.5	53	11.7	82	Calm	0	0		0	0			0.09	2.3	Clear	
Montgomery, Alabama	29.70	754.4	29.94	760.5	57	13.9	87	S	5	2.2		0	Fog		Calm	2.06	52.3	Clear	
Morgantown, West Virginia	28.96	735.6	30.03	762.7	42	5.6	74	Calm	0	0			Fog			0	0	Foggy	
Mt. Washington, N. H.	23.71	602.2	30.07	763 8	17	— 8.3	51	N	36	16.1		0	2s		N	0	0	Clear	
Nashville, Tennessee	29.34	745.2	29.87	758.7	56	13.3	93	E	2	0.9			10s		SW	0.67	17.0	Cloudy	
New Haven, Connecticut	30.04	763.0	30.17	766.3	30	— 1.1	59	NE	10	4.5		0	0			0	0	Clear	
New London, Connecticut	30.12	765.0	30.17	766.3	28	— 2.2	77	N	6	2.7		0	Haze		Calm	0	0	Clear	
New Orleans, Louisiana	29.95	760.7	30.01	762.2	57	13.9	81	W	4	1.8		0	0			0	0	Clear	
Newport, Rhode Island	30.09	764.3	30.15	765.8	33	0.6	70	N	5	2.2		0	0			0	0	Clear	
New York, New York	29.98	761.5	30.16	766.1	35	1.7	70	NE	4	1.8		0	Fog			0	0	Clear	
Norfolk, Virginia	30.09	764.3	30.15	765.8	45	7.2	92	E	8	3.6			10s		E	0	0	Cloudy	
North Platte, Nebraska	27.23	691.6	29.96	761.0	23	— 5.0	85	E	3	1.3		0	0			0	0	Clear	
Olympia, Washington Ter.	29.94	760.5	29.98	761.5	40	4.4	84	E	3	1.3			10s		Calm	0.08	2.0	Cloudy	
Omaha, Nebraska	29.02	737.1	30.15	765.8	30	— 1.1	100	N	12	5.4			Fog		Calm	0	0	Foggy	
Oswego, New York	29.83	757.7	30.16	766.1	35	1.7	80	E	6	2.7			Fog		Calm	0	0	Foggy	
Pembina, Dakota	29.37	746.0	30.24	768.1	29	— 1.7	88	W	3	1.3			10s		Calm	Inap.	Inap.	Cloudy	
Philadelphia, Pennsylvania	30.12	765.0	30.17	766.3	33	0.6	89	N	10	4.5			10s		NW	0	0	Cloudy	
Phœnix, Arizona																			
Pike's Peak, Colorado	17.67	448.8	29.88	758.9	5	—15.0	75	S	36	16.1		0	0			0	0	Clear	
Pioche, Nevada	23.86	606.0	29.63	752.6	20	— 6.7	100	S	5	2.2			10s		Calm	0.17	4.3	Cloudy	
Pittsburg, Pennsylvania	29.19	741.4	30.01	762.2	42	5.6	91	E	5	2.2			10s		Calm	0	0	Cloudy	
Port Huron, Michigan	29.32	744.7	30.00	762.0	38	3.3	81	Calm	0	0		2cs	2ks; fg	Calm	Calm	0	0	Fair	
Portland, Maine	30.10	764.5	30.15	765.8	30	— 1.1	68	N	10	4.5		0	Haze			0	0	Clear	
Portland, Oregon	29.94	760.5	30.04	763.0	35	1.7	90	NW	5	2.2		0	0			0	0	Clear	
Prescott, Arizona	24.68	626.9	30.04	763.0	15	— 9.4	48	S				0	5s		S	0.63	16.0	Fair	
Punta Rassa, Florida	29.96	761.0	29.97	761.2	69	20.6	84	S	8	3.6		5k	0	Calm		Inap.	Inap.	Fair	
Red Bluff, California	29.62	752.3	29.98	761.5	45	7.2	84	N	3	1.3			10n		Calm	0.01	0.3	Light rain	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Rochester, New York	29.48	748.8	30.12	765.0	32	0.0	100	E	4	1.8			Fog		Calm	0	0	Foggy	
Roseburg, Oregon	29.40	746.7	29.99	761.7	38	3.3	81	N	4	1.8			10s		Calm	0	0	Cloudy	
Sacramento, California	29.90	759.4	29.99	761.7	47.5	8.6	88	SE	4	1.8			10ks		W	0	0	Cloudy	
St. Louis, Missouri	29.31	744.5	29.88	758.9	55	12.8	100	E	2	0.9			10n		Calm	1.03	26.2	Light rain	
St. Marks, Florida	29.04	760.5	29.95	760.7	61	16.1	100	Calm	0	0			Fog			1.28	32.5	Foggy	
St. Paul, Minnesota	29.28	743.7	30.14	765.5	35	1.7	84	N	8	3.6			10s		Calm	0	0	Cloudy	
St. Paul's Island, Alaska																			
Salt Lake City, Utah	25.46	646.7	29.79	756.7	42	5.6	34	E	6	2.7			10s		Calm	0	0	Cloudy	
San Antonio, Texas	29.39	746.5	29.99	761.7	49	9.4	93	Calm	0	0		0	0			0	0	Clear	
San Diego, California	29.96	761.0	30.04	763.0	46	7.8	76	E	8	3.6		0	0			0.56	14.2	Clear	
Sandusky, Ohio	29.31	744.5	29.99	761.7	44	6.7	84	E	12	5.4		4c	Fog	Calm	Calm	0	0	Fair	
Sandy Hook, New Jersey	30.13	765.3	30.15	765.8	35	1.7	89	N	5	2.2		0	Haze			0	0	Clear	
San Francisco, California	29.90	759.4	29.97	761.2	47	8.3	85	SE	4	1.8		10cs	0	NW		0	0	Cloudy	
Santa Fé, New Mexico	29.24	690.3	29.78	756.4	31	— 0.6	68	NW	8	3.6		8k	0	NW		0	0	Cloudy	
Savannah, Georgia	29.67	753.7	29.96	761.0	62	16.7	88	Calm	0	0			10s;fg		Calm	0.42	10.7	Cloudy	
Shreveport, Louisiana	29.81	757.2	30.03	762.7	48	8.9	78	W	4	1.8		0	0			0	0	Clear	
Smithville, North Carolina	30.03	762.7	30.06	763.5	55	12.8	93	NE	10	4.5			10s		NE	0.29	7.4	Cloudy	
Springfield, Massachusetts	29.98	761.5	30.12	765.0	26	— 3.3	64	Calm	0	0		0	0			0	0	Clear	
Stockton, Texas	26.09	685.5	29.99	761.7	42	5.6	91	Calm	0	0		0	0			0	0	Clear	
Thatcher's Island, Mass.	30.09	764.3	30.15	765.8	35	1.7	70	N	12	5.4		1k	0	N		0	0	Clear	
Toledo, Ohio	29.81	744.5	30.00	762.0	40	4.4	100	NE	14	6.3			Fog		NE	0	0	Foggy	
Tucson, Arizona					34	1.1	61	SE				8k	0	SE		0.48	12.2	Fair	
Tybee Island, Georgia	29.93	760.2	29.96	761.0	58	14.4	100	NE	5	2.2			10s		E	1.00	25.4	Cloudy	
Umatilla, Oregon	29.80	756.9			35	1.7	90	Calm	0	0			10s		Calm	Inap.	Inap.	Cloudy	
Vicksburg, Mississippi	29.71	754.6	29.97	761.2	55	12.8	74	SW	6	2.7			10s		W	0	0	Cloudy	
Virginia City, Montana	24.20	614.7	29.68	753.9	15	— 9.4	66	Calm	0	0		0	0			0	0	Clear	
Visalia, California	29.65	753.1	30.03	762.7	40	4.4	100	E	1	0.4		5ck	5s	NW	NW	0	0	Cloudy	
Washington, D. C.	30.04	763.0	30.15	765.8	45.5	7.5	100	SE	2	0.9			10s;fg		SE	0.05	1.3	Cloudy	
Wickenburg, Arizona					32	0.0	79	NW				0	8ks		Calm	1.14	29.0	Fair	
Wilmington, N. Carolina	29.98	761.5	30.06	763.5	50	10.0	86	NE	11	4.9			10s		NE	0.25	6.3	Cloudy	
Winnemucca, Nevada	25.45	646.4	29.81	757.2	24	— 4.4	87	Calm	0	0		10k	0	Calm		0	0	Cloudy	
Wood's Holl, Mass.	30.09	764.3	30.15	765.8	32	0.0	79	N	2	0.9		Haze	0			0	0	Clear	
Yankton, Dakota	28.91	734.3	30.27	768.8	29	— 1.7	88	Calm	0	0			Fog		Calm	0	0	Foggy	
Yuma, Arizona	29.97	761.2	30.14	765.5	46	7.8	85	NE	6	2.7		2c	0	Calm		0.25	6.3	Fair	
SUB-SERIES.																			
York Factory, B. A.	30.14	765.5	30.19	766.8	14.5	— 9.7	91	SW	12	5.4		2cs	0	N		0	0	Fair	J. Fortescue, W. Wood.
Havana, Cuba, W. I.	29.98	761.5	30.00	762.0	74	23.3	85	Calm	0	0		8ck	4ks	W		1.31	33.3	Cloudy	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.14	765.5	30.15	765.8	75	23.9	90	Calm	0	0		2c	2s	SE	SE	0	0		James Gall.
Navassa, W. I.	29.92	760.0	30.00	762.0	79	26.1		NE	6	2.7						0	0	Fair	F. M Everett.
St. Thomas, W. I.																			G. O. Gellich.
Paramaribo, D. Guiana, S. A.			29.98	761.5	83	28.3	79	E			2	4c	5k	E		0.200	5.08	Fair	C. J. Hering.
Batavia, Dutch Guiana, S. A.	30.02	762.6	30.03	762.8	84.6	29.2										0.689	17.50	Cloudy	Dr. H. Groot.
Medellin, Colombia, S. A.	25.23	640.8			67.4	19.7	82	NW			1	0	7ks			0	0	Cloudy	Thomas Herran.
Honolulu, Oahu, H. I.																			Daniel Smith.
Makawao, Maui, H. I.																			F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo; for Batavia, the barometer reduced to freezing but not to sea-level. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.6 m.; Concho, 1, 760 ft., or 533.4 m.; Deadwood, (?); Denver, 5,152 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,110.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Ploche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.67 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington 6.36 in.; Pike's Peak, 12.21 in; Ploche, 5.77 in.; Prescott, 5.86 in.; Salt Lake City, 4.33 in.; Santa Fe, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation

STATIONS AND VESSELS.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard Mare Island, Cal.	29.92	760.0	46	7.8	45	7.2	84	NE	6	2.7	.....	.....	4k	.....	N; W	0	0	.....	.....	Pleasant.....	
Navy Yard, Pensacola, Fla.	30.07	763.8	.....	.....	59	15.0	88	WSW	5	2.2	.....	.....	4	.....	.....	0	0	.....	.....	D. clouds....	
Navy Yard, Portsmouth, N.H	30.20	767.1	69	20.6	24	— 4.4	61	NW	.....	.....	1	.....	.....	.....	.....	0	0	.....	.....	Clear	
Naval Hospital, Yokohama, Japan.....	29.93	760.2	49	9.4	44	6 7	60	N	.....	.....	5	.....	8k	.....	SW	0	0	.....	.....	Cloudy..	
Alliance, Smyrna, Turkey.....	30.18	766.6	52	11.1	49	9.4	63	NW	.....	.....	0–1	.....	1	.....	Calm	.....	.....	.....	.....	Pleasant.....	
Ashuelot. Shanghai, China.....	30.64	778.2	42	5.6	36	2.2	80	NNW	.....	.....	3	.....	10	.....	Calm	.....	.....	.....	.....	D. clouds. ...	
Canonicus, New Orleans, La.....	29.99	761.7	47	8.3	57	13.9	81	ESE	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	Clear.....	
Colorado, New York, N. Y.....	30.14	765.5	33	0.6	33	0.6	80	NNE	.....	.....	2	.....	2	.....	N	0	0	.....	.....	Dense fog....	
Despatch, Constantinople, Turkey.	30.30	769.6	73	22.8	48	8.9	70	NE	.....	.....	1	.....	1	.....	Calm	.....	.....	.....	.....	Hazy.....	
Essex, S. 11° 20′, E. 5° 41′.....	29.88	758.9	77	25.0	77	25.0	91	SSW	.....	.....	2	.....	8	.....	.....	.....	.....	Long	SSW	D. clouds.....	
Franklin, Norfolk, Va.....	30.36	771.1	48	8.9	47	8.3	85	E	6	2.7	.....	.....	.....	.....	W	0	0	.....	.....	Cloudy.....	
Guard, Lisbon, Portugal.....	30.18	766.6	59	15.0	59	15.0	70	NNE	.....	.....	1	.....	2	.....	NNE	.....	.....	.....	.....	Hazy.....	
Lackawana, Mare Island, Cal.....	29.82	757.4	.....	.....	50	10.0	79	NW	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	D clouds....	
Marion, Villefranche, France.....	29.70	754.4	54	12.2	54	12.2	74	SE	.....	.....	1	.....	6	.....	.....	0	0	Smooth	S	D. clouds.....	
Michigan, Erie, Pa.....	29.57	751.1	31	27.2	41	5.0	74	NE	.....	.....	1	.....	10	.....	NE	.....	.....	.....	.....	Cloudy.....	
Monocacy, Hong-Kong, China.....	30.12	765.0	64	17.8	57	13.9	75	N&W	.....	.....	2	.....	9	.....	S	0	0	.....	.....	D. clouds.....	
New Hampshire, Port Royal, S.C.....	30.14	765.5	.....	.....	60	15.6	100	ENE	6	2.7	.....	.....	0	.....	.....	1.07	27.2	.....	.....	D. clouds....	
Omaha, Valparaiso, Chili.....	30.04	763.0	65	18.3	62.5	16.9	70	Calm	0	0	.....	.....	0	.....	.....	0	0	.....	.....	Pleasant.....	
Onward, Callao, Peru.....	30.00†	762.0†	78	25.6	76	24.4	82	S	.....	.....	4	.....	10	.....	.....	.....	.....	Long	W	Hazy.....	
Ossipee, Norfolk, Va.....	30.20	767.1	68	20.0	48	8.9	92	ENE	.....	.....	2	.....	10	.....	S	.....	.....	.....	.....	Overcast.....	
Palos, Shanghai, China.....	30.60	777.2	43	6.1	35	1.7	80	NNW	.....	.....	4	.....	10	.....	N&W	.....	.....	.....	.....	Misty....	
Plymouth. Aspinwall.....	30.01	762.2	81	27.2	81	27.2	100	NW	.....	.....	2	.....	8	.....	.....	.....	.....	Smooth	NE	Rainy...	
Powhatan, Norfolk, Va.....	.....	.....	.....	.....	48	8.9	92	SE	4.8	2.1	.....	.....	10	.....	.....	0	0	.....	.....	Overcast.....	
Ranger, Shanghai, China.....	30.75	781.0	.....	.....	40	4.4	73	N	.....	.....	2	.....	10	.....	Calm	.....	.....	.....	.....	Overcast.....	
Rio Bravo, Brownsville, Texas.....	29.98	761.5	.....	.....	54	12.2	??	NE	.....	.....	1	.....	5	.....	NW	.....	.....	.....	.....	Foggy	
Santee, Annapolis, Md.....	30.22	767.6	65	18.3	45	7.2	92	S	.....	.....	1	.....	10	.....	S	0.01	0.3	.....	.....	Light fog.....	
Saratoga, Norfolk, Va.....	.....	.....	.....	.....	51	10.6	100	ENE	.....	.....	1	.....	10	.....	E	.....	.....	.....	.....	Rainy.....	
St. Louis, League Island, Pa	30.03	762.7	35	1.7	35	1.7	90	NE	3	1.3	.....	.....	9	.....	NW	0	0	.....	.....	Foggy	
Swatara, Norfolk, Va.....	30.24	768.1	.....	.....	50	10.0	79	ENE	.....	.....	1	.....	10	.....	N&E	.....	.....	.....	.....	D. clouds.....	
Tennessee, Shanghai, China.....	30.67	779.0	77	25.0	38	3.3	81	NW	.....	.....	4	.....	10	.....	.....	0	0	.....	.....	D. clouds.....	
Trenton, Villefranche, France.....	29.85	758.2	.....	.....	52	11.1	66	Calm	0	0	.....	.....	9	.....	Calm	0	0	.....	.....	D. clouds.....	
Vandalia, Palermo, Sicily.....	29.98	761.5	57	13.9	55	12.8	87	SW	.....	.....	1	.....	10	.....	WSW	.....	.....	.....	.....	Drizzling.....	
Wabash, Boston, Mass.....	30.17	766.3	43	6.1	29	— 1.7	.....	NNW	6	2.7	.....	.....	0	.....	.....	0	0	.....	.....	Blue sky.....	
Wyoming, Washington, D. C.....	30.64	778.2	.....	.....	47	8.3	.....	Calm	.....	.....	0	.....	10	.....	.....	.....	.....	.....	.....	Overcast.....	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. The position given for the Plymouth is that at noon, local time, instead of that at 7:35 a. m., Washington time.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Character.	Direction from—		

PACIFIC MAIL S. S. CO. MARINE SERIES.

Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents.

S. S. Alaska																			
S. S. China																			
S. S. City of New York																			Capt. Berry.
S. S. City of Panama																			Capt. Cobb.
S. S. City of Peking, N. 33° 50′, E. 142° 24′			30.02*	762.6*	58	14.4	88	W			6		10		W	Mod'ate	W	Raining	Capt. Seabury.
S. S. City of Sydney																			Lt. Z. L. Tanner, U.S.N.
S. S. City of Tokio, N. 26° 54′, E. 124° 06′			30.33	770.4	58	14.4		NNE			8		10		NE	Rough	NE	Overcast	Capt. Dearborn.
S. S. Colima																			Capt. Maury.
S. S. Costa Rica																			Capt. Searle.
S. S. Dakota																			Capt. Whitebury.
S. S. Georgia																			Capt. Morse.
S. S. Grenada																			Capt. Cavarly.
S. S. Wilmington																			Capt. Connolly.
																			Capt. Austin.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. *Aneroid.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.

S. S. Belgic, N. 39° 34′, E. 158° 23′			29.77*	756.1*				WNW			7		Heavy		WNW	Heavy	NW	Hailing	Capt. John Metcalf.
S. S. Gaelic, Hong-Kong, China			30.21†	767.3†	68	17.2	83	NE			4		8					D. clouds	Capt. W. H. Kidley
S. S. Oceanic, N. 30° 18′, W. 155° 30′			30.11	764.8	63	17.2	83	WNW			2		2		NW	Swell	NW	D. clouds	Capt. H. Parsell.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. *Corrected for temperature and elevation; instrumental error not known. †Aneroid.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig																			Capt. Undütsch.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds.

UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Lo'wr	Upper.	Lower.	Character	Direction From—		
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second	0—10.	0—10.	0—10.	From—	From—				
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, N. 47° 44′, W. 48° 24′			29.79*	756.7*	35	1.7	??	SE			6		7		ESE	Heavy	SE	Foggy	Captain Sargent.
S. S. Ohio, N. 50° 58′, W. 20° 21′			29.87	758.7	52	11.1	93	W			6		6		W	Rough	W	Fair	Captain Morrison.
S. S. Pennsylvania																			Captain Harris.

Note.—The originals give the barometer as read off; wind-force by the scale 0 to 12. * Aneroid

RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

S. S. Nederland																			Capt' Randle.
S. S. Switzerland																			Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

S. S. Hibernian																			
S. S. Scandinavian, N. 48° 44′, W. 52° 52′			29.67	753.6	27	— 2.8		NE			3		10		NE	Smooth	NE	Hazy	Capt. W. Richardson.

Note.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, Boothbay, Maine			30.19	766.8	27	— 2.8	88	NNE	5	2.2			0					Clear	Capt. James Jorgensen.

Note.—The originals for the schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4.

Collated at the Office of the Chief Signal Officer of the Army, Washington, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assgd.) Chief Signal Officer. U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON DECEMBER 26, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.

1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:38 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.

1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Barometer: Corrected for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours	.....	.....	30.23	767.9	63.0	17.2	52	NW	.....	.....	1	.....	1	.....	.....	0	0	Very fair.....	Michel.
Algiers	.....	.....	30.01	762.2	60.1	15.6	68	NW	.....	.....	3	.....	3	.....	.....	0	0	Pretty fair..	Peter.
La Calle	.....	.....	29.90	760.0	52.9	11.6	78	W	.....	.....	3	.....	8	.....	.....	0.236	6.0	Very cloudy	Fleury.
Tunis	.....	.....	29.84	758.0	56.5	13.6	71	W	.....	.....	3	.....	8	.....	.....	0.024	0.6	Very cloudy	Jacques.
Sfax	.....	.....	30.00	762.0	55.4	13.0	.....	SW	.....	.....	1	.....	1	.....	.....	0	0	Very fair.....	Husson.
Saida	.....	.....	30.14	765.5	51.1	10.6	70	WNW	.....	.....	3	.....	2	.....	.....	0	0	Fair	Millot.
Tebessa	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Bassières.
Geriville	.....	.....	30.17	766 4	41.0	5.0	94	ENE	.....	.....	4	.....	6	.....	.....	0	0	Cloudy.....	Lemaillot.
Laghouat	.....	.....	30.08	764.0	51.8	11.0	63	W	.....	.....	1	.....	1	.....	.....	0	0	Clear.	Guyot.
Biskra	.....	.....	30.04	763.0	61.2	16.2	56	NNW	.....	.....	1	.....	0	.....	.....	0	0	Clear.....	Kuntz.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 880 ? meters, or 2,919.9 ? feet; Tebessa, 1,088 ? m., or 3,569.4 ? ft.; Geriville, 1,360 ? m.; or 4,461.7 ? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

STATIONS.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Barometer: Corrected for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Agram	29.01	736.8	29.58	751.3	31.6	— 0.2	90	Calm	.....	.....	0	.....	10	.....	.....	Inap.	Inap.	.....	Prof. Ivan Stozir
Cracow, I. R. Observatory	28.85	732.8	29.65	753.2	25.2	— 3.8	89	W	.....	.....	1	.....	6	.....	.....	0	0	.....	Dr. Wierzbiski.
Eperies	28.73	729.7	29.65	753.1	27.9	— 2.3	96	Calm	.....	.....	0	.....	10	.....	.....	0.278	7.05	.....	Julius Mikolik.
Gratz	28.92	719.4	29.02	752.3	30.7	— 0.7	83	W	.....	.....	2	.....	7	.....	.....	0.173	4.4	.....	Andreas Rospini.
Hermannstadt	28.17	715.5	29.01	752.2	39.6	4.2	51	SE	.....	.....	4	.....	4	.....	.....	0	0	.....	Prof. Reissenberger.
Kremsmünster	28.06	712.8	29.48	748.7	20.5	— 6 4	84	Calm	.....	.....	0	.....	0	.....	.....	0.181	4.6	.....	Prof. C. Wagner.
Lemberg	28.63	727.1	29.65	753.2	29.8	— 1.2	98	NE	.....	.....	1	.....	10	.....	.....	0.181	4.6	.....	Dr. T. Stanecki.
Pola	29.39	746.4	29.50	749.3	43.0	6.1	87	E	.....	.....	1	.....	10s	.....	.....	0.465	11.80	.....	I.R.Hydrographic Office.
Szathmar	29.19	741.5	29.67	753.6	37.8	3.2	59	SE	.....	.....	3	.....	10	.....	.....	0	0	.....	Johann Tamas, S. J.
Szegedin	29.24	742.7	29.53	750.0	33.8	1.0	87	SE	.....	.....	1	.....	8	.....	.....	0.067	1.70	.....	Karl Stancel.
Trieste	29.43	747.6	29.54	750.2	34.0	1.1	89	ENE	.....	.....	3	.....	10	.....	.....	0.528	13.4	Snowing.....	P. Busin.
Vienna	28.84	732.4	29.56	750.7	29.5	— 1.4	80	Calm	.....	.....	0	.....	3	.....	.....	0	0	.....	I. R. Central Met. Obs'y.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 348.5 meters, or 1,126.0 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

STATIONS.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Barometer: Corrected for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Arlon	27.64	707.0	29.38	746.2	31.1	— 0.5	98	SW	.....	.....	3	.....	10	.....	.....	0.307	7.8	.....	Prof. M. Passau.
Brussels	29.08	738.6	29.28	743.8	36.1	2.3	92	SW	.....	.....	5	.....	10	.....	W	0.165	4.20	.....	Royal Observatory.
Furnes	29.30	744.1	29.32	744.7	37.8	3.2	86	NW	.....	.....	4	.....	8	.....	.....	0	0	.....	M. E. de Cae.
Maeseyck	29.13	740.0	29.26	743.3	34.0	1.1	93	W	.....	.....	4	.....	10	.....	.....	0.142	3.6	.....	M. Pierrot.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

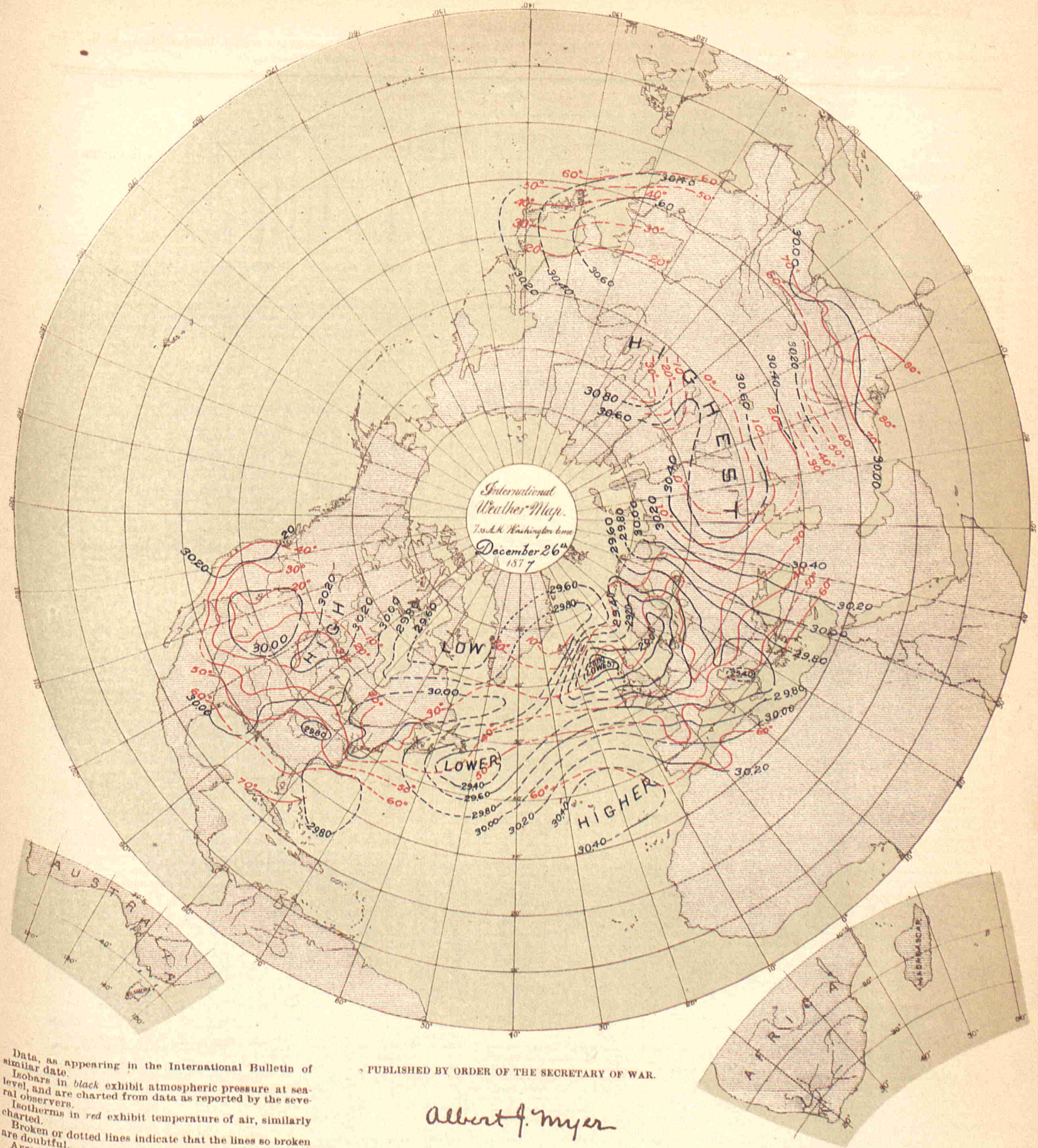
Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Aberdeen	28.88	733.5	28.98	736.1	31.6	— 0.2		SW	14	6.3			6			Blank	Blank	D. clouds	W. Boswell.
Ardrossan	29.13	739.9	29.15	740.4	39	3.9		WNW			7		5					Snow-sq'lls.	William McNeil.
Armagh, Observatory			29.32	744.7	32.3	0.2		W	15	6.7			8			Blank	Blank	D. clouds	S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)			29.28	743.7	38.0	3.3		WNW	47	21.0			6					D. clouds	John Hartnup.
Birr Castle, (Parsonstown)			29.52	749.8	37.0	2.8		W			2		4					D. clouds	J. Dreyer.
Bradford, Yorkshire	28 77	730.7	29.16	740.7	34.1	1.2		SW			5		5			0.14	3.6	D. clouds	J. McLandsborough.
Bridgetown, (Barbados)	29.93	760.2	29.96	761.0	81	27.2		E			1		4					Raining	Pvt. G. W. Roberts, A.
Cambridge, Observatory			29.28	743.7	37.0	2.8		SW			1		5			Blank	Blank	D. clouds	H. Todd. [H. C.
Cardington			29.33	745.0	36.4	2.4		W			2		3			Blank	Blank	D. clouds	John McLaren.
Chatham, School M. E	29.22	742.2	29.35	745.5	38.2	3.4		W			3		6					Blue sky	Lt. W. G. Morris, R. E.
Dartmoor	28.08	713.2	29.58	751.3	35.8	2.1		NW			5		6					Snowing	Alexander Watt.
Davos Platz (Switzerland)																			Francis Redford, M. A.
Donaghadee	29.27	743.4	29.30	744.2	33	0.6		WNW			5		5					D. clouds	J. Mac Gowan.
Dover	29.34	745.2	29.36	745.7	38	3.3		W			3		3					⅛ clouded	J. Costello.
Eccles, (near Manchester)			29.27	743.4	33.0	0.6		N	10.2	4.6			9					Hailing	Thomas Mackereth.
Falmouth, Observatory	29.37	746.0	29.60	751.8	43.5	6.4		WNW			4		7					Overcast	The Staff.
Fort Napier, (Natal)	27.45	697.2	29.04	752.8	89.4	31.9		E			2		5					D. clouds	Pvt. G. Salmon, A. H. C
Free Town, (Sierra Leone)			29.85	758.2	88	31.1		Calm ?			1?		3					D. clouds	
Galway, Queen's College																			Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	30.19	766.8	30.24	768.1	67.2	14 0		NW			4		6					D. clouds	Corpl. C. Aitken, A.H.C.
Glasgow, Observatory	29.92	734.6	29.12	739.6	34.9	1.6		WNW			4		3					Blue sky	D. G. Maclean.
Great Yarmouth	29.20	741.7	29.21	741.9	34	1.1		WNW			4		5					Misty	G. T. Watson.
Greenwich, Royal Obs'y	29.18	741.2	29.35	745.5	38.0	3.3		W			5		1					Blue sky	The Staff, for G. B. Airy.
Guernsey	29.33	745.0	29.56	750.8	43.5	6.4		NW			6		8					Squally	Dr. S. E. Hoskins, F.R.S.
Helston			29.63	752.6	46	7.8		NW			2		4c			0.78	19.8	Fine	M. P. Moyle.
Holyhead	29.33	745.0	29.38	746.2	39	3.9		W			6		3					D. clouds	John Tilston.
Jersey	29.29	744.0	29.59	751.6	42.2	5.7		NW			6		8			Blank	Blank	Squally	J. Fisher.
Kew, Observatory			29.36	745.7	39.1	3.9		W	23	10.3			6					D. clouds	The Staff.
Kingstown	29.40	746.7	29.43	747.5	37	2.8		WNW			5		5					D. clouds	George Mitchell.
Leicester, Museum			29.81	744.5	34.2	1.2		W			3							Blue sky	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.79	756.7	29.87	758.7	58.2	14.6		NW			3		6					D. clouds	Sgt. Fred. Travis, A. H.
Nairn	28.85	732.8	28.94	735.1	34	1.1		W			1		10					Overcast	W. D. Penny. [C.
Nassau, (Bahamas)			29.90	759.4	72.5	22.5		NW			1		10					Drizzling	C. S. Duncombe.
Nottingham, Observatory	29.09	738.9	29.29	744.0	34.3	1.3		WNW			6		10n		WNW	0.131	3.33	Snowing	E. J. Lowe, F. R. S
Oscott, St. Mary's College	28.80	731.5	29.33	745.0	37.5	3.1		W			4–5		9					D. clouds	Rev. Stephen Whitty
Oxford, Radcliffe Obs'y			29.38	746.2	37	2.8		W			1		3					Blue sky	Mr. Lucas.
Plymouth	29.46	748.3	29.54	750.3	42.8	6.0		NW			3		6					D. clouds	John Merrifield.
Roche's Point	29.55	750.6	29.60	751.8	41	5.0		WNW			4		5					⅛ clouded	W. Kennedy.
Saint Ann's Head			29.51	749.5	42	5.6		NW			4		5					Squally	John C. Walker.
Sandwick Manse, (Orkneys.)			28.84	732.5	33.6	0.9		SSE	33	14.8			10					Overcast	Rev. C. Clouston, L.L. D.
Scutari, Cemetery, (Turkey)			29.87	758.7	48.4	9.1		SE			2		9			Blank	Blank	D. clouds	Sergt. W. H. Lyne.
Sheffield	29.01	736.8	29.29	744.0	34.6	1.4		SW			4		9			0.12	3.0	Hail & snow	W. F. Cooper.
Silloth Rectory	29.16	740.7	29.18	741.2	38.1	3.4	62	N			3		0			0	0	Blue sky	Rev. F. Redford, M. A.
Stonyhurst, Observatory					33.0	0.6		W			3		10					Snow-sq'lls.	Rev. S. J. Perry.
Stornoway, Lewis C., (Hebr.)			28.91	734.3	33	0.6		NW			7		10					Snowing	John Smith.
Stratfield Turgiss	29.17	740.9	29.39	746.5	38.8	3.8		W			2		0					Squally	Rev. C. H. Griffith, F.M.S.
Thurso			28.82	732.0	33	0.6		SSW			2		7					D. clouds	John Trotter.
Truro, Royal Institution			29.55	750.6	43	6.1		W			7		10					Raining	W. Newcombe.
Valencia, Observatory			29.66	753.4	44.4	6.9		WNW	26	11.6			6					D. clouds	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)																			Henry Mercer.
Cape Good Hope, Obs'y	29.99	761.7	30.03	762.7	76.0	24.4	63	WNW	15	6.7		2	4						The Staff, for E. J. Stone.
Hobart Town, (Tasmania)			29.44	760.5	60.5	15.8	82	N			2		10kn			0	0	Covered	Francis Abbott, F.R.A.S.
Leith, Restalrig Park																			Andrew Gibb.
Mauritius, Observatory	29.71	754.6	29.90	759.5	78.0	25.6	76	ESE	15.0	6.7		2	4		ESE	0.21	5.3	Squally	C. Meldrum.
Melbourne, Observatory	29.75	755.8	29.84	757.9	64.0	17.8	79	NW	6	2.7			4			0	0	Fine	R. L. J. Ellery.
Monach L't-house, (Hebrides)																			J. Youngclause.
North Unst, (Shetland Is.)																			Robert Burnet.

Note.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m.

Marine Series. Vessels.	Sea or swell. Height scale 0—9	Sea or swell. Direction from—	Weather	Observer
S. S. Algeria, N. 40° 10′, W. 30° 10′	5*	SW	Misty	Capt. W. Watson
S. S. Batavia				Capt. J. E. Monland.
Ship Camperdown				Capt. A. T. Miller.
Brig Catherine				Capt. Adam Smith.
Barque Celeste				Capt. D. F. McKechnie.
S. S. Hibernia				Capt. W. R. Cato
Barque Maroon				Capt. A. T. Brown.
Ship Mikado				Capt. C. C. Prehn.
Royal Alice, N. 44° 30′, W. 42° 55′	8	Confused.	D. clouds	Capt. E. M. Hughes.
S. S. Seine				Capt. H. Manning.
Barque Sorata				Capt. Jas. J. Price.
Schooner Traveller				Capt. Alex Simpson

Note.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. *Feet.



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	BAROMETER. Corrected for instrum'tal error and temperature. Inches.	BAROMETER. Corrected for instrum'tal error and temperature. Millimeters.	BAROMETER. Reduced to sea-level. Inches.	BAROMETER. Reduced to sea-level. Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—1.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Upper. From—	CLOUDS. Direction. Lower. From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	WEATHER.	OBSERVER
San José	26.20	665.5	.....	.....	64.4	18.0	90	E	.....	.....	2	8ck	1s	.....	.....	Blank	Blank	.....	Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.21	742.0	29.26	743.2	32.0	0.0	79	WSW	....	.....	2	.....	8	.....	.....	.....	.....	.....	
Fanöe	29.15	740.3	29.17	740.8	31.8	— 0.1	100	SSW	.....	.....	4	.....	9	....	.....	.....	.....	.....	
Godthaab, (Greenland)	29.57	751.0	29.61	752.1	26.6	— 3.0	98	S	.....	.....	2	.....	8	.....	.....	.....	.....	.....	
Stykkisholm, (Iceland)	29.87	758.6	29.91	759.7	9.9	—12.3	100	NE	.....	.....	7	.....	5	.....	.....	.....	.....	.....	
Thorshavn, (Faröe)	28.94	735.1	28.98	736.0	35.4	1.9	84	SE	.....	.....	5	.....	10	.....	.....	.....	.....	.....	Rain & snow
Vestervig	28.96	735.5	29.13	739.8	32.0	0.0	81	SW	.....	.....	2	.....	2	.....	.....	.....	.....	.....	

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the cooperation of the Director of the Paris Observatory, and the respective observers.

Alençon, Normal School	29.04	737.5	29.59	751.5	41.0	5	87	SW	.....	.....	4	.....	5	.....	W	0	0	Cloudy	Collignon, Director.
Amiens, Normal School	29.23	742.4	29.34	745.3	40.3	4.6	88	W	.....	.....	3	.....	10	.....	.....	0.299	7.6	Covered	Bonvarne, Director.
Avignon, Normal School	29.58	751.4	29.66	753.4	42.1	5.6	84	NE	.....	.....	1	.....	10	.....	.....	0.031	0.8	Covered	Mr. Giraud, Director
Bar-sur-Seine	28.95	735.2	29.52	749.9	36.9	2.7	85	SW	.....	.....	1	5c	.....	SW	.....	0.244	6.2	Cloudy	C. Saillard.
Beaumette Obs'y (Angers)	29.47	748.5	29.63	752.6	46.8	8.2	55	W	4.3	1.9	.....	.....	.....	.....	W	0.075	1.9	.....	Albert Cheux.
Beauvais	29.14	740.2	29.43	747.6	40.8	4.9	77	W	.....	.....	3	.....	5	.....	WNW	0.187	4.75	Cloudy	Normal School.
Besançon	28.61	726.8	29.53	750.0	36.5	2.5	93	SW	.....	.....	3	.....	8	.....	.....	0	0	Very cloudy	Normal School.
Bourg-en-Bresse	28.68	728.4	29.58	751.2	36.3	2.4	96	S	.....	.....	2	.....	10kn	.....	S	0	0	Covered	Normal School.
Bourges, Normal School	29.00	736.6	29.56	750.7	41.0	5	94	W	.....	.....	6	.....	5	.....	W	0.322	8.2	Cloudy	A. Wagner, Director.
Brest, Naval Observatory	29.41	747.0	29.63	752.6	48.0	8.9	70	NNW	.....	.....	3	.....	4n	.....	NNW	0.256	6.50	.....	The Staff.
Carcassonne, Normal Schoo	29.30	744.2	29.72	754.8	49.1	9.5	97	W	.....	.....	4	.....	0	.....	.....	0.425	10.8	Clear	Vateau, Director.
Caen	29.45	748.0	29.52	749.9	46.0	7.8	70	W	.....	.....	1	.....	5	.....	NW	0.262	6.4	Cloudy	Normal School.
Chartres, Normal School	28.94	735.0	29.51	749.6	43.0	6.1	.....	NW	.....	.....	4	.....	7	.....	E	0.31	8.	.....	Lequin, Director.
Châlons-sur-Marne, N. Sch'l	29.41	739.4	29.44	747.7	36.3	2.4	93	NW	.....	.....	2	.....	5k	.....	NW	0.264	6.7	Cloudy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.27	718.0	29.63	752.7	44.6	7.0	82	W	.....	.....	4	.....	8	.....	NW	0.067	1.7	Very cloudy	Alluard, Director.
Commercy, Normal School	28.54	724.9	29.44	747.8	33.6	0.9	96	W	.....	.....	4	.....	10	.....	W	0	0	Covered	Dr. Goulet, Director.
Commune de Gréasque*	28.51	724.2	29.65	753.2	43.3	6.3	94	NW	.....	.....	1	.....	8	.....	W	0	0	¾ covered	M. Kina.
Grenoble	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Normal School.
La Roche-sur-Yon, N. School	29.44	747.8	29.66	753.3	49.3	9.6	89	NW	.....	.....	2	.....	8	.....	SW	0.276	7.0	Very cloudy	Mouillot, Director.
Le Mans, Normal School	29.28	743.7	29.59	751.5	44.2	6.8	83	W	.....	.....	4	.....	5	.....	W	0.339	8.6	Cloudy	Poirrier, Director.
Lons-l.-e-Saulnier, N.School	28.67	728.2	29.61	752.0	37.6	3.1	97	S	.....	.....	6	.....	5	.....	NW	0.063	1.60	Cloudy	Voudex, Director.
Lorient, Naval Observatory	29.60	751.9	29.71	754.5	49.6	9.8	62	WNW	.....	.....	3	.....	5	.....	W	0.067	1.7	½ covered	T. Carré, Director.
Mâcon, Normal School	28.74	729.9	29.44	747.8	39.0	3.9	83	W	.....	.....	2	.....	10	.....	.....	0	0	Cloudy	M. Marchal, Director.
Metz	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. A. Schuster, Dir.
Mirecourt	28.25	717.5	29.31	744.5	36.3	2.4	93	WSW	.....	.....	2	.....	10	.....	NE	0	0	Covered	Normal School.
Nismes, Normal School	29.48	748.9	29.69	754.1	53.2	11.8	69	W	.....	.....	1	.....	8	.....	E	0	0	Very cloudy	Boyer, Director.
Orleans, Normal School	29.35	745.5	29.73	755.2	41.7	5.4	91	SW	.....	.....	6	.....	8	.....	.....	0.24	6.	Very cloudy	Bernard, Director.
Paris, Observatory	29.22	742.1	29.46	748.2	41.5	5.3	81	W	.....	.....	1	.....	10	.....	W	0.239	6.08	Covered	National Observatory.
Privas	28.61	726.8	29.68	753.8	50.0	10	73	SW	.....	.....	2	.....	10	.....	SW	0	0	Covered	Normal School
Rochefort, Naval Obs'y	29.71	754.5	29.74	755.3	49.3	9.6	92	WNW	.....	.....	3	.....	10	.....	ESE	0.16	4.	Covered	Lt. Decante, Director.
Rouen, Normal School	29.37	746.1	29.46	748.3	45.3	7.4	86	W	.....	.....	4	.....	2	.....	W	0.118	3.0	Slightly cl'dy	F. Lucard, Director.
Tarbes, Normal School	28.77	730.7	29.85	758.3	49.1	9.5	95	W	.....	.....	6	.....	10	.....	W	0.75	19.	Raining	T. Hugues, Director.
Villefranche	28.96	735.6	29.69	754.1	41.9	5.5	91	SSE	.....	.....	4	.....	8	.....	N	0	0	Very cloudy	Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.82	757.4	29.85	758.1	77.0	25	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.59	15.	.....	L'Abbé Marchésl.
Marseilles, Observatory	.....	.....	29.62	752.4	48.4	9.1	73	NW	.....	.....	2	.....	7	.....	.....	Inap.	Inap.	Cloudy	The Staff.
Mont-Louis	24.58	624.3	29.89	759.3	37.8	3.2	49	SSW	3.7	1.67	.....	.....	10	.....	W	0	0	.....	Mr. Falguère.
Nice	.....	.....	29.45	748.1	50.9	10.5	55	W	.....	.....	4	.....	1?	.....	.....	0	0	Cloudy?	Dr. A. Niepce.
Paris, Montsouris Obs'y	29.17	741.0	29.45	748.0	41.2	5.1	81	W	.....	.....	3–4	.....	10	.....	WNW	0.350	8.9	.....	Marié Davy, Director.
Perpignan	.....	.....	29.74	755.4	55.0	12.8	63	NW	18.6	8.38	.....	.....	5	.....	NW	0.098	2.5	.....	Dr. Fines.
Pic du Midi, (Summit,) H. P.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.22	564.5	.....	.....	25.2	— 3.8	.....	NW	.....	.....	8	.....	10	.....	.....	1.307	33.2	Snowy	Gen'l de Nansouty.
Saint Maur, (near Paris)	29.30	744.1	29.46	748.3	40.5	4.7	79	W	.....	.....	2	.....	10	.....	WNW	0.303	7.7	.....	E. Renou.
Toulouse, Observatory	29.10	739.1	29.82	757.3	50.2	10.1	83	WNW	.....	.....	4	.....	7	.....	.....	0.130	3.30	Light rain	The Staff.
Tours	29.41	746.9	29.60	751.9	46.4	8.0	72	WNW	.....	.....	3	.....	10	.....	WNW	0.110	2.8	.....	C. Marquet.
Versailles, (near Paris)	.....	.....	29.47	748.4	40.6	4.8	81	NW	.....	.....	3	.....	10	.....	.....	0.339	8.59	Covered	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.61	777.6	30.64	778.3	35.2	1.8	90	NW	6.3	2.8	.....	.....	10k	.....	.....	0	0	Covered	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published. At Mirecourt and Rochefort the cloud directions are apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Barometer: Corrected for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg								S			2		6			0	0		Prof. Dr. Hoh.
Berlin	29.23	742.4	29.41	747.0	31.6	— 0.2	73	SSE			3		10			0	0		Prof. Arndt.
Breslau	29.03	737.4	29.56	750.7	28.2	— 2.1	76	SW			3		10			0	0		Royal University Obs'y.
Carlsruhe	28.93	734.7	29.36	745.7	33 1	0.6	65	SSE			1		8	SW		0.079	2.0	Snowing	Albert Senz.
Cassel	28.71	729.2	29.30	744.3	33.4	0.8	72	W			3		10			0.12	3.	Snowing	Dr. H. Möhl.
Crefeld	29.06	738.1	29.22	742.1	34.0	1.1	95	S			0		10			0	0		Director Lose.
Emden	29.24	742.8	29.28	743.7	30.7	— 0.7	92	SSW			2		10			Inap.	Inap.		Prof. Prestel.
Frankfort on the Main	29.00	736.7	29.38	746.3	34.5	1.4		WNW			4		10	NW		0.201	5.1	Snowing	Physical Society.
Friedrichshafen	29.04?	737.5?	29.49	749.0	30.2	— 1.0	92	Calm			0		10			0.130	3.3	Fair	M. Wilhelm.
Hamburg	29.23	742.5	29.30	744.3	28.4	— 2.0	90	SSE			2		8c			0.056	1.42		Captain F. Hegemann.
Kiel	29.17	741.0	29.19	741.4	32.7	0.4	79	Calm			0		10			0.002	0.06	Snowing	Prof. G. Karsten.
Königsberg, (Prussia)	29.47	748.5	29.55	750.6	27.3	— 2.6	79	SW								0	0		Prof. E. Luther.
Köslin			29.43	747.4	26.6	— 3.0		S			2		1			0	0		H. Müller.
Leipsic, Observatory	29.01	736.9	29.45	747.9	31.6	— 0.2	70	SSE			3		8						Prof. Bruhns.
Memel, Naval School	29.47	748.6	29.52	749.8	27.3	— 2.6	92	SSW			5		10n					Snowing	Reinbrech von Skalweit.
Neufahrwasser	29.50	749.3	29.52	746.7	27.9	— 2.3	75	SSW			3		1			0	0		A. Lothes.
Posen	29.29	744.0	29.60	751.8	26.8	— 2.9	77	S			5					0	0	Cloudy	Dr. Magener.
Strassburg Obs., (in Alsace	28.82	732.0	29.38	746.3	32.7	0.4	92	SW			1		10					Snowing	Dr. Schur.
Stuttgart	28.45	722.5	29.41	746.9	33.4	0.8	82	W			1		10			0.287	7.3	Snowing	Prof. Schoder.
Treves, (Trier)	28.72	729.5	29.23	742.5	33.8	1.0	93	SW			1		10			0.182	4.63	Foggy	Prof. Flesch.
Weissenburg, (Bavaria)	27.89	708.3	29.45	748.1	27.0	— 2.8	98	S	11	5			10			0	0	Squally	Dr. Von Bebber.
Wustrow, Naval School	29.36	745.7	29.40	746.7	30.0	— 1.1	85	S			4		10			0.048	1.22	Covered	E. F. Schütz.
German Naval Series.																			

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet: Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4. Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines, Königsberg, Posen and Wustrow in cubic zolls. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens

Athens	29.29	743.9	29.69	754.0	54.0	12.2		S			5							Light rain	Dr. J. F. J. Schmidt.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and wind-force; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.94	760.5	29.99	761.8	76.6	24.8	56	SSE	15.0?	6.7?			8			0	0	D. clouds	
Deesa	29.52	749.7	30.00	761.9	82.3	27.9	50	Calm					10	WSW		0	0	D. clouds	
Bombay	29.88	758.8	29.91	759.8	83.1	28.4	73	NW	11.0	4.9			0			0	0	Blue sky	
Poona	27.90	708.6	29.89	759.2	82.2	27.9	47	E					0			0	0	Blue sky	
Lahore	29.29	744.0	30.07	763.7	61.9	16.6	72	E	2.3	1.0			8			0	0	Cloudy	
Belgaum	27.40	696.0	29.95	760.7	76.1	24.5	49	ESE	10.0	4.5			1			0	0	D. clouds	
Bangalore																			
Roorkee	29.09	738.8	30.02	762.6	61.8	16.6	89	Calm	4.0	1.8			10			0	0	Foggy	
Agra	29.45	748.0	30.03	762.8	67.8	19.9	74	W								0	0		
Trichinopoly																			
Nagpur	28.94	735.2	30.09	761.9	79.6	26.4	47	Calm	2.3	1.0			0			0	0	Blue sky	
Madras																			
Lucknow	29.62	752.4	30.01	762.2	68.4	20.2	82	Calm	3.6	1.6			10			0	0	Overcast	
Allahabad	29.67	753.6	29.99	761.8	69.7	20.9	70	Calm	3.8	1.7			0			0	0	Blue sky	
Patna	29.51	757.2	30.00	761.9	70.1	21.2	69	W	0.4	0.2			2	W	W	0	0		
Hazaribagh	27.95	710.0	30.01	762.2	69.0	20.6	47	WNW	6.1	2.7			0			0	0	Blue sky	
Cuttack	29.90	759.3	29.98	761.4	74.3	23.5	63	Calm	0.4	0.2			0			0	0	Blue sky	
Calcutta (Aliporo)	29.97	761.3	29.99	761.8	69.8	21.0	80	W	3.0	1.3			0			0	0	Blue sky	
Goalpara	29.58	751.4	29.98	761.6	70.2	21.2	68	Calm	0.5	0.2			0			0	0	Blue sky	
Chittagong																			
Sibsagar	29.70	754.5	30.06	763.4	62.7	17.1	87	Calm	0.4	0.2			5			0	0	D. clouds	
Rangoon																			
Jubbulpore	28.64	727.4	30.03	762.7	74.5	23.6	62	NE	1.6	0.7			0			0	0	Blue sky	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,361 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	21.55	547.3	29.51	749.5	14.5	— 9.7	80	WSW	.....	.....	4	.....	10	.....	.....	3.937*	100.0*	.....	Ab. Dom. Morgini.
Stelvio	21.51	546.3	29.49	749.1	11.7	—11.3	.....	W	1.3	0.6	.....	.....	10	.....	.....	0	0	.....	Signora Ernesta Manfredi.
Udine	29.11	739.3	29.54	750.2	39.6	4.2	52	E	6.9	3.1	.....	.....	9	.....	.....	0.016	0.4	.....	Prof. Giovanni Clodig.
Padua	29.40	746.7	29.51	749.6	40.6	4.8	73	NNE	6.9	3.1	.....	.....	10	E	.....	0.012	0.3	.....	Prof. Dott. Lorenzoni.
Vicenza	29.34	745.1	29.54	750.2	40.3	4.6	74	NW	0	0	.....	.....	6	.....	.....	0	0	.....	Conte Alm. Da Schio.
Verona	29.34	735.2	29.57	751.1	41.9	5.5	87	E	.....	.....	1	.....	10	.....	.....	0	0	.....	Dott. B. Bertoncelli.
Bergamo	28.20	716.3	29.58	751.2	35.6	2.0	86	E	.....	.....	2	.....	9	.....	.....	0	0	.....	Prof. Trionfini Carlo.
Domodossola	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Giuseppe Calza.
Milan	29.02	737.1	29.57	751.0	36.1	2.3	.....	NNE	.....	.....	1	.....	10	.....	.....	0	0	.....	Ab. Gio. Capelli.
Pavia	29.24	742.7	29.60	751.9	37.0	2.8	97	NE	.....	.....	1	.....	10	.....	.....	0	0	.....	Prof. Gio. Cantoni
Moncalieri	28.66	727.9	29.60	751.9	36.0	2.2	79	WNW	1.3	0.6	.....	.....	3	.....	.....	0	0	.....	Prof. P. F. Denza.
Mondovi	27.59	700.8	29.58	751.2	36.1	2.3	60	NNW	.....	.....	2	.....	9	.....	.....	0	0	.....	Prof. D. C. Bruno.
Porto Maurizio	29.32	744.7	29.55	750.5	49.5	9.7	63	SW	.....	.....	4	.....	5	W	.....	0	0	.....	Prof. L. Vassallo.
Genoa	29.35	745.5	29.52	749.9	46.9	8.3	56	N	1.3	0.6	.....	.....	10	S	.....	0	0	.....	Prof. G. M. Garibaldi
Piacenza	29.28	743.8	29.54	750.4	36.3	2.4	87	N	4.3	1.9	.....	.....	10	.....	.....	0	0	.....	Dott. G Manzi.
Parma	29.22	742.1	29.54	750.4	37.4	3.0	93	NNW	.....	.....	4	.....	10	.....	.....	0.083	2.1	.....	Prof. P. Pigorini.
Florence	29.26	743.3	29.53	750.1	45.1	7.3	86	NW	.....	.....	2	.....	4	.....	.....	0.394	10.0	.....	Cav. F Meucci.
Leghorn	29.42	747.3	29.51	749.5	51.1	10.6	66	W	12.5	5.6	.....	.....	6	SW	.....	0.083	2.1	.....	Prof. P. Monte.
Siena	28.30	718.9	29.55	750.5	46.2	7.9	61	WSW	9.8	4.4	.....	.....	4	SW	.....	0.205	5.2	.....	Prof. L. Toscani.
Urbino	27.90	710.9	29.60	751.9	37.9	3.3	95	NE	.....	.....	2	.....	10	.....	.....	0	0	.....	Prof. P. Serpieri.
Pesaro	29.49	749.1	29.54	750.4	40.8	4.9	86	N	19.2	8.6	.....	.....	10	N	.....	0	0	.....	Prof. Luigi Guidi.
Ancona	29.42	747.3	29.53	750.1	42.1	5.6	72	WNW	.....	.....	4	.....	8	.....	.....	0	0	.....	Prof. F. DeBosis.
Grosseto	29.48	748.9	29.60	751.8	48.7	9.3	81	ENE	.....	.....	2	.....	3	NE	.....	0	0	.....	Avv. P. Ponticelli.
Rome	29.39	746.5	29.57	751.1	46.9	8.3	89	S	3.1	1.4	.....	.....	10	.....	.....	0.189	4.8	.....	Prof. P. A Secchi.
Naples, O. U.	29.37	746.0	29.58	751.2	55.4	13.0	75	S	.....	.....	1	.....	8	W	.....	0.390	9.9	.....	Prof. L. Palmieri.
Lecce	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. C. De Giorgi.
Cosenza	28.71	729.3	29.63	752.5	49.6	9.8	82	SE	0	0	.....	.....	10	.....	.....	0.496	12.6	.....	Prof. F. D. Conti.
Cagliari	29.48	748.8	29.68	753.8	56.8	13.8	60	NW	.....	.....	4	.....	5	NW	.....	0	0	.....	Prof. A. Pacinotti.
Riposto, (Sicily)	.....	.....	.....	.....	56.7	13.7	66	NW	.....	.....	2	.....	4	SE	.....	0.339	8 6	.....	Prof. F. Caffero.
Palermo	29.41	747.1	29.67	753.7	55.2	12.9	68	W	6.3	2.8	.....	.....	8	.....	.....	0	0	.....	Prof. G. Cacciatore.
Caltanissetta	27.67	702.8	29.66	753.3	47.5	8.6	69	W	.....	.....	6	.....	5	SE	.....	0.268	6.8	.....	Prof. A. Pagani.
Syracuse	29.54	750.4	29.62	752.3	53.2	11.8	71	SW	.....	.....	2	.....	10	W	.....	0.878	22.3	.....	Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.08	738.7	29.64	752.8	49.6	9.8	69	WSW	0	0	.....	.....	10	.....	.....	0.189	4.8	.....	Prof. F. Brioschi.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals give the wind-force on the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,543.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Siena, 348.5 m., or 1,143.3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft * Unmelted snow.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Tokei (Yeddo)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	The Observatory.
Tokei (Yeddo) University	30.27	768.8	30.37	771.4	31	— 0.6	48	N	8.5	3.8	.....	.....	.....	.....	.....	0	0	Clear	Prof. P. V. Veeder.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Señor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Aguascalientes	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	I. N. Marin, M. D.
Córdoba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	C. Peña, M. D.
Cuernavaca	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	L. Castillo, A. E.
Guadalajara	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. L. Perez.
Guanajuato	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. V. Fernandez.
Leon	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. M. Leal.
Mexico	23.08	586.1	30.18	766.6	48.2	9.0	69	W	0.1	0.05	.....	1c	0	.....	.....	0	0	Clear	Central Observatory.
Orizaba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	N. N.
Orizaba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	I. Orozco, M. D.
Pabellon, (Aguascalts)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. V. de Leon, M. E.
Puebla	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. B. Gonzalez.
Toluca	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. C. Velazquez.
Tlacotalpam	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. F. R. Bayly.
San Luis Potosi	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	G. Barroeta, M. D.
Vera-Cruz	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. J. Rossell.
Zacatecas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. A. Bonilla, M. E.
Puebla, (Catholic Institute)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	P. Spina. [M. M. D. D.
Morelia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Tena, F. L. Páramo

Note.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,290 m., or 7,512.9 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

Furnished by the cooperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	29.25	743.0	29.25	743.0	37.8	3.2	.....	W	.....	.....	5	.....	.....	.....	.....	0.197	5.0	.....	
Groningen	29.15	740.3	29.20	741.7	33.8	1.0	.....	S	.....	.....	2	.....	.....	.....	.....	0	0	.....	
Helder	29.15	740.5	29.15	740.5	34.5	1.4	.....	S	.....	.....	2	.....	.....	.....	.....	0.240	6.1	.....	
Hellevoetsluis	.....	.....	29.23	742.4	37.4	3.0	89	ESE	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	
Utrecht	29.17	740.9	29.22	742.1	34.2	1.2	90	WSW	.....	.....	2	.....	5	.....	.....	0.189	4.8	Cloudy	H. v d Brink.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	29.03	737.3	29.08	738.7	26.6	— 3.0	96	Calm	0	0	.....	.....	0	.....	.....	0	0	.....	
Brönö	29.25	742.9	29.29	743.9	24.4	— 4.2	41	NE	18	8	.....	.....	3	.....	.....	0	0	.....	
Christiania	28.96	735.5	29.11	739.3	28.9	— 1.7	76	N	7	3	.....	.....	10	.....	.....	0.031	0.8	Light snow..	
Tromsö	29.35	745.5	29.39	746.6	20.1	— 6.6	73	NW	4	2	.....	.....	0	.....	.....	0	0	.....	
.....																			

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	30.21	767.3	30.40	772.2	60.6	15.9	83	SSW	2.5	1.1	.....	.....	6	.....	.....	0	0	.....	
Campo Major	29.17	740.8	30.21	767.3	50.9	10.5	89	WNW	11.9	5.3	.....	.....	10	WNW	.....	0	0	.....	Dr. J. A. Sampaio
Funchal, (Madeira)	30.32	770.2	30.39	772.0	64.0	17.8	55	E	2.5	1.1	.....	.....	9	.....	.....	0	0	.....	Dr. A. M. R. dos Santos
Lisbon, Observatory	29.89	759.2	30.25	768.4	55.9	13.3	77	NW	12.5	5.6	.....	.....	8	.....	.....	0.016	0.4	.....	Capt. D. A. de Cunha.
Ponta Delgada, (Azores)	30.36	771.1	30.43	772.9	63.3	17.4	68	S	5.6	2.5	.....	.....	3	.....	.....	0	0	.....	The Staff.
.....																			
.....																			

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

Naval Series. Vessels.																Sea or swell. Height scale 0–9	Sea or swell. Direction from—		
S. Bartholomew Dias	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
S. S. India	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R, A. T. Pinha, Com'd't.
S. S. Mindello	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. D. Pedroso, Com'd't.
S. S. Sado	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. F. R. R. Bastos, Com'd't.
S. S. Sá da Bandeira	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. N. P. Sampaio, Com'd't.
S. S. Tejo	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. Texeira da Silva, Com'd't.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. J. Ferreina, dos Amas, Com'

NOTE.—The originals, except for S. S. Tejo, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.21	741.9	29.65	753.2	22.1	— 5.5	93	S	4	2	.....	.....	0	.....	.....	.....	.....	.....	Astronomical Obs.
Wilna	29.26	743.3	29.70	754.4	25.9	— 3.4	91	SSW	2	1	.....	.....	10	.....	.....	.....	.....	Hea'y clouds	Astronomical Obs.
Dorpat	29.34	745.2	29.59	751.6	28.4	— 2.0	85	S	11	5	.....	.....	3kn	.....	.....	.....	.....	.....	Prof. Dr. Weihrauch
St. Petersburg	29.65	753.0	29.66	753.4	29.8	— 1.2	90	SSE	20	9	.....	.....	10n	.....	.....	.....	.....	.....	Central Physical Obs.
Kuopio	29.13	739.9	29.47	748.4	27.1	— 2.7	100	SE	22	10	.....	.....	10 [n	.....	.....	Blank	Blank	.....	Ch. Forsten.
Kieff	29.21	741.8	29.87	758.6	30.4	— 0.9	92	SE	13	6	.....	.....	10c;ks;	.....	.....	.....	.....	.....	Physical Cabinet.
Nikolaiev	29.95	760.7	30.02	762.5	35.1	1.7	91	E	13	6	.....	.....	10n	.....	.....	.....	.....	.....	Kurdakof.
Kertch	30.16	766.1	30.18	766.6	32.0	0 0	96	NNE	7	3	.....	.....	10	.....	.....	.....	.....	.....	Lagorio.
Moscow	29.59	751.6	30.18	766.5	23.7	— 4.6	90	S	9	4	.....	.....	10s	.....	.....	.....	.....	.....	Meteorological Obs.
Lugan	30.03	762.7	30.24	768.2	26.2	— 3.2	82	E	4	2	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Archangel	29.90	759.4	29.92	759 9	17.2	— 8.2	94	SE	22	10	.....	.....	10	.....	.....	.....	.....	.....	Ogorodnikof.
Tiflis	28.92	734.5	30.43	772.9	29.8	— 1.2	86	Calm	0	0	.....	.....	1k	.....	.....	.....	.....	.....	Physical Observatory.
Astrakhan	30.54	775.7	30.46	773.6	24.8	— 4.0	73	ESE	4	2	.....	.....	10s	.....	.....	.....	.....	.....	Sebastianof.
Kasan	30.31	769.9	30.61	777.6	7.7	—13.5	80	SSE	2	1	.....	.....	3	.....	.....	.....	.....	.....	Physical Cabinet
Orenburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Tschernischet.
Ekaterinburg	29.59	751.6	30.66	778.8	— 1.7	—18.7	80	Calm	0	0	.....	.....	2	.....	.....	.....	.....	.....	Meteorological Obs.
Nukuss	30.24	768.1	30.50	774.7	12.0	—11.1	65	NNE	4	2	.....	.....	0	.....	.....	.....	.....	.....	
Kasaly	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Tashkend	28.62	727.0	30.49	774.5	16.9	— 8.4	88	NE	2	1	.....	.....	8k	.....	.....	.....	.....	.....	Bobrof.
Barnaul	29.94	760.4	30.54	775.6	— 5.3	—20.7	86	NW	0	0	.....	.....	0	.....	.....	.....	.....	.....	Michelson.
Yeniseisk	30.51	775.0	30.91	785.0	—29.7	—34.3	85	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Meteorological Obs.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Marks.
Oorga	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Usolzef.
Krotkowo*	30.09	764.3	30.61	777.5	7.3	—13 7	66	E	2	1	.....	.....	1s	.....	.....	.....	.....	.....	Mossin.
Peking, (China)	30.57	776.4	30.71	780.0	18.1	— 7.7	43	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Cand. Fatjanow.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Physical Observatory
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Nikolaievsk, on the Amoor	30.42	772.7	30.46	773.7	19.6	— 6.9	70	NW	7	3	.....	.....	0	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	— 8.9	—22.7	60	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	

NOTE.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall; for Krotkowo, the barometer reduced to freezing but not to sea level. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 492 m., or 1,[illegible] ft.; Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft. * N. 53° 47′, E. 48° 34′.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Rave, Director.
Bilbao, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Manuel de Naveran
Burgos, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Domingo Martin y Perez.
Madrid, Royal Observatory	27.89	708.4	30.02	762.6	52.0	11.1	56	W	9.7	4.34	.....	0	3	.....	.....	0	0	Clouds	The Staff.
Murcia, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Olayo Diaz, Director.
Santiago, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.89	759.1	29.95	760.8	72.3	22.4	94	NNE	9.4	4.2	.....	.....	10n	.....	.....	0.189	4.8	Raining	Benito Vines, S. J.
San Fernando, Naval Obs'y	30.17	766.3	30.27	768.8	55.2	12.9	79	NW	11.5	5.1	.....	0	10	.....	NW	0.003	0.1	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de PortoRico, W. I.	.....	.....	29.93	760.1	70.0	22.2	90	SE	0	0	.....	3cs	0	Calm	.....	0	0	Clear	Leonardo de Tejeda, Chief of Engineers.

NOTE.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. m. instead of 8:19 a m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the cöoperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Low'r 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.54	750.2	29.58	751.2	15.1	— 9.4	.....	NE	.....	.....	2	.....	10	.....	.....	0.276	7.0	.....	
Umea	29.28	743.7	29.33	745.0	25.5	— 3.6	91	E	.....	.....	2	.....	10	.....	.....	0.067	1.7	Snowing	
Hernosand	29.09	738.8	29.14	740.1	32.7	0.4	96	E	.....	.....	6	.....	10	.....	.....	0.067	1.7	.....	
Stockholm	28.88	733.6	29.06	738.1	32.7	0.4	92	SSW	.....	.....	4	.....	10	.....	.....	0.189	4.8	.....	
Wisby	29.19	741.5	29.25	743.0	33.1	0.6	75	WSW	.....	.....	7	.....	5	.....	.....	0.189	4.8	.....	
Sub-Series.																			
Upsala	28.96	735.6	29.04	737.5	32.0	0.0	93	S	10.7	4.8	.....	.....	2	.....	.....	0.066	1.67	.....	Dr. Hildebrandsson.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the cooperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.09	713.4	29.56	750.9	37.6	3.1	83	SSW	.....	.....	6	.....	10	.....	.....	0.031	0.8	Raining	The Observatory.
Zurich	27.83	706.8	29.56	750.8	28.0	— 2.2	97	SE	.....	.....	2	.....	10	.....	.....	0.236	6.0	Snowing	The Observatory.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—For Geneva the corresponding departures from the normal values are: Barometer, —14.2 mm; Thermometer, +1.5 cent.; Relative Humidity, +2 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	29.93	760.1	46.4	8.0	63	SE	9	4.0	.....	.....	10	.....	SW	0.063	1.6	.....	The Observatory.
Fao, (Persian Gulf)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salonica	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	B. Stefanidès.
Valona	.....	.....	29.43	747.6	42.4	5.8	.....	S	.....	.....	2	.....	10	.....	.....	0.39	10.	Rain-squalls	A. Bertrand.
Varna	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Imperial Observatory.
Sub-Series.																			
Beirut,(Syria,) Lee Obs'y	30.08	764.0	30.20	767.1	61.5	16.4	52	N	.....	.....	1	.....	3c	.....	.....	0	0	D. clouds	Prof. C. V. A. Van Dyck

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the cooperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	29.79	756.7	29.86	758.4	31.7	— 0.2	86	Calm	0	0	.....	0	.....	.....	.....	.....	.....	.....	Hon. J. Ferguson.
Brockville, Ontario	29.72	754.9	30.04	763.0	25	— 3.9	.....	NE	1	0.4	.....	.....	10s	.....	NE	0	0	Cloudy	W. R. Bigg.
*Chatham, N. B	29.77	756.1	29.83	757.7	30	— 1.1	79	NW	6	2.7	.....	2cs	8ks	Calm	Calm	0	0	Cloudy	G. A. Blair.
Charlottetown, P. E. Island.	29.70	754.4	29.74	755.4	33	0.6	96	N	12	5.4	.....	.....	10n	.....	Calm	0.100	2.54	Cloudy	H. J. Cundall, C. E.
Cornwall, Ontario	29.80	756.9	30.01	762.2	25.5	— 3.6	96	E	.....	.....	1	.....	10s	.....	.....	0	0	Dull	James Smith, M. A.
Dalhousie, N. B	29.88	758.9	29.91	759.7	31.3	— 0.4	76	W	.....	.....	1	.....	.....	.....	.....	0	0	Gloomy	H. A. Johnson.
Esquimault, B. C	30.13	765.3	30.18	766.6	39.6	4.2	96	NE	.....	.....	.....	.....	10n	.....	.....	0	0	Cloudy	W. H. Bevis.
*Father Point, Quebec	29.97	761.2	29.99	761.7	22	— 5.6	86	SW	18	8.0	.....	5k	5s	NE	NE	0	0	Cloudy	J. McWilliams.
Fredericton, N. B	29 87	758.7	29.93	760.2	21.3	— 5.9	81	W	8.0	3.6	.....	cs	0	.....	.....	0	0	Cloudy	Prof. Harrison.
*Fort Garry, Manitoba	29.43	747 5	30.30	769.6	32	0.0	100	Calm	0	0	.....	Haze	Fog	.....	.....	0	0	Foggy	James Stewart.
Goderich, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	H. J. Strang, M. A
Granton, Ontario	28.83	732.3	29.96	761.0	34	1.1	100	NE	.....	.....	1	.....	10n	.....	.....	0.11	2.8	Cloudy	James Grant.
*Halifax, N. S	29.56	750.8	29.69	754.1	31	— 0.6	92	NW	20	8.9	.....	2cs	5ks	.....	N	Inap.	Inap.	Fair	F. Allison, M. A.
Hamilton, Ontario	29.62	752.3	30.01	762.2	34.7	1.5	91	NE	.....	.....	1	10cs	.....	SW	.....	0	0	Cloudy	Geo. Dickson, M. A
Heart's Content, N. F	29.46	748.3	29.48	748.8	37	2.8	95	E	.....	.....	1	.....	10	.....	.....	0.37	9.4	Foggy	E. Weedon.
*Kingston, Ontario	29.68	753.9	30.04	763.0	26	— 3.3	96	NE	7	3.1	.....	.....	10s	.....	Calm	0	0	Cloudy	S. Woods, M. A
Little Glace Bay, N. S	29.54	750.3	29.58	751.3	35 0	1.7	.....	N	12	5.4	.....	.....	10n	.....	.....	0.05	1.3	Misting	C. H. Rigby.
*Montreal, Quebec	29.82	757.4	30.03	762.7	23	— 5.0	93	Calm	0	0	.....	.....	10n	.....	.....	0	0	Hazy	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.29	744.0	30.01	762.2	33	0.6	89	Calm	0	0	.....	5k	5ks	SW	SW	Inap.	Inap.	Cloudy	Rev. R. Mosley
Peterboro, Ontario	29.22	742.2	30.00	762.0	31.7	— 0.2	76	NE	.....	.....	1	.....	10ks	.....	.....	0	0	.....	J. F. Jeffers, B. A.
Port Dover, Ontario	29.24	742.7	29.95	760.7	36	2.2	100	NE	10	4.5	.....	.....	10n	.....	NE	0.04	1.0	Threatening	H. Morgan.
Port Hastings, N. S	29.57	751.1	29.62	752.3	34.6	1.4	.....	NW	5	2.2	.....	.....	.....	.....	.....	0	0	Fine	Peter Grant.
Port Stanley, Ontario	29.31	744.5	29.97	761.2	37	2.8	85	NE	1	0.4	.....	.....	10ks	.....	E	0.01	0.3	Cloudy	M. Payne.
*Quebec, Quebec	29.72	754.9	30.08	764.0	22	— 5.6	80	Calm	0	0	.....	.....	Fog	.....	.....	0	0	Dense fog	Capt. Ashe, R. N
*Rockliffe, Ontario	29.58	751.3	30.05	763.3	30	— 1.1	96	Calm	0	0	.....	.....	10s	.....	Calm	Inap.	Inap.	Cloudy	W. H. McIntyre.
St. John, N. B	29.72	754.9	29.90	759.4	26	— 3.3	87	NW	2	0.9	.....	.....	10k	.....	.....	0	0	Cloudy	G. Murdock, C. E.
*Saugeen, Ontario	29.26	743.2	29.98	761.5	36	2.2	95	Calm	0	0	.....	.....	10ks	.....	.....	0.21	5.3	Cloudy	K. Stewart.
Stayner, Ontario	29.21	741.9	30.02	762.5	32	0.0	94	Calm	0	0	.....	.....	8n	.....	NW	0.06	1.5	Cloudy	R. J. Cole.
Stratford, Ontario	28.72	729.5	30.04	763.0	32.8	0.4	97	Calm	0	0	.....	.....	10s	.....	.....	0.127	3.23	Cloudy	C. J. MacGregor, M. A
*Sydney, C. B	29.54	750.3	29.57	751.1	34	1.1	90	N	13	5.8	.....	.....	10n	.....	.....	0.01	0.3	Cloudy	T. C. Hill.
*Toronto, Ontario	29.60	751 8	30.00	762.0	33	0.6	91	NE	5	2.2	.....	.....	10ks	.....	.....	0.08	2.0	Cloudy	Magnetic Observatory.
Windsor, N. S	29.69	754.1	29.79	756.7	31.5	— 0.3	95	N	18	8.0	.....	.....	10k	.....	.....	0	0	Fair	Prof. John E. Oram.
Woodstock, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Montgomery.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	35.0	1.7	.....	E	.....	.....	.....	.....	10n	.....	.....	0.65	16.5	Cloudy	John Delany
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.77	756.1	30.01	762.2	25	— 3.9	87	Calm	0	0	.....	.....	10s	.....	Calm	0	0	Cloudy	
Alpena, Michigan	29.33	745.0	29.99	761.7	38	3.3	100	Calm	0	0	.....	.....	Fog	.....	Calm	0.09	2.3	Foggy	
Atlantic City, New Jersey	29.97	761.2	29.99	761.7	38	3.3	100	NE	8	3.6	.....	.....	Fog	.....	NE	0	0	Foggy	
Augusta, Georgia	29.65	753.1	29.83	757.7	53	11.7	93	NW	4	1.8	.....	.....	10s	.....	NW	0.31	7.9	Cloudy	
Baltimore, Maryland	29.94	760.5	30.00	762.0	42	5.6	83	E	5	2.2	.....	.....	10s	.....	Calm	0.03	0.8	Cloudy	
Barnegat, New Jersey	29.96	761.0	29.98	761.5	36	2.2	100	N	11	4.9	.....	2c	Fog	Calm	Calm	0	0	Fair	
Bismarck, Dakota	28.33	719.6	30.08	764.0	31	— 0.6	89	SE	2	0.9	.....	.....	10s	.....	SE	0.01	0.3	Cloudy	
Boise City, Idaho	27.20	690.9	30.08	764.0	25	— 3.9	75	NE	1	0.4	.....	2c	0	W	.....	0	0	Fair	
Boston, Massachusetts	29.82	757.4	29.98	761.5	28.5	— 1.9	72	W	5	2.2	.....	7ck	Sm'e	NW	.....	0	0	Fair	
Brackettville, Texas	28.82	732.0	29.84	757.9	59	15.0	76	Calm	0	0	.....	0	8ks	.....	W	0	0	Cloudy	
Breckenridge, Minnesota	29.16	740.7	30.20	767.1	32	0.0	100	N	7	3.1	.....	.....	10n	.....	NE	0.01	0.3	Light rain	
Brownsville, Texas	29.97	761.2	30.03	762.7	62	16.7	94	E	2	0.9	.....	10ck	0	Calm	.....	0	0	Cloudy	
Buffalo, New York	29.20	741.7	29.92	760.0	36	2.2	100	NE	10	4.5	.....	.....	10n	.....	NE	0.05	1.3	Light rain	
Burkes, Arizona	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Burlington, Vermont	29.76	755.9	30.03	762.7	27	— 2.8	77	E	3	1.3	.....	.....	10s	.....	Calm	0	0	Cloudy	
Cairo, Illinois	29.52	749.8	29.91	759.7	53	11.7	86	NW	6	2.7	.....	.....	10s	.....	Calm	0.23	5.8	Cloudy	
Camp Grant, Arizona	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Camp Verde, Arizona	26.86	682.2	30.34	770.6	30	— 1.1	78	N	.....	.....	.....	8k	0	NW	.....	0	0	Fair	
Campo, California	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Cape Hatteras, N. Carolina	29.81	757.2	29.81	757.2	55	12.8	100	NE	8	3.6	.....	.....	10n	.....	NE	1.19	30.2	Light rain	
Cape Henry, Virginia	29.88	758.9	29.90	759.4	48	8.9	100	NE	14	6.3	.....	.....	10n	.....	Calm	0.08	2.0	Light rain	
Cape Lookout, N. Carolina	29.75	755.6	29.76	755.9	60	15.6	94	E	22	9.8	.....	.....	10s	.....	E	1.25	31.7	Cloudy	
Cape May, New Jersey	29.96	761.0	29.99	761.7	37	2.8	90	NE	10	4.5	.....	.....	10s	.....	NE	0	0	Cloudy	
Charleston, South Carolina	29.72	754.9	29.78	756.4	58	14.4	93	N	6	2.7	.....	.....	10n	.....	Calm	0.47	11.9	Light rain	
Cheyenne, Wyoming	23.79	604.3	29.73	755.1	27	— 2.8	88	NE	8	3.6	.....	.....	10n	.....	Calm	0.12	3.0	Light snow	
Chicago, Illinois	29.26	743.2	29.96	761.0	41	5.0	91	N	13	5.8	.....	.....	10n	.....	N	0.24	6.1	Light rain	
Cincinnati, Ohio	29.14	740.1	29.76	755.9	57	13.9	91	E	3	1.3	.....	.....	10n	.....	NE	0.25	6.3	Light rain	
Cleveland, Ohio	29.18	741.2	29.92	760.0	41	5.0	100	N	4	1.8	.....	.....	Fog	.....	NE	0	0	Foggy	
Concho, Texas	28.03	711.9	29.75	755.6	42	5.6	64	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Corsicana, Texas	29.58	751.3	30.06	763.5	41	5.0	83	NW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Davenport, Iowa	29.40	746.7	30.05	763.3	41	5.0	82	N	9	4 0	.....	.....	10s	.....	N	0.14	3.6	Cloudy	
Deadwood, Dakota	25.36	644.1	.....	.....	24	— 4.4	74	SW	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Denison, Texas	29.24	742.7	30.07	763.8	38	3.3	81	NW	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Denver, Colorado	24.00	624.8	29.82	757.4	28	— 2.2	88	SW	4	1.8	.....	.....	10s	.....	Calm	0.48	12.2	Cloudy	
Detroit, Michigan	29.23	742.4	29.91	759.7	41	5.0	91	NE	4	1.8	.....	.....	10s	.....	Calm	0.32	8.1	Cloudy	
Dodge City, Kansas	27.38	695.4	29.74	755.4	34	1.1	79	SE	10	4.5	.....	.....	10s	.....	Calm	0	0	Cloudy	
Dubuque, Iowa	29.35	745.5	30.07	763.8	39	3.9	82	N	7	3.1	.....	.....	10s	.....	Calm	0	0	Cloudy	
Duluth, Minnesota	29.45	748.0	30.14	765.5	38	3.3	90	N	4	1.8	.....	.....	10s	.....	N	0	0	Cloudy	
Eagle Pass, Texas	29.20	741.7	29.94	760.5	53	11.7	93	Calm	6	0	.....	.....	10s	.....	Calm	0	0	Cloudy	
Eastport, Maine	29.82	757.4	29.89	759.2	24	— 4.4	74	NW	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Erie, Pennsylvania	29.18	741.2	29.90	759.4	41	5.0	91	E	3	1.3	.....	.....	10s	.....	Calm	0	0	Cloudy	
Escanaba, Michigan	29.42	747.3	30.10	764.5	34	1.1	89	N	7	3.1	.....	0	8s	.....	N	0	0	Cloudy	
Florence, Arizona	28.47	723.1	30.07	763.8	35	1.7	79	E	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Fort Bayard, New Mexico	24.02	610.1	30.02	762.5	25	— 3.9	75	NW	3	1.3	.....	0	0	.....	.....	0.18	4.6	Clear	
Fort Craig, New Mexico	25.51	647.9	.....	.....	20	— 6.7	70	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Fort Gibson, Indian Ter	29.47	748.5	30.02	762.5	42	5.6	91	N	6	2.7	.....	.....	10s	.....	N	0	0	Cloudy	
Fort Griffin, Texas	28.71	729.2	30.01	762.2	44	6.7	91	Calm	0	0	.....	0	5s	.....	Calm	0	0	Fair	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	28.81	731.8	29.96	761.0	36	2.2	90	N	8	3.6	.....	5cs	0	NW	.....	0	0	Fair	
Galveston, Texas	30.00	762.0	30.04	763.0	55	12.8	73	NW	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Grand Haven, Michigan	29.34	745.2	30.00	762.0	42	5.6	83	NE	8	3.6	.....	.....	10s	.....	NE	0.01	0.3	Cloudy	
Indianapolis, Indiana	29.05	737.9	29.82	757.4	49	9.4	93	N	6	2.7	.....	.....	10n	.....	Calm	0.41	10.4	Light rain	
Indianola, Texas	30.03	762.7	30.06	763.5	59	15.0	88	NE	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Jacksboro, Texas	28.89	733.8	30.06	763.5	39	3.9	82	SE	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Jacksonville, Florida	29.84	757.9	29.86	758.4	55	12.8	80	W	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Keokuk, Iowa	29.35	745.5	29.98	761.5	42	5.6	83	NE	9	4.0	.....	.....	10s	.....	Calm	0.11	2.8	Cloudy	
Key West, Florida	29.90	759.4	29.93	760.2	68.0	20.0	84	N	7	3.1	.....	8cs	2ks	W	Calm	0.08	2.0	Cloudy	
Kittyhawk, North Carolina	29.83	757.7	29.85	758.2	52	11.1	100	NE	16	7.2	.....	.....	10n	.....	NE	0.69	17.5	Heavy rain	
Knoxville, Tennessee	28.83	732.3	29.83	757.7	50	10.0	93	SW	2	0.9	.....	.....	Fog	.....	Calm	0.27	6.9	Dense fog	
La Crosse, Wisconsin	29.34	745.2	30.10	764.5	35	1.7	80	NE	6	2.7	.....	.....	10s	.....	NE	0	0	Threatening	
La Mesilla, New Mexico	26.05	661.7	30.20	767.1	29	— 1.7	78	Calm	0	0	.....	.....	10s	.....	W	Inap.	Inap.	Cloudy	
Laredo, Texas	.....	.....	.....	.....	58	14.4	81	Calm	0	0	.....	5c	0	Calm	.....	0	0	Fair	
Leavenworth, Kansas	29.18	741.2	30.05	763.3	37	2.8	100	N	8	3.6	.....	.....	Fog	.....	N	0.02	0.5	Foggy	
Los Angeles, California	29.75	755.6	30.10	764.5	43	6.1	75	N	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Louisville, Kentucky	29.24	742.7	29.79	756.7	55	12.8	100	NW	3	1.3	.....	.....	Fog	.....	Calm	0.09	2.3	Foggy	
Lynchburg, Virginia	29.22	742.2	29.91	759.7	46	7.8	92	Calm	0	0	.....	.....	10n	.....	Calm	0.34	8.6	Light rain	
Maricopa Wells, Arizona	.....	.....	.....	.....	35	1.7	53	N	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Marquette, Michigan	29.36	745.7	30.08	764.0	37	2.8	71	NW	8	3.6	.....	.....	10s	.....	Calm	0	0	Cloudy	
Mason, Texas	28.36	720.3	30.16	766.1	44	6.7	84	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Memphis, Tennessee	29.63	752.6	29.95	760.7	49	9.4	85	NW	6	2.7	.....	.....	10s	.....	NW	0.18	4.6	Cloudy	
Milwaukee, Wisconsin	29.33	745.0	30.04	763.0	39	3.9	91	NE	7	3.1	.....	.....	10s	.....	NE	0.14	3.6	Cloudy	
Mobile, Alabama	29.92	760.0	29.96	761.0	53	11.7	90	NW	1	0.4	.....	0	1s	.....	Calm	0	0	Clear	
Montgomery, Alabama	29.67	753.6	29.90	759.4	55.5	13.1	93	W	6	2.7	.....	.....	10s	.....	W	0	0	Cloudy	
Morgantown, West Virginia	28.78	731.0	29.83	757.7	49	9.4	85	E	4	1.8	.....	.....	10s	.....	SW	0.07	1.8	Cloudy	
Mt. Washington, N. H.	23.60	599.4	29.96	761.0	24	— 4.4	61	N	18	8.0	.....	8ck	0	Calm	.....	0	0	Fair	
Nashville, Tennessee	29.30	744.2	29.83	757.7	54	12.2	93	W	1	0.4	.....	.....	10s	.....	W	0.08	2.0	Cloudy	
New Haven, Connecticut	29.83	759.2	30.01	762.2	32	0.0	79	N	2	0.9	.....	0	8s	.....	Calm	0	0	Cloudy	
New London, Connecticut	29.95	760.7	30.00	762.0	29	— 1.7	78	N	4	1.8	.....	2cs	1s	SW	Calm	0	0	Fair	
New Orleans, Louisiana	29.90	759.4	29.96	761.0	53	11.7	67	W	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Newport, Rhode Island	29.92	760.0	29.97	761.2	36	2.2	71	NW	4	1.8	.....	7k	0	W	.....	0	0	Fair	
New York, New York	29.82	757.4	30.00	762.0	37	2.8	80	N	6	2.7	.....	.....	Fog	.....	Calm	0	0	Foggy	
Norfolk, Virginia	29.84	757.9	29.90	759.4	46	7.8	100	NE	7	3.1	.....	.....	10n	.....	Calm	0.13	3.3	Light rain	
North Platte, Nebraska	27.08	687.8	29.75	755.6	29	— 1.7	100	E	12	5.4	.....	.....	Fog	.....	Calm	0	0	Foggy	
Olympia, Washington Ter.	30.14	765.5	30.18	766.6	38	3.3	90	S	4	1.8	.....	.....	10s	.....	Calm	0.02	0.5	Cloudy	
*Omaha, Nebraska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.01	0.3	.....	
Oswego, New York	29.64	752.8	29.98	761.5	38	3.3	81	E	1	0.4	.....	.....	10s	.....	E	0.02	0.5	Cloudy	
Pembina, Dakota	29.48	748.8	30.34	770.6	32	0.0	100	W	5	2.2	.....	.....	Fog	.....	Calm	0.01	0.3	Foggy	
Philadelphia, Pennsylvania	29.95	760.7	30.00	762.0	34	1.1	90	NE	4	1.8	.....	2ck	5ks	N	NE	0	0	Cloudy	
Phœnix, Arizona	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Pike's Peak, Colorado	17.42	442.5	29.63	752.6	— 5	—20.6	63	S	23	10.3	.....	.....	10s	.....	S	0.04	1.0	Cloudy	
Pioche, Nevada	23.95	608.3	29.72	754.9	18	— 7.8	92	Calm	0	0	.....	.....	10s	.....	Calm	0.05	1.3	Cloudy	
Pittsburg, Pennsylvania	29.03	737.3	29.84	757.9	45	7.2	92	E	4	1.8	.....	.....	10n	.....	E	0.19	4.8	Light rain	
Port Huron, Michigan	29.25	742.9	29.92	760.0	40	4.4	100	N	7	3.1	.....	.....	10s	.....	Calm	0.22	5.6	Threatening	
Portland, Maine	29.90	759.4	29.95	760.7	32	0.0	79	Calm	0	0	.....	5k	Fog	NW	.....	0	0	Fair	
Portland, Oregon	30.20	767.1	30.30	769.6	37	2.8	90	NW	3	1.3	.....	.....	10s	.....	Calm	0	0	Cloudy	
Prescott, Arizona	24.76	628.9	30.12	765.0	19	— 7.2	68	NE	.....	.....	.....	0	10s	.....	Calm	0	0	Cloudy	
Punta Rassa, Florida	29.94	760.5	29.96	761.0	65	18.3	89	SW	8	3.6	.....	2k	5ks	SW	SW	0	0	Cloudy	
Red Bluff, California	29.84	757.9	30.22	767.6	38	3.3	90	N	6	2.7	.....	0	0	.....	.....	0.03	0.8	Clear	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Rochester, New York	29.31	744.5	29.94	760.5	35	1.7	95	E	4	1.8	.....	.....	Fog	.....	Calm	0.08	2.0	Foggy	
Roseburg, Oregon	29.68	753.9	30.28	769.1	35	1.7	95	Calm	0	0	.....	5cs	0	Calm	.....	0	0	Fair	
Sacramento, California	30.11	764.8	30.20	767.1	38	3.3	100	N	4	1.8	.....	0	Fog	.....	Calm	0.01	0.3	Foggy	
St. Louis, Missouri	29.36	745.7	29.93	760.2	47	8.3	92	N	4	1.8	.....	.....	10s	.....	Calm	0.20	5 1	Cloudy.....	
St. Marks, Florida	29.89	759.2	29.90	759.4	57	13.9	81	NW	4	1.8	.....	.....	10s	.....	NW	0	0	Cloudy.....	
St. Paul, Minnesota	29.24	742.7	30.10	764.5	36	2.2	90	N	5	2.2	.....	.....	10s	.....	Calm	0	0	Cloudy.....	
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salt Lake City, Utah	25.59	650.0	29.92	760.0	29	— 1.7	100	N	4	1.8	.....	.....	10n	.....	Calm	0.43	10.9	Light snow..	
San Antonio, Texas	29.33	745.0	29.92	760.0	48	8.9	93	E	2	0.9	.....	0	0	.....	.....	0	0	Clear.....	
San Diego, California	30.05	763.3	30.12	765.0	48	8.9	77	NE	6	2.7	.....	0	0	.....	.....	0.01	0.3	Clear.....	
Sandusky, Ohio	29.23	742.4	29.92	760.0	41	5.0	91	NE	14	6.3	.....	.....	Fog	.....	Calm	0.24	6.1	Foggy	
Sandy Hook, New Jersey	29.97	761.2	29.99	761.7	36	2.2	80	NE	7	3.1	.....	8ck	Haze	NW	.....	0	0	Cloudy.....	
San Francisco, California	30.12	765.0	30.19	766.8	47	8.3	77	NE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Santa Fé, New Mexico	23.13	587.5	29.67	753.6	10	—12.2	58	E	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Savannah, Georgia	29.72	754.9	29.81	757.2	57	13.9	94	N	5	2.2	.....	.....	Fog	.....	.....	0.13	3.3	Clear.....	
Shreveport, Louisiana	29.81	757.2	30.04	763.0	43	6.1	100	NW	2	0.9	.....	.....	10s	.....	NW	0.39	7.6	Foggy	
Smithville, North Carolina	29.68	753.9	29.72	754.9	55	12.8	100	N	15	6.7	.....	.....	10n	.....	N	0	0	Cloudy.....	
Springfield, Massachusetts	29.80	756.9	29.94	760.5	27	— 2.8	66	Calm	0	0	.....	.....	10s	.....	Calm	1.40	35.6	L ght rain...	
Stockton, Texas	26.92	683.8	29.92	760.0	47	8.3	85	SW	8	3.6	.....	0	5k	.....	SW	0	0	Cloudy.....	
Thatcher's Island, Mass	29.91	759.7	29.96	761.0	32	0.0	79	Calm	0	0	.....	1ck	0	NW	.....	0	0	Fair.....	
Toledo, Ohio,	29.24	742.7	29.92	760.0	40	4.4	100	NE	8	3.6	.....	.....	Fog	.....	NE	0	0	Clear.....	
Tucson, Arizona	.....	.....	.....	.....	32	0.0	42	W	.....	.....	.....	0	0	.....	.....	0.35	8.9	Foggy	
Tybee Island, Georgia	29.77	756.1	29.80	756.9	55	12.8	93	W	10	4.5	.....	.....	10ks	.....	W	0	0	Clear.....	
Umatilla, Oregon	29.97	761.2	.....	.....	34	1.1	79	Calm	0	0	.....	.....	10s	.....	Calm	0	0	Cloudy.....	
Vicksburg, Mississippi	29.72	754.9	29.99	761.7	51	10.6	86	W	2	0.9	.....	0	0	.....	.....	0	0	Cloudy.....	
Virginia City, Montana	24.24	615.7	29.72	754.9	12	—11.1	80	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Visalia, California	29.82	757.4	30.21	767.3	35	1.7	90	NW	1	0.4	.....	0	0	.....	.....	0	0	Clear.....	
Washington, D. C	29.86	758.4	29.98	761.5	42	5.6	91	SE	3	1.5	.....	.....	10s	.....	SE	0	0	Clear	
Wickenburg, Arizona	.....	.....	.....	.....	31	— 0.6	79	W	.....	.....	.....	5ck	0	Calm	.....	0.01	0.3	Cloudy.....	
Wilmington, N. Carolina	29.66	753.4	29.74	755.4	53	11.7	93	NE	12	5.4	.....	.....	10n	.....	NE	0	0	Fair	
Winnemucca, Nevada	25.70	652.8	30.06	763.5	24	— 4.4	87	S	12	5.4	.....	0	0	.....	.....	1.26	32.0	Light rain...	
Wood's Holl, Mass	29.94	760.5	29.99	761.7	38	3.3	71	NW	6	2.7	.....	Haze	0	.....	.....	0	0	Clear.....	
Yankton, Dakota	28.87	733.3	30.23	767.8	28	— 2.2	88	Calm	0	0	.....	.....	10n	.....	Calm	0	0	Clear.....	
Yuma, Arizona	29.96	761.0	30.13	765.3	45	7.2	84	N	4	1.8	.....	0	0	.....	.....	0.02	0.5	Light snow..	
Sub-Series.																0	0	Clear.....	
York Factory, B. A	30.12	765.0	30.18	766.6	4.0	—15.6	87	N	8	3.6	.....	2cs	0	N	.....	0	0	Fair.....	J. Fortescue, W. Wood.
Havana, Cuba, W. I	29.92	760.0	29.94	760.5	73	22.8	85	Calm	0	0	.....	.....	10n	.....	N	0.19	4.8	Light rain...	Chas. Hasselbrink.
Kingston, Jamaica, W. I	30.12	765.0	30.13	765.3	75	23.9	81	Calm	0	0	.....	5c	0	SE	.....	0	0	.....	James Gall.
Navassa, W. I	29.89	759.2	29.97	761.2	78	25.6	.....	SE	5	2.2	.....	.....	.....	.....	.....	0	0	Cloudy.....	F. M Everett.
St. Thomas, W. I	.....	.....	.....	.....	75	23.9	.....	E	4	1.8	.....	2c	2k	ENE	.....	0	0	.....	G. O. Gellich.
Paramaribo, D. Guiana, S. A	.....	.....	29.99	761.7	80	26.7	91	E	.....	.....	2	6ck	7ks	E	.....	0	0	⅛ Cloudy ...	C. J. Hering.
Batavia, Dutch Guiana, S. A	30.08	763.9	30.08	764.1	84.2	29	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0	Clear.....	Dr. H. Groot.
Medellin, Colombia, S. A	25.22	640.6	.....	.....	65.5	18.6	87	Calm	.....	.....	0	.....	10s;ks	.....	.....	0.56	14.2	Cloudy.....	Thomas Herran.
Honolulu, Oahu, H. I	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Daniel Smith.
Makawao, Maui, H. I	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo; for Batavia, the barometer reduced to freezing but not to sea-level. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Deadwood, (?); Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m. Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation. *Observation not simultaneous.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation

STATIONS AND VESSELS.	BAROMETER. As reported.* Inches.	BAROMETER. As reported.* Millimeters.	BAROMETER. Attached Thermometer. Fahrenheit.	BAROMETER. Attached Thermometer. Centigrade.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Up'er From—	CLOUDS. Direction. Low'r From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	SEA-SWELL. Character.	SEA-SWELL. Direction from—	WEATHER.	OBSERVER.
Navy Yard Mare Island, Cal.	30.13	765.3	46	7.8	43	6.1	92	ENE	4	1.8	.....	.....	0	.....	.....	0	0	.....	.....	Clear.....	
Navy Yard, Pensacola, Fla.	30.04	763.0	.....	.....	55	12.8	93	WNW	4	1.8	.....	.....	8	.....	.....	0	0	.....	.....	D. clouds.....	
Navy Yard, Portsmouth, N.H	30.01	762.2	62	16.7	32	0.0	69	W	.....	.....	1	.....	.....	.....	.....	0	0	.....	.....	Clear	
Naval Hospital, Yokohama, Japan.....	30.24	768.1	44.5	6.9	37	2.8	39	N	.....	.....	6	.....	0	.....	.....	0	0	.....	.....	Clear.....	
Alliance, Smyrna, Turkey.....	29.99	761.7	60	10.0	54	12.2	62	SE	.....	.....	1	.....	10	.....	Calm	.....	.....	.....	.....	Overcast.....	
Ashuelot. Shanghai, China.....	30.66	778.7	57	13.9	36	2.2	100	NNW	.....	.....	2	.....	10	.....	Calm	.....	.....	.....	.....	D. clouds.....	
Canonicus, New Orleans, La.....	29.95	760.7	42	5.6	53	11.7	93	WNW	.....	.....	2	.....	1	.....	.....	.....	.....	.....	.....	Pleasant.....	
Colorado, New York, N. Y.....	29.98	761.5	35	1.7	34	1 1	79	NNE	3	1.3	.....	.....	1	.....	NNE	0	0	.....	.....	Dense fog....	
Despatch, Constantinople, Turkey.	30.03	762.7	72	22.2	50	10.0	64	SSE	.....	.....	2	.....	6	.....	SW	.....	.....	.....	.....	Cloudy.....	
Essex, S. 11° 50′, E. 3° 59′.....	29.90	759.4	76	24.4	75	23.9	86	SSW	.....	.	2	.....	8	.....	.....	.....	.....	Long	SSW	D. clouds.....	
Franklin, Norfolk, Va.....	30.01	762.2	70	21.1	49	9.4	85	NE	3.5	1.6	.....	.....	.....	.....	NE	0.50	12.7	.....	.....	Overcast.....	
Guard, Lisbon, Portugal.....	30.20	767.1	61	16.1	63	17.2	56	NNW	.....	.....	2	.....	6	.....	NNW	.....	.....	.....	.....	D. clouds.....	
Lackawana, Mare Island, Cal.....	30.25	768.3	.....	.....	46	7.8	84	Calm	.....	.....	0	.....	0	.....	.....	.....	.....	.....	.....	Blue sky.....	
Marion, Villefranche, France.....	29.50	749.3	55	12.8	55	12.8	50	SW	.....	.....	1	.....	9	.....	NW	0	0	Smooth	S	D. clouds.....	
Michigan, Erie, Pa.....	29.40	746.7	55	12.8	41	5.0	65	NE	.....	.....	1	.....	10	.....	NE	.....	.....	.....	.....	Cloudy.....	
Monocacy, Hong-Kong, China.....	30.22	767.6	61	16.1	53	11.7	54	NNE	.....	.....	2-3	.....	9	.....	S	0	0	.....	.....	D. clouds.....	
New Hampshire, Port Royal, S.C.....	29.98	761.5	.....	.....	57	13.9	94	W	11	4.9	.....	.....	0	.....	.....	.....	.....	.....	.....	Misty.....	
Omaha, Valparaiso, Chili.....	30.08	764.0	64	17.8	59.5	15.3	76	SW	1	0.4	.....	.....	9	.....	S	0	0	.....	.....	Cloudy.....	
Onward, Callao, Peru.....	30.02†	762.5†	78	25.6	76	24.4	82	SE	.....	.....	2	.....	10	.....	.....	.....	.....	Long	W	D. clouds....	
Ossipee, Norfolk, Va.....	29.95	760.7	65	18.3	50	10.0	93	NE	.....	.....	2	.....	10	.....	NE	.....	.....	.....	.....	Raining.....	
Palos, Shanghai, China.....	30.64	778.2	44	6.7	36	2.2	90	NNW	.....	.....	3	.....	10	.....	N&W	.....	.....	.....	.....	Overcast.....	
Plymouth. Aspinwall.....	29.95	760.7	80	26.7	80	26.7	100	SE	.....	.....	2	.....	6	.....	.....	.....	.....	Smooth	NE	.....	
Powhatan, Norfolk, Va.....	.....	.....	.....	.....	49	9.4	100	NE	7.2	3.2	.....	.....	10	.....	.....	0.07	1.8	.....	.....	Rainy.....	
Ranger, Shanghai, China.....	30.72	780.3	.....	.....	43	6.1	83	N	.....	.....	2	.....	10	.....	Calm	.....	.....	.....	.....	Overcast.....	
Rio Bravo, Brownsville, Texas.....	29.93	760.2	.....	.....	62	16.7	??	E	.....	.....	1	.....	8	.....	S	.....	.....	.....	.....	D. clouds.....	
Santee, Annapolis, Md.....	30.07	763.8	73	22.8	41	5.0	82	NE	.....	.....	2	.....	9	.....	N&E	0	0	.....	.....	Cloudy.....	
Saratoga, Norfolk, Va.....	.....	.....	.....	.....	45	7.2	100	ENE	.....	.....	1	.....	10	.....	Calm	.....	.....	.....	.....	Rainy.....	
St. Louis, League Island, Pa	29.89	759.2	44	6.7	45	7.2	84	NE	6	2.7	.....	.....	10	.....	NE	0	0	.....	.....	Overcast.....	
Swatara, Norfolk, Va.....	30.00	762.0	.....	.....	55	12.8	80	NE	.....	.....	2	.....	10	.....	N&E	.....	.....	.....	.....	Raining.....	
Tennessee, Shanghai, China	30.62	777.7	72	22 2	36	2.2	100	N	.....	.....	4	.....	10	.....	N	0	0	.....	.....	Overcast.....	
Trenton, Off Villefranche, France	29.61	752.1	.....	.....	55	12.8	39	SW	20	8.9	.....	.....	3	.....	S&W	0	0	.....	.....	D. clouds.....	
Vandalia, Palermo, Sicily.....	29.71	754.6	61	16.1	58	14.4	76	W	.....	.....	1-3	.....	4	.....	W	.....	.....	.....	.....	Squally.....	
Wabash, Boston, Mass.....	29.99	761.7	54	12 2	30	-- 1.1	.....	W	2	0.9	.....	.....	9	.....	Calm	0	0	.....	.....	D. clouds.....	
Wyoming, Washington, D. C.....	30.52	775.2	.....	.....	43	6.1	.....	ESE	.....	.....	1	.....	10	.....	.....	.....	.....	.....	.....	Overcast.....	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. The position given for the Plymouth is that at noon, local time, instead of that at 7:35 a. m., Washington time.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	TRUE COURSE TOWARD—	HOURLY RATE IN KNOTS.	BAROMETER REDUCED TO SEA-LEVEL.		TEMPERATURE OF THE AIR.		RELATIVE HUMIDITY.	WIND.				CLOUDS.				SEA-SWELL.		WEATHER.	OBSERVER.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Character.	Direction from—		
S. S. Alaska																			
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			Capt. Seabury.
S. S. City of Peking, Yokohama, Japan			30.36*	771.1*	35	1.7	70	N			6		0			Smooth		Blue sky	Lt. Z. L. Tanner, U.S.N.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio. N. 28° 52′, E. 128° 07′			30.34	770.6	60	15.6		NE			6		4		NE	Mod'ate	NNE	D. clouds	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. *Aneroid.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.

S. S. Belgic, N. 40° 11′, E. 164° 4′			30.03*	762.7*				NW			7		Heavy		WNW	Heavy	NW	Drizzling	Capt. John Metcalf.
S. S. Gaelic, Hong-Kong, China			30.17†	766.8†	62	16.7	83	NNE			4		Haze					D. clouds	Capt. W. H. Kidley
S. S. Oceanic, N. 30° 18′, W. 160° 20′			30.00	762.0	68	20.0	90	W			3		3		W	Swell	WNW	D. clouds	Capt. H. Parsell.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. *Corrected for temperature and elevation; instrumental error not known. †Aneroid.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig																			Capt. Undütsch.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds.

UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Lo'wr	Upper.	Lower.	Character	Direction From—		
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second	0—10.	0—10.	0—10.	From—	From—				
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, N. 49° 46', W. 41° 01'			29.66*	753.4*	54	12.2	87	SSE			2		8		SE	Mod'ate	SSW	Overcast	Captain Sargent.
S. S. Ohio, N. 50° 28', W. 27° 45'			29.74	755.4	54	12.2	80	WSW			5		8		WSW	Mod'ate	Confused	Fair	Captain Morrison.
S. S. Pennsylvania																			Captain Harris.
RED STAR LINE MARINE SERIES.																			
Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.																			
S. S. Nederland																			Capt. Randle.
S. S. Switzerland																			Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.
ALLAN LINE MARINE SERIES.																			
Furnished by the coöperation of A. Schumacher, & Co., Agents.																			
S. S. Hibernian																			
S. S. Scandinavian, St. Johns, N. F.			29.40	746.7	38	3.3		ENE			5		4		E			D. clouds	Capt. W. Richardson.
MARINE SERIES. (Miscellaneous.)																			
Furnished by the coöperation of the Observer named.																			
Schooner Addie Fuller, Boothbay, Maine			29.96	761.0	28	— 2.2	77	NNW	2	0.9			0					Clear	Capt. James Jorgensen.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. * Aneroid

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

NOTE.—The originals for the schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^{d}.) Chief Signal Officer. U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON DECEMBER 27, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:48 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.

1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:18 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:38 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.

1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:28 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er. 0—10.	Clouds. Amount. Low'r. 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours			30.35	770.8	60.8	16.0	59	SW			1		9			0	0	Covered	Michel.
Algiers			30.14	765.6	61.5	16.4	66	NW			2		2			0	0	Fair	Peter.
La Calle			30.09	764.2	58.5	14.7	66	WNW			3		8			0.315	8.0	Very cloudy	Fleury.
Tunis			30.07	763.7	59.4	15.2	76	W			4		5			0	0	Cloudy	Jacques.
Sfax			30.16	766.0	57.2	14.0		W			2		1			0	0	Very fair	Husson.
Saida			30.24	768.0	49.5	9.7	84	WNW			3		6			0	0	Cloudy	Millot.
Tebessa																			Bassières.
Geriville			30.28	769.2	41.5	5.3	94	NW			2		8			0	0	Very cloudy	Lemaillot.
Laghouat			30.22	767.6	53.6	12.0	54	W			2		2			0	0	Fair	Guyot.
Biskra			30.24	768.0	66.0	18.9	32	NW			1		3			0	0	Pretty fair	Kuntz.

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890 meters, or 2,919.9 ? feet; Tebessa, 1,088 ? m., or 3,569.4 ? ft.; Geriville, 1,360 ? m.; or 4,461.7 ? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

Agram	29.03	737.4	29.66	753.0	28.6	— 1.9	86	Calm			0		2			0	0		Prof. Ivan Stoan
Cracow, I. R. Observatory	28.64	727.4	29.43	747.4	30.2	— 1.0	98	W			3		10			0	0		Dr. Wierzbiski.
Eperies	28.53	724.6	29.44	747.7	30.2	— 1.0	92	S			2		5c			0	0		Julius Mikolik.
Gratz	28.26	717.9	29.57	751.0	27.7	— 2.4	81	N			1		6			0.031	0.8		Andreas Rospini.
Hermannstadt	28.11	713.9	29.59	751.5	28.8	— 1.8	84	NW			5		5			0.061	1.55		Prof. Reissenberger.
Kremsmünster	28.18	715.6	29.58	751.2	28.8	— 1.8	96	W			2		10			0.276	7.0		Prof. C. Wagner.
Lemberg	28.34	719.9	29.36	745.7	29.3	— 1.5	98	NW			2		10			0	0		Dr. T. Stanecki.
Pola	29.49	749.1	29.61	752.0	47.3	8.5	76	SSW			1		10s			0	0		I.R.Hydrographic Office.
Szathmar	29.05	737.8	29.53	750.1	27.7	— 2.4	92	SW			5		9			0.197	5 0		Johann Tamas, S. J.
Szegedin	29.30	744.1	29.59	751.5	32.4	0.2	92	Calm			0		0			0	0		Karl Stancel.
Trieste	29.52	749.9	29.63	752.5	43.7	6.5	84	SW			1		9			0	0	Cloudy	P. Busin.
Vienna	28.79	731.2	29.50	749.3	36.0	2.2	63	W			3		10			0	0		I. R. Central Met. Obs'y.

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 348.5 meters, or 1,142.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

Arlon	28.12	714.3	29.60	754.0	29.8	— 1.2	92	WNW			2		5			0	0		Prof. M. Passau.
Brussels	29.37	746.0	29.68	751.2	35.6	2.0	81	WSW			4		4		WNW	0.004	0.10		Royal Observatory.
Furnes	29.58	751.4	29.61	752.0	39.2	4.0	64	WNW			6		8			0	0		M. E. de Cae.
Maeseyck	29.39	746.5	29.62	749.8	34.3	1.3	85	SW			4		5			0.043	1.1		M. Pierrot.

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

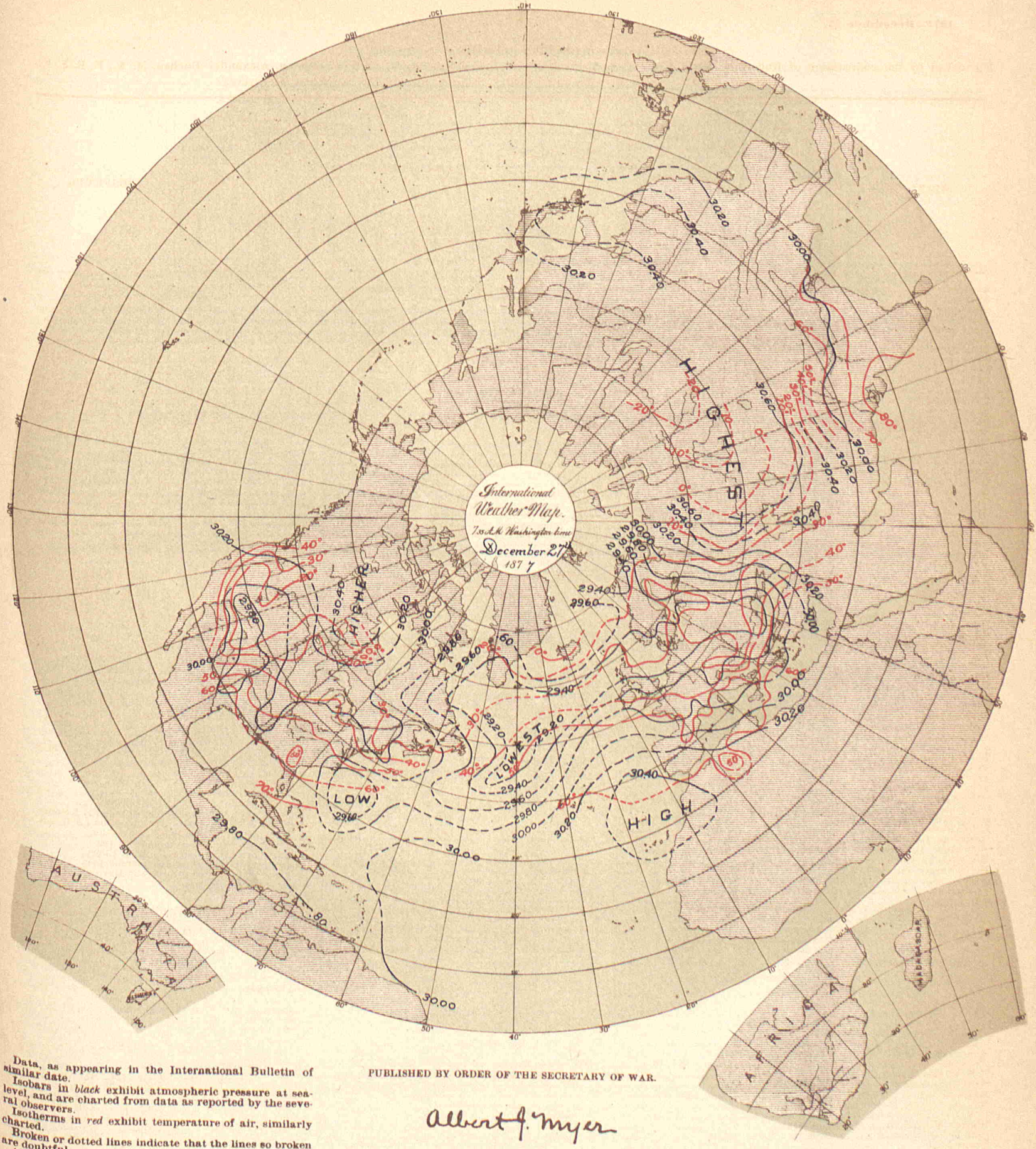
Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Aberdeen	29.24	742.7	29.34	745.2	33.5	0.8	.....	W	8	2.6	.....	.....	4	.....	.....	0	0	Blue sky.....	W. Boswell.
Ardrossan	29.44	747.8	29.45	748.0	38	3.3	.....	NW	.....	.....	5	.....	2	.....	.....	.....	.....	Blue sky.....	William McNeil.
Armagh, Observatory	.....	.....	29.62	752.3	33.0	0.6	.....	WSW	7	3.1	.....	.....	5	.....	.....	.....	.....	D. clouds.....	S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)	.....	.....	29.56	750.8	38.2	3.4	.....	WNW	38	17.0	.....	.....	7	.....	.....	.....	.....	D. clouds.....	John Hartnup.
Birr Castle, (Parsonstown)	.....	.....	29.77	776.1	37.0	2.8	.....	WSW	.....	.....	2	.....	1	.....	.....	.....	.....	Blue sky.....	J. Dreyer.
Bradford, Yorkshire	29.06	738.1	29.46	748.3	33.1	0.6	.....	N	.....	.....	1	.....	5	.....	.....	0	0	D. clouds.....	J. McLandsborough.
Bridgetown, (Barbados)	29.92	760.0	29.95	760.7	82	27.8	.....	NE	.....	.....	2	.....	3	.....	.....	.....	.....	D. clouds.....	Pvt. G. W. Roberts, A.
Cambridge, Observatory	.....	.....	29.56	750.8	35.0	1.7	.....	SW	.....	.....	1	.....	10	.....	.....	.....	.....	Overcast.....	H. Todd. [H. C.
Cardington	.....	.....	29.62	752.3	36.0	2.2	.....	W	.....	.....	1	.....	6	.....	.....	.....	.....	D. clouds.....	John McLaren.
Chatham, School M. E	29.48	748.8	29.62	752.3	39.2	4.0	.....	W	.....	.....	1	.....	2	.....	.....	.....	.....	Blue sky.....	Lt. W. G. Morris, R. E.
Dartmoor	28.25	717.5	29.75	755.6	35.0	1.7	.....	W	.....	.....	3	.....	7	.....	.....	.....	.....	Snowing.....	Alexander Watt.
Davos Platz (Switzerland)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Francis Redford, M. A.
Donaghadee	29.59	751.6	29.62	752.3	32	0.0	.....	WNW	.....	.....	3	.....	8	.....	.....	.....	.....	D. clouds.....	J. Mac Gowan.
Dover	29.62	752.3	29.64	752.8	36	2.2	.....	W	.....	.....	3	.....	2	.....	.....	.....	.....	¼ clouded..	J. Costello.
Eccles, (near Manchester)	.....	.....	29.54	750.3	33.0	0.6	.....	NW	0.8	0.4	.....	.....	8	.....	.....	.....	.....	Snowing.....	Thomas Mackereth.
Falmouth, Observatory	29.55	750.6	29.78	756.4	43.9	6.6	.....	NW	.....	.....	2	.....	10	.....	.....	.....	.....	Overcast.....	The Staff.
Fort Napier, (Natal)	27.65	702.3	29.87	758.7	76.2	24.6	.....	E	.....	.....	2	.....	10	.....	.....	.....	.....	Overcast.....	Pvt. G. Salmon, A. H. C
Free Town, (Sierra Leone)	.....	.....	29.98	761.5	89	31.7	.....	E	.....	.....	2	.....	3	.....	.....	.....	.....	D. clouds.....	
Galway, Queen's College	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	30.29	769.4	30.35	770.9	57.0	13.9	.....	NW	.....	.....	4	.....	4	.....	.....	.....	.....	D. clouds.....	Corpl. C. Aitken, A.H.C.
Glasgow, Observatory	29.24	742.7	29.44	747.8	35.0	1.7	.....	WNW	.....	.....	2	.....	7	.....	.....	.....	.....	Blue sky.....	D. G. Maclean.
Great Yarmouth	29.49	749.0	29.50	749.3	34	1.1	.....	W	.....	.....	4	.....	4	.....	.....	.....	.....	Misty.....	G. T. Watson.
Greenwich, Royal Obs'y	29.45	748.0	29.63	752.6	36.0	2.2	.....	W	.....	.....	2	.....	1	.....	.....	.....	.....	Blue sky.....	The Staff, for G. B. Airy.
Guernsey	29.52	749.8	29.74	755.4	43	6.1	.....	NW	.....	.....	2	.....	7	.....	.....	.....	.....	D clouds....	Dr. S. E. Hoskins, F.R.S.
Helston	.....	.....	29.77	756.1	46	7.8	.....	NW	.....	.....	2	.....	4ck	.....	.....	0.08	2.0	Fine.....	M. P. Moyle.
Holyhead	29.61	752.1	29.66	753.4	39	3.9	.....	NW	.....	.....	6	.....	3	.....	.....	.....	.....	D. clouds.....	John Tilston.
Jersey	29.47	748.5	29.76	755.9	43.0	6.1	.....	NW	.....	.....	3	.....	10	.....	.....	Blank	Blank	Overcast.....	J. Fisher.
Kew, Observatory	.....	.....	29.63	752.6	36.2	2.3	.....	W	10	4.5	.....	.....	2	.....	.....	.....	.....	Hazy.....	The Staff.
Kingstown	29.65	753.1	29.68	753.9	37	2.8	.....	WNW	.....	.....	5	.....	9	.....	.....	.....	.....	Overcast.....	George Mitchell.
Leicester, Museum	.....	.....	29.59	751.6	34.0	1.1	.....	W	.....	.....	2	.....	10	.....	.....	.....	.....	Overcast.....	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.89	759.2	29.97	761.2	61.2	16.2	.....	W	.....	.....	3	.....	6	.....	.....	.....	.....	D. clouds..	Sgt. Fred. Travis, A. H.
Nairn	29.20	741.7	29.30	744.2	35	1.7	.....	W	.....	.....	1	.....	5	.....	.....	.....	.....	⅛ clouded..	W. D. Penny. [C.
Nassau, (Bahamas)	.....	.....	29.92	760.0	69.8	21.0	.....	NW	.....	.....	1	.....	4	.....	.....	.....	.....	D. clouds.....	C. S. Duncombe.
Nottingham, Observatory	29.37	746.0	29.57	751.1	33.7	0.9	.....	WNW	.....	.....	1	.....	7k;d	.....	WNW	0.166	4.21	D. clouds.....	E. J. Lowe, F. R. S
Oscott, St. Mary's College	29.06	738.1	29.60	751.8	35.3	1.8	.....	NW	.....	.....	3	.....	9	.....	.....	.....	.....	D. clouds.....	Rev. Stephen Whitty.
Oxford, Radcliffe Obs'y	.....	.....	29.62	752.3	36	2.2	.....	W	.....	.....	2	.....	1	.....	.....	.....	.....	Blue sky.....	Mr. Lucas
Plymouth	29.67	753.6	29.74	755.4	40.9	4.9	.....	NW	.....	.....	1	.....	7	.....	.....	.....	.....	D. clouds.....	John Merrifield.
Roche's Point	29.75	755.6	29.80	756.9	39	3.9	.....	WNW	.....	.....	2	.....	5	.....	.....	.....	.....	Fine.....	W. Kennedy.
Saint Ann's Head	.....	.....	29.72	754.9	41	5.0	.....	WNW	.....	.....	4	.....	4	.....	.....	.....	.....	D. clouds.....	John C. Walker.
Sandwick Manse, (Orkneys	.....	.....	29.33	745.0	33	0.6	.....	SE	5	2.2	.....	.....	0	.....	.....	.....	.....	Blue sky.....	Rev. C. Clouston, L.L. D
Scutari, Cemetery, (Turkey	.....	.....	29.63	752.6	55.0	12.8	.....	SW	.....	.....	3	.....	1	.....	.....	Blank	Blank	D. clouds.....	Sergt. W. H. Lyne.
Sheffield	29.37	746.0	29.66	753.4	37.4	3.0	.....	WSW	.....	.....	2	.....	6	.....	.....	0	0	D. clouds.....	W. F. Cooper.
Silloth Rectory	29.47	748.5	29.50	749.3	36.6	2.6	74	NW	.....	.....	2	.....	0	.....	.....	0	0	Blue sky.....	Rev. F. Redford, M. A.
Stonyhurst, Observatory	.....	.....	.....	.....	32.2	0.1	.....	W	.....	.....	4	.....	7	.....	.....	.....	.....	D. clouds.....	Rev. S. J. Perry.
Stornoway, Lews C., (Hebr.)	.....	.....	29.26	743.2	35	1.7	.....	WNW	.....	.....	4	.....	5	.....	.....	.....	.....	D. clouds.....	John Smith.
Stratfield Turgiss	29.42	747.3	29.64	752.8	37.0	2.8	.....	W	.....	.....	1	.....	2	.....	.....	.....	.....	Blue sky.....	Rev. C. H. Griffith, F.M.S.
Thurso	.....	.....	29.29	744.0	29	— 1.7	.....	Calm	.....	.....	0	.....	3	.....	.....	.....	.....	Blue sky.....	John Trotter.
Truro, Royal Institution	.....	.....	29.73	755.1	45	7.2	.....	NW	.....	.....	6	.....	8	.....	.....	.....	.....	Gloomy.....	W. Newcombe.
Valencia, Observatory	.....	.....	29.82	757.4	41.7	5.4	.....	Calm	0	0	.....	.....	4	.....	.....	.....	.....	Misty.....	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Henry Mercer.
Cape Good Hope, Obs'y	29.89	759.2	29.93	760.2	89.0	31.7	33	SE	9	4.0	.....	0	0	.....	.....	.....	.....	.....	The Staff, for E. J. Stone.
Hobart Town, (Tasmania)	.....	.....	30.01	762.2	62.0	16.7	82	SE	.....	.....	2	.....	10n	.....	.....	0	0	Covered.....	Francis Abbott, F.R.A.S.
Leith, Restalrig Park	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Andrew Gibb.
Mauritius, Observatory	29.66	753.4	29.85	758.2	82.5	28.1	68	N	8.5	3.8	.....	3	4	.....	NNW	0.13	3.3	Fine.....	C. Meldrum.
Melbourne, Observatory	29.78	756.4	29.87	758.7	61.8	16.6	87	SW	10	4.5	.....	.....	8	.....	.....	0	0	Threatening	R. L. J. Ellery.
Monach L't-house, (Hebrides)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Youngclause.
North Unst, (Shetland Is.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Robert Burnet.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m.

Marine Series. Vessels.	Sea or swell. Height scale 0—9	Sea or swell. Direction from—	Weather.	Observer
S. S. Algeria, N. 50° 35′, W. 21° 50′	10*	NNE; WNW	Rain and fog	Capt. W. Watson
S. S. Batavia	.....	.....	.....	Capt. J. E. Moulund.
Ship Camperdown	.....	.....	.....	Capt. A. T. Miller.
Brig Catherine	.....	.....	.....	Capt. Adam Smith.
Barque Celeste	.....	.....	.....	Capt. D. F. McKechnie.
S. S. Hibernia	.....	.....	.....	Capt. W. R. Cato
Barque Maroon	.....	.....	.....	Capt. A. T. Brown.
Ship Mikado	.....	.....	.....	Capt. C. C. Prehn.
Royal Alice, N. 45° 25′, W. 39° 25′	4	Confused.	D. clouds.....	Capt. E. M. Hughes.
S. S. Seine	.....	.....	.....	Capt. H. Manning.
Barque Sorata	.....	.....	.....	Capt. Jas. J. Price.
Schooner Traveller	.....	.....	.....	Capt. Alex Simpson
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in fe weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. *Feet.



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
San José	26.19	665.2			66.2	19.0	88	SE			1	4pc	2s			0	0		Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.26	743.2	29.31	744.4	33.1	0.6	90	SE			2		10						
Fanöe	29.26	743.2	29.28	743 7	30.6	— 0.8	92	NE			2		8						
Godthaab, (Greenland)	29.34	745.1	29.38	746.2	22.8	— 5.1	88	NE			2		9						
Stykkisholm, (Iceland)	29.71	754.6	29.75	755.7	8.1	—13.3	100	E			4		5						
Thorshavn, (Faröe)	29.41	747.0	29.45	747.9	34.2	1.2	92	ESE			2		10						Snowing
Vestervig	29.13	740.0	29.30	744.3	27.0	— 2.8	94	Calm			0		0						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

Alençon, Normal School	29.24	742.6	29.79	756.6	41.0	5	85	SW			4		5		SW	0.04	1.	Cloudy	Collignon, Director.
Amiens, Normal School	29.54	750.2	29.65	753.1	37.0	2.8	83	W			3		8		W	0.079	2.0	Very cloudy	Bonvarne, Director.
Avignon, Normal School	29.79	756.6	29.87	758.6	41.7	5.4	94	NE			1		10					Raining	Mr. Giraud, Director
Bar-sur-Seine	29.16	740.7	29.74	755.5	37.2	2.9	89	WSW			1		8kn		SW	0.126	3.2	Very cloudy	C. Saillard.
Beaumette Obs'y (Angers)	29.56	750.7	29.71	754.7	44.4	6.9	97	W	2.0	0.9					SW	0.098	2.5		Albert Cheux.
Beauvais	29.41	747.0	29.70	754.4	39.0	3.9	67	W			2		5		WNW	0.020	0.50	Cloudy	Normal School.
Besançon	28.88	733.5	29.80	756.8	39.2	4	90	S			4		8		SW	0.138	3.5	Very cloudy	Normal School.
Bourg-en-Bresse	28.96	735.6	29.86	758.5	40.5	4.7	93	SE			2		10n		SW	0.24	6.	Raining	Normal School.
Bourges, Normal School	29.19	741.5	29.76	755 8	41.7	5.4	97	W			6		5		W	0	0	Cloudy	A. Wagner, Director.
Brest, Naval Observatory	29.47	748.4	29.69	754 0	47.3	8.5	86	N			1		10		Calm	0.157	4.00	Raining	The Staff.
Carcassonne, Normal School	29.48	748.7	29.90	759.4	51.8	11	97	W			2		2		NW	0.138	3.5	Slightly cl'dy	Vateau, Director.
Caen	29.69	754 0	29.76	755.9	43.2	6.2	90	W			2		5		N	0.04	1.	Cloudy	Normal School.
Chartres, Normal School	29.13	739.9	29.71	754.5	42.3	5.7		WNW			1		6		S	0.16	4.		Lequin, Director.
Châlons-sur-Marne, N. Sch'l	29.37	745.9	29.69	754.2	36.7	2.6	93	NW			2		5ck		NW	0.059	1.5	Cloudy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.41	721.6	29.78	756.4	44.4	6.9	62	S			1		10		W	0.055	1.4	Covered	Alluard, Director.
Commercy, Normal School	28.84	732.4	29.74	755.5	34.5	1.4	85	WNW			2		5		WNW	0.31	8.	Cloudy	Dr. Goulet, Director.
Commune de Gréasque*	28.75	730.3	29.89	759.3	44.1	6.7	83	W			2		10		W			Light rain	M. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	29.5	749.5	29.72	755.0	47.1	8.4	97	W			2		10			0.197	5.0	Covered	Mouillot, Director.
Le Mans, Normal School	29.43	747.6	29.75	755.6	41.5	5.3	91	W			2		8		W	0.049	1.25	Very cloudy	Poirrier, Director.
Lons-Le-Saulnier, N.School	28.85	732.8	29.79	756.6	39.7	4.3	90	S			4		8		N	0.283	7.20	Light rain	Voudez, Director.
Lorient, Naval Observatory	29.64	752.9	29.74	755.5	49.6	9.8	76	E			3		10			0.177	4.5	Covered	T. Carré, Director.
Mâcon, Normal School	29.07	738.3	29.77	756.2	40.5	4.7	85	Calm			0		10			0.453	11.5	Covered	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	28.64	727.4	29.71	754.7	34.9	1.6	89	W			2		10		E	0	0	Covered	Normal School.
Nismes, Normal School	29.67	753.7	29.88	759.0	49.3	9.6	81	NE			1		2		W	0	0	Slightly cl'dy	Boyer, Director.
Orleans, Normal School	29.32	744.6	29.70	754.3	41.4	5.2	87	SW			2		8		SW	0.008	0.2	Very cloudy	Bernard, Director.
Paris, Observatory	29.46	748.3	29.71	754.5	41.4	5.2	65	WSW			1		10		WNW	0.045	1.14	Covered	National Observatory.
Privas	28.78	731.0	29.87	758.6	42.8	6	78	SW			1		10		SW	0	0	Covered	Normal School
Rochefort, Naval Obs'y	29.72	754.9	29.75	755.7	50.7	10.4	100	WSW			1		10		ENE	0.20	5.	Raining	Lt. Decante, Director.
Rouen, Normal School	29.61	752.1	29.70	754.3	41.9	5.5	60	WNW			2		10		NW	0.146	3.7	Covered	F. Lucard, Director.
Tarbes, Normal School	28.89	733.7	29.98	761.5	49.1	9.5	95	W			6		10		WSW	0.87	22.	Raining	T. Hugues, Director.
Villefranche	29.16	740.6	29.89	759.1	44.4	6.9	87	ESE			4		10		W	0.087	2.2	Covered	Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.80	757.0	29.83	757.7	78.8	26										0	0		L'Abbé Marchési.
Marseilles, Observatory			29.86	758.4	48.4	9.1	90	W			2		10			0.020	0.50	Covered	The Staff.
Mont-Louis	24.72	628.9	30.04	763.0	38.8	3.8	55	SW	7.4	3.33			10		W	0	0		Mr. Falguère.
Paris, Montsouris Obs'y	29.41	747.1	29.60	751.9	55.4	13.0	41	NW			6		3?			0	0	Cloudy?	Dr. A. Niepce.
Perpignan			29.69	754.1	41.4	5.2	65	W			3		10		W	0.024	0.6		Marié Davy, Director.
Pic du Midi, (Summit,) H. P.			29.86	758.4	54.1	12.3	77	NW	7.4	3.33			10		NW	0.016	0.4		Dr. Fines.
Pic du Midi, (Plantade,) H. P.	22.36	568.0			26.8	— 2.9		WNW			8		10			1.016	25.8	Snowy	M. Baylac.
Saint Maur, (near Paris)	29.54	750.3	29.71	754.5	41.0	5.0	66	WSW			1		10		WNW	0.012	0.3		Gen'l de Nansouty.
Toulouse, Observatory	29.18	741.1	29.90	759.4	53.2	11.8	86	W			6		10			0.329	8.35	Rainy	E. Renou.
Tours	29.56	750.7	29.75	755.7	43.2	6.2	94	W			1		10		W	0	0		The Staff.
Versailles, (near Paris)			29.70	754.4	41.7	5.4	73	WNW			1		9			0.090	2.27	Almost cov'd	C. Marquet.
Zi-Ka-Wei, (near Shanghai)	30.39	772.0	30.42	772.6	37.8	3.2	97	NW	5.6	2.5			10k			0.335	8.5	Covered	Dr. A. Bérigny.
																			Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p.m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published. At Mirecourt and Rochefort the cloud directions are apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,201.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,368 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.: local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg																			Prof. Dr. Hoh.
Berlin	29.15	740.4	29.33	745.0	32.4	0.2	83	S			2		7			0.133	3.38		Prof. Arndt.
Breslau	28.89	733.7	29.41	746.9	30.9	— 0.6	77	W			2		10			0.055	1.40	Snowing	Royal University Obs'y.
Carlsruhe	29.20	741.6	29.63	752.6	35.6	2.0	66	SW			2		9			0.315	8.0	Snowing	Albert Senz.
Cassel	28.87	733.4	29.47	748.5	33.6	0.9	84	W			5		5	SW		0.059	1.50	Snowing	Dr. H. Möhl.
Crefeld	29.32	744.6	29.48	748.7	34.0	1.1	79	W			2		2			0.04	1.		Director Lose.
Emden	29.38	746.2	29.41	747.1	33.3	0.7	98	W			0		10			0.177	4.5		Prof. Prestel.
Frankfort on the Main	29.21	742.0	29.59	751.6	35.2	1.8		W			4		3			0.08	2.		Physical Society.
Friedrichshafen	29.04?	737.5?	29.69	754.2	35.1	1.7	94	NW			6		10	WNW		0.185	4.7	Rain & snow	M. Wilhelm.
Hamburg	29.17	741.6	29.24	742.8	32.2	0.1	96	NW			2		10			0.126	3.2	Light fog	Captain F. Hegemann.
Kiel	29.22	742.1	29.23	742.5	34.5	1.4	88	SE			2		10			0.029	0.74		Prof. G. Karsten.
Königsberg, (Prussia)	29.27	743.4	29.35	745.5	23.0	— 5.0	88	SE								0	0	Covered	Prof. E. Luther.
Köslin			29.35	745.4	25.7	— 3.5		S			2		1			0	0		H. Müller.
Leipsic, Observatory	28.98	736.0	29.41	747.0	32.4	0.2	74	WSW			5		10	W		0.028	0.7	Light snow	Prof. Bruhns.
Memel, Naval School	29.35	745.4	29.39	746.5	21.6	— 5.8	98	NE			1		10k;s						Reinbrech von Skalweit.
Neufahrwasser	29.37	746.0	29.39	746.4	20.8	— 6.2	84	Calm			0		10			0	0		A. Lothes.
Posen	29.10	739.1	29.41	747.0	25.0	— 3.9	91				1							Covered	Dr. Magener.
Strassburg Obs., (in Alsace	29.13	740.0	29.70	754.3	36.9	2.7	67				2		10	W		0.161	4.1	Snowing	Dr. Schur.
Stuttgart	28.64	727.4	29.61	752.0	34.3	1.3	73				1		10			0.161	4.1	Light snow	Prof. Schoder.
Treves, (Trier)	29.03	737.3	29.54	750.4	34.0	1.1	68	W			6		5			0	0		Prof. Flesch.
Weissenburg, (Bavaria)	28.04	712.1	29.60	751.7	30.0	— 1.1	98	NW	9	4			8ck	NW	NW	0.193	4.9	Light snow	Dr. Von Bebber.
Wustrow, Naval School	29.27	743.4	29.31	744.5	31.3	— 0.4	97	SE			3		10			0	0	Covered	E. F. Schütz.
GERMAN NAVAL SERIES.																			

NOTE.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Königsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4. Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines, Königsberg, Posen and Wustrow in cubic zolls. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens

Athens	29.37	746.0	29.76	756.0	57.7	14 3		S			1.5							Clear	Dr. J. F. J. Schmidt.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and wind-force; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.83	757.6	29.88	758.9	73.5	23.1	86	WSW	17.0?	7.6?			8		WNW	0	0	D. clouds	
Deesa	29.44	747.8	29.91	759.8	85.4	29.7	51	Calm					0			0	0	Blue sky	
Bombay	29.83	757.6	29.86	758.5	82.4	28.0	73	W	11.0	4.9			7	W		0	0	D. clouds	
Poona	27.90	708.8	29.90	759.4	81.9	27.7	45	E					4			0	0	D. clouds	
Lahore	29.19	741.4	29.96	761.0	61.6	16.4	83	Calm	0.7	0.3			10			0	0	Cloudy	
Belgaum	27.36	695.0	29.91	759.6	76.0	24.4	53	ESE	2.0	0.9			1			0	0	D. clouds	
Bangalore																			
Roorkee	29.06	738.2	30.00	762.1	60.2	15.6	91	SE	2.7	1.2						0	0	Foggy	
Agra	29.41	747.0	30.00	761.9	65.8	18.8	70	W					5			0	0		
Trichinopoly																			
Nagpur	28.90	732.9	29.96	760.8	74.6	23.7	56	Calm	2.3	1.0			9		E	0	0	D. clouds	
Madras																			
Lucknow	29.61	752.0	30.00	761.9	64.4	18.0	83	Calm	1.0	0.4			10			0	0	Overcast	
Allahabad	29.66	753.4	29.98	761.6	66.5	19.8	76	Calm	1.1	0.5			0			0	0	Blue sky	
Patna	29.82	757.5	30.02	762.4	61.8	16.6	94	W	0.6	0.3			6	W	W	0	0	D. clouds	
Hazaribagh	27.94	709 8	30.01	762.2	67.0	19.4	47	W	4.9	2.2			0			0	0	Blue sky	
Cuttack	29.87	758.7	29.96	760.8	77.0	25.0	57	NNW	0.3	0.1			0			0	0	Blue sky	
Calcutta (Alipore)	29.96	761.0	29.98	761.5	70.5	21.4	73	Calm					0			0	0	Blue sky	
Goalpara	29.59	751.7	29.99	761.8	71.5	21.9	62	Calm	1.4	0.6			0			0	0	Blue sky	
Chittagong	29.92	759.9	30.01	762.3	70.3	21.3	85	Calm	6.0	2.7			0			0	0	Blue sky	
Sibsagar	29.68	753.9	30.03	762.7	63.9	17.7	86	E	0.7	0 3			10			0	0	D. clouds	
Rangoon																			
Jubbulpore	28.60	726.3	29.98	761.6	73.0	22.8	60	NW	1.1	0.5			0			0	0	Blue sky	

NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Valdobbia	21.70?	551.3?	29.72	754.9	14.9	— 9.5	100	NW	.....	.....	8	.....	10	.....	.....	11.811*	300.0*	.....	Ab. Dom. Morgini.
Stelvio	21.63	549.4	29.61	752.1	14.4	— 9.8	.....	SSW	.....	.....	6	.....	10	.....	.....	0	0	.....	Signora Ernesta Manfredi.
Udine	29.16	740.6	29.58	751.3	40.3	4.6	71	E	2.5	1.1	.....	.....	10	.....	.....	0	0	.....	Prof. Giovanni Clodig.
Padua	29.47	748.5	29.58	751.4	36.7	2.6	86	SW	1.3	0.6	.....	.....	5	E	.....	0	0	.....	Prof. Dott. Lorenzoni.
Vicenza	29.39	746.6	29.60	751.7	38.5	3.6	71	ENE	0.7	0.3	.....	.....	1	.....	.....	0	0	.....	Conte Alm. Da Schio.
Verona	29.36	745.8	29.60	751.7	40.3	4.6	82	NE	.....	.....	1	.....	0	.....	.....	0	0	.....	Dott. B. Bertoncelli.
Bergamo	28.25	717.6	29.63	752.5	39.9	4.4	62	SSW	.....	.....	2	.....	1	.....	.....	0	0	.....	Prof. Trionfini Carlo.
Domodossola	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Giuseppe Calza.
Milan	29.07	738.4	29.62	752 4	41.4	5.2	.....	W	.....	.....	1	.....	4	NNW	.....	0	0	.....	Ab. Gio. Capelli.
Pavia	29.24	742.6	29.60	751 8	47.3	8.5	73	W	.....	.....	1	.....	0	.....	.....	0	0	.....	Prof. Gio. Cantoni
Moncalieri	28.65	727.6	29.59	751.6	50.2	10.1	29	WNW	16.8	7.5	.....	.....	1	.....	.....	0	0	.....	Prof. P. F. Denza.
Mondovi	27.68	703.1	29.67	753.5	49.1	9.5	22	SE	.....	.....	2	.....	1	.....	.....	0	0	.....	Prof. D. C. Bruno.
Porto Maurizio	29.46	748.2	29.69	754.0	50.5	10.3	72	E	.....	.....	4	.....	1	.....	.....	0	0	.....	Prof. L. Vassallo.
Genoa	29.49	749.0	29.66	753.4	52.9	11.6	54	SW	0.7	0.3	.....	.....	0	.....	.....	0	0	.....	Prof. G. M. Garibaldi
Piacenza	29.34	745.2	29.60	751.9	39.4	4.1	72	W	3.1	1.4	.....	.....	0	.....	.....	0	0	.....	Dott. G. Manzi.
Parma	29.29	744.0	29.62	752.3	43.5	6.4	70	SSE	.....	.....	4	.....	0	.....	.....	0	0	.....	Prof. P. Pigorini.
Florence	29.43	747.6	29.70	754.4	43.3	6.3	92	SE	.....	.....	2	.....	10	SW	.....	0	0	.....	Cav. F. Meucci.
Leghorn	29.57	751.0	29.65	753.2	52.0	11.1	67	W	1.8	0.8	.....	.....	5	W	.....	0	0	.....	Prof. P. Monte.
Siena	28.47	723.0	29.71	754.6	48 9	9.4	64	SW	16.1	7.2	.....	.....	4	W	.....	0.067	1.7	.....	Prof. L. Toscani.
Urbino	28.08	713.2	29.69	754 2	45.1	7.3	71	SW	.....	.....	6	.....	0	.....	.....	0	0	.....	Prof. P. Serpieri.
Pesaro	29.57	751.0	29.62	752 3	48.7	9.3	67	W	19.2	8.6	.....	.....	0	.....	.....	0	0	.....	Prof. Luigi Guidi.
Ancona	29.54	750.3	29.65	753.1	51.8	11.0	56	SW	.....	.....	4	.....	1	.....	.....	0	0	.....	Prof. F. DeBosis.
Grosseto	29.62	752.4	29.74	755.3	54.5	12.5	56	WNW	.....	.....	6	.....	6	NW	.....	0.346	8.8	.....	Avv. P. Ponticelli.
Rome	29.58	751.4	29.76	756.0	50.7	10.4	76	N	1.8	0.8	.....	.....	2	.....	.....	0.079	2.0	.....	Prof. P. A Secchi.
Naples, O. U	29.58	751.3	29.78	756.5	55.8	13.2	73	NNW	.....	.....	1	.....	9	W	.....	0.354	9.0	.....	Prof. L. Palmieri.
Lecce	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. C. De Giorgi.
Cosenza	28.97	735.8	29.88	759.0	49.5	9.7	65	NE	1.3	0.6	.....	.....	10	.....	.....	0.650	16.5	.....	Prof. F. D. Conti.
Cagliari	29.72	754.9	29.92	759.9	58.1	14.5	55	NW	.....	.....	4	.....	4	.....	.....	0.012	0.3	.....	Prof. A. Pacinotti
Riposto, (Sicily)	.....	.....	.....	.....	59.5	15.3	66	SE	.....	.....	2	.....	3	E	.....	0	0	.....	Prof. F. Caflero.
Palermo	29.60	751.9	29.86	758.5	58.5	14.7	51	W	9.4	4.2	.....	.....	7	.....	.....	0	0	.....	Prof. G. Cacciatore.
Caltanissetta	27.93	709.4	29.92	759.9	52.0	11.1	71	W	.....	.....	6	.....	0	.....	.....	0	0	.....	Prof. A. Pagani.
Syracuse	29.76	756.0	29.84	757.9	56.1	13.4	71	W	.....	.....	4	.....	6	SW	.....	0	0	.....	Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.26	743.3	29.82	757.4	52.2	11.2	68	NW	0	0	.....	.....	9	.....	.....	0.197	5.0	.....	Prof. F. Brioschi.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give the wind-force on the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,543.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Siena, 348.5 m., or 1,143.3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft * Unmelted snow.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Tokei (Yeddo)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	The Observatory.
Tokei (Yeddo) University	30.28	769.0	30.39	771.9	31	— 0.6	74	N	1	0.4	.....	.....	.....	.....	.....	0	0	Clear	Prof. P. V. Veeder.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Aguascalientes	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	I. N. Marin, M. D.
Córdoba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	C. Peña, M. D.
Cuernavaca	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	L. Castillo, A. E.
Guadalajara	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. L. Perez.
Guanajuato	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. V. Fernandez.
Leon	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. M. Leal.
Mexico	23.02	584.8	30.11	764.8	54.5	12.5	59	SW	14.6	7.08	.....	0	0	.....	.....	0	0	Clear	Central Observatory.
Orizaba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	N. N.
Orizaba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	I. Orozco, M. D.
Pabellon, (Aguascalts)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. V. de Leon, M. E.
Puebla	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. B. Gonzalez.
Toluca	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. C. Velazquez.
Tlacotalpam	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. F. R. Bayly.
San Luis Potosi	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	G. Barroeta, M. D.
Vera-Cruz	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. J. Rossell.
Zacatecas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. A. Bonilla, M. E.
Puebla, (Catholic Institute)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	P. Spina. [M. M. D. D.
Morelia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Tena, F. L. Páramo

NOTE.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,290 m., or 7,512.9 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m,, or 8,611.8 ft.; San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

Furnished by the cooperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	29.55	750.5	29.55	750.5	38.8	3.8	.....	W	.....	.....	5	.....	.....	.....	.....	0.028	0.7	.....	
Groningen	29.28	743.7	29.34	745.1	33.6	0.9	.....	NNW	.....	.....	2	.....	.....	.....	.....	0.382	9.7	.....	
Helder	29.39	746 4	29.39	746.4	38.8	3.8	.....	W	.....	.....	6	.....	.....	.....	.....	0 106	2.7	.....	
Hellevoetsluis	.....	.....	29.49	749.1	37.6	3.1	64	WNW	.....	.....	5	.....	.....	.....	.....	.....	.....	.....	
Utrecht	29.43	747.5	29.48	748.7	36.1	2.3	72	W	.....	.....	5	.....	5	.....	.....	0.094	2.4	Cloudy	H. v d Brink.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Barometer: Corrected for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	29.26	743.2	29.32	744 6	25.9	— 3.4	87	Calm	0	0	.....	.....	4	.....	.....	0	0	.....	
Brōno	29.45	748.0	29.49	749.0	24.4	— 4.2	59	NE	18	8	.....	.....	3	.....	.....	0	0	.....	
Christiania	29.30	744.1	29.45	748.0	23.7	— 4.6	86	NE	0	0	.....	.....	10	.....	.....	.....	.....	Light snow..	
Tromsō	29.28	743.6	29.32	744.7	16.0	— 8.9	78	Calm	0	0	.....	.....	0	.....	.....	0	0	.....	

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	30.05	763.3	30.24	768.2	62.1	16.7	8[illegible]	SSW	9.8	4.4	.....	.....	6	.....	.....	0	0	.....	Dr. J. A. Sampaio
Campo Major	29.30	744.2	30.35	770.8	50.9	10.5	87	SW	8.7	3.9	.....	.....	10	.....	WNW	0	0	.....	Dr. A. M. R. dos Santos
Funchal, (Madeira)	30.35	771.0	30.43	772.8	61.7	16.5	65	SE	3.8	1.7	.....	.....	10	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	30.00	761.9	30.36	771.1	56.3	13.5	82	WNW	15.0	6.7	.....	.....	9	.....	WSW	0.012	0.3	.....	The Staff.
Ponta Delgada, (Azores)	30.23	767.7	30.30	769.5	65.5	18.6	69	SW	6.9	3.1	.....	.....	3	.....	.....	0	0	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 9 h. 6 m., p. m.

Naval Series. Vessels.	Sea or swell: Height scale 0–9	Sea or swell: Direction from—		
S. Bartholomew Dias	.....	.....	.....	
S. S. India	.....	.....	.....	R, A. T. Pinha, Com'd't.
S.S. Mindello	.....	.....	.....	A. D. Pedroso, Com'd't.
S. S. Sado	.....	.....	.....	J. F. R. R. Bastos, Com'd't.
S. S. Sá da Bandeira	.....	.....	.....	A. N. P. Sampaio, Com'd't.
S S. Tejo	.....	.....	.....	F. Texeira da Silva, Com'd't.
.....	.....	.....	.....	F. J. Ferreina, dos Amas, Com'

NOTE.—The originals, except for S. S. Tejo, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the cooperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	28.91	734.2	29.34	745.3	25.3	— 3.7	93	NW	4	2	.....	.....	10n	.....	.....	.....	.....	Snowing	Astronomical Obs.
Wilna	28.93	734.9	29.36	745.8	31.6	— 0.2	97	ESE	4	2	.....	.....	10	.....	.....	.....	.....	Hea'y clouds	Astronomical Obs.
Dorpat	29.33	744.9	29.58	751.3	29.5	— 1.4	100	ESE	7	3	.....	.....	10n	.....	.....	.....	.....	.....	Prof. Dr. Weihrauch
St. Petersburg	29.69	754.1	29.71	754.5	29.1	— 1.6	97	SE	16	7	.....	.....	10n	.....	.....	.....	.....	Snowing	Central Physical Obs.
Kuopio	29.43	747.6	29.77	756.1	25.9	— 3.4	95	SE	18	8	.....	.....	10	.....	.....	Blanc	Blank	.....	Ch. Forsten.
Kieff	28.76	730.4	29.42	747.2	24.1	— 4.4	98	ESE	18	8	.....	.....	10n	.....	.....	.....	.....	Heavy snow	Physical Cabinet
Nikolaiev	29.24	742.7	29.31	744.5	38 3	3.5	98	ESE	31	14	.....	.....	10n	.....	.....	.....	.....	Light rain	Kurdakof.
Kertch	29 63	752.6	29.65	753.1	36.3	2.4	100	ENE	9	4	.....	.....	10	.....	.....	.....	.....	.....	Lagorio.
Moscow	29.58	751.3	30.17	766.2	21.2	— 6.0	93	S	13	6	.....	.....	10s	.....	.....	.....	.....	.....	Meteorological Obs.
Lugan	29.70	754.3	29.91	759.7	32.7	0.4	76	ESE	22	10	.....	.....	9s	.....	.....	.....	.....	.....	Meteorological Obs.
Archangel	30.02	762.6	30.04	763.1	18.3	— 7.6	95	SSE	7	3	.....	.....	10	.....	.....	.....	.....	Snowing	Ogorodnikof.
Tiflis	28.74	730 1	30.24	768.1	31.3	— 0 4	83	Calm	0	0	.....	.....	8ks	.....	.....	.....	.....	.....	Physical Observatory
Astrakhan	30.41	772.5	30.33	770 4	20.3	— 6.5	60	ESE	13	6	.....	.....	0	.....	.....	.....	.....	.....	Sebastianof.
Kasan	30.39	772.0	30.70	779 7	4.8	—15.1	87	SE	2	1	.....	.....	0	.....	.....	.....	.....	.....	Physical Cabinet
Orenburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Tschernischet.
Ekaterinburg	29.67	753.7	30.75	781.6	— 2.2	—19.0	82	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Meteorological Obs
Nukuss	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Kasaly	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Tashkend	28.73	729.7	30.63	778.0	10.8	—11.8	93	NE	2	1	.....	.....	.....	.....	.....	.....	.....	.....	Bobrof.
Barnaul	30.15	765 7	30.77	781.6	—21.6	—29.8	82	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Michelson.
Yeniseisk	30.48	774.3	30.87	784.2	—26.7	—32.6	86	W	2	1	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Light clouds	Marks.
Oorga	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Usolzef.
Krotkowo*	30.14	765.6	30.67	778.9	3.9	—15.6	78	SE	2	1	.....	.....	0	.....	.....	.....	.....	.....	Mossin.
Peking, (China)	30.23	767.9	30.37	771.5	17.6	— 8.0	62	Calm	0	0	.....	.....	2k	.....	.....	.....	.....	.....	Cand. Fatjanow.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Physical Observatory
Vladivostock	30.17	766.3	30.21	767.3	15.6	— 9.1	91	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Meteorological Obs.
Nikolaievsk, on the Amoor	.....	.....	.....	.....	— 6.2	—21.2	72	W	2	1	.....	.....	0	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall; for Krotkowo, the barometer reduced to freezing but not to sea level. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 502 m., or 1,[illegible] ft.; Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft. * N. 55° 47′, E. 48° 34′.

SPANISH SERIES.

Furnished by the cooperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Rave, Director.
Bilbao, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Manuel de Naveran
Burgos, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Domingo Martin y Perez.
Madrid, Royal Observatory	27.96	710.1	30.24	768.0	49.8	9.9	77	SW	15.7	7.00	.....	3	6	N	.....	0	0	Clouds	The Staff.
Murcia, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Olayo Diaz, Director.
Santiago, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. Gil Villanueva, Dir.
SUB-SERIES.																			
Havana, Cuba, W. I.	29.99	759.4	29.96	761.1	65.1	18.4	88	NNE	6.9	2.7	.....	0	3k	.....	E	0.154	3.9	Fair	Benito Vines, S. J.
San Fernando, Naval Obs'y	30.28	769.1	30.38	771.7	55.2	12.9	79	WNW	10.6	4.7	.....	0	10	.....	NW	0	0	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de PortoRico, W. I.	.....	.....	29.91	759.8	76.3	24.6	92	SE	0	0	.....	3cs	2k	Calm	Calm	0.010	0.25	Clear	Leonardo de Tejeda, Chief of Engineers.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. m. instead of 8:19 a. m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the cöoperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Low'r 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.73	755.1	29.77	756.1	30.2	— 1.0	.....	S	.....	.....	4	.....	10	.....	.....	.....	.....	Snowing	
Umea	29.56	750.9	29.61	752.2	29.8	— 1.2	100	S	.....	.....	2	.....	10	.....	.....	0.532	13.5	.....	
Hernosand	29.50	749.2	29.56	750.9	26.2	— 3.2	94	Calm	.....	.....	0	.....	5	.....	.....	0.528	13.4	.....	
Stockholm	29.28	743.7	29.46	748.2	30.6	— 0.8	92	N	.....	.....	2	.....	9	.....	.....	0.004	0.1	.....	
Wisby	29.39	746.6	29.45	748.1	28.0	— 2.2	87	SE	.....	.....	4	.....	3	.....	.....	0.067	1.7	.....	
Sub-Series.																			
Upsala	29.43	747.4	29.50	749.3	21.7	— 5.7	100	NE	0	0	.....	.....	6	.....	.....	0.036	0.93	.....	Dr. Hildebrandsson.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the cooperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.35	720.0	29.81	757.2	41.4	5.2	72	SSW	.....	.....	6	.....	10	.....	.....	0.181	4.6	Covered.	The Observatory.
Zurich	28.06	712.6	29.77	756.1	33.1	0.6	93	W	.....	.....	2	.....	10	.....	.....	0.118	3.0	Snowing	The Observatory.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—For Geneva the corresponding departures from the normal values are: Barometer, —7.6 mm.; Thermometer, +3.6 cent.; Relative Humidity, —9 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the cooperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	29.65	753.1	59.0	15.0	67	SW	6	2.5	.....	.....	2	.....	SW	0.185	4.7	.....	The Observatory.
Fao, (Persian Gulf)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salonica	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	B. Stefanides.
Valona	.....	.....	29.74	755.3	56.3	13.5	.....	SW	.....	.....	2	.....	2	.....	.....	1.61	41.	Rain-squalls	A. Bertrand.
Varna	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Imperial Observatory.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.91	759.7	30.03	762.8	55.9	13.3	75	SE	.....	.....	1	.....	10n	.....	SW	0.07	1.8	Raining	Prof. C. V. A. Van Dyck

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the cooperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army

Bathurst, N. B.	29.84	757.9	29.91	759.7	19.1	— 7.2	86	Calm	0	0	.....	0	.....	.....	.....		.....	.....	Hon. J. Ferguson.
Brockville, Ontario	29.75	755.6	30.07	763.8	29	— 1.7	.....	NE	7	3.1	.....	.....	8s	.....	NE	0	0	Cloudy	W. R. Bigg.
*Chatham, N. B.	29.83	757.7	29.89	759.2	20	— 6.7	94	SW	1	0.4	.....	0	2ks	.....	Calm	0	0	Fair	G. A. Blair.
Charlottetown, P. E. Island.	29.83	757.7	29.87	758.7	33	0.6	91	N	3	1.3	.....	.....	8ks	.....	N	0.075	1.91	Cloudy	H. J. Cundall, C. E.
Cornwall, Ontario	29.82	757.4	30.02	762.5	27.0	— 2.8	96	NE	.....	.....	1	.....	10s	.....	.....	0	0	Cloudy	James Smith, M. A.
Dalhousie, N. B.	.....	.....	.....	.....	22	— 5.6	83	W	.....	.....	1	.....	.....	.....	.....	0	0	Bright	H. A. Johnson.
Esquimault, B. C.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0	.....	W. H. Bevis.
*Father Point, Quebec	29.97	761.2	29.99	761.7	27	— 2.8	90	W	12	5.4	.....	.....	10n	.....	W	0	0	Cloudy	J. McWilliams.
Fredericton, N. B.	29.90	759.4	29.96	761.0	22.0	— 5.6	86	W	8.0	3.6	.....	0	0	.....	.....	0	0	Clear	Prof. Harrison.
*Fort Garry, Manitoba	29.46	748.3	30.35	770.9	22	— 5.6	96	N	11	4.9	.....	Haze	Haze	N	N	0.020	0.51	Hazy	James Stewart.
Goderich, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	H. J. Strang, M. A.
Granton, Ontario	28.87	733.3	30.01	762.2	34	1.1	79	NE	.....	.....	1	1cs	0	W	.....	0	0	Clear	James Grant.
*Halifax, N. S.	29.73	755.1	29.86	758.4	33	0.6	90	NW	3	1.3	.....	.....	8ks	.....	.....	Inap.	Inap.	Cloudy	F. Allison, M. A.
Hamilton, Ontario	29.67	753.6	30.05	763.3	35.7	2.1	91	NE	.....	.....	1	5cs	.....	E	.....	0	0	Clearing	Geo. Dickson, M. A
Heart's Content, N. F.	29.59	751.6	29.61	752.1	34	1.1	89	N	.....	.....	1	.....	10	.....	.....	0.03	0.8	Foggy	E. Weedon.
*Kingston, Ontario	29.68	753.9	30.03	762.7	31	— 0.6	94	NE	5	2.2	.....	.....	10s	.....	Calm	0	0	Cloudy	S. Woods, M. A
Little Glace Bay, N. S.	29.77	756.1	29.81	757.2	32.8	0.4	.....	N	10	4.5	.....	7k	.....	N	.....	0	0	Hazy	C. H. Rigby.
*Montreal, Quebec	29.84	757.9	30.05	763.3	26	— 3.3	93	E	4	1.8	.....	10k	Haze	NW	.....	0	0	Cloudy	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.35	745.5	30.07	763.8	34	1.1	89	NE	6	2.7	.....	5k	5ks	E	E	0.01	0.3	Cloudy	Rev. R. Mosley
Peterboro, Ontario	29.26	743.2	30.04	763.0	33.7	0.9	78	E	.....	.....	1	0	0	.....	.....	0	0	Bright	J. F. Jeffers, B. A.
Port Dover, Ontario	29.28	743.7	29.99	761.7	35	1.7	90	NE	11	4.9	.....	10k	0	N	.....	0.09	2.3	Cloudy	H. Morgan.
Port Hastings, N. S.	29.77	756.1	29.82	757.4	32.6	0.3	.....	N	3	1.3	.....	.....	.....	.....	.....	0	0	Fine	Peter Grant.
Port Stanley, Ontario	29.33	745.0	30.00	762.0	35	1.7	88	N	6	2.7	.....	10ks	.....	E	0.06	1.5	Cloudy	M. Payne.
*Quebec, Quebec	29.73	755.1	30.08	764.0	21	— 6.1	85	Calm	0	0	.....	Fog	.....	.....	.....	0	0	Dense fog	Capt. Ashe, R. N
*Rockliffe, Ontario	29.62	752.3	30.09	764.3	33	0.6	95	Calm	0	0	.....	10s	.....	.....	NW	0	0	Cloudy	W. H. McIntyre.
St. John, N. B.	29.67	753.6	29.84	757.9	28	— 2.2	88	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	G. Murdock, C. E.
*Saugeen, Ontario	29.31	744.5	30.04	763.0	32	0.0	91	Calm	0	0	.....	.....	10ks	.....	.....	0	0	Cloudy	K. Stewart.
Stayner, Ontario	29.27	743.4	30.07	763.8	35	1.7	69	Calm	0	0	.....	.....	10ks	.....	E	0	0	Cloudy	R. J. Cole.
Stratford, Ontario	28.76	730.5	30.09	764.3	32.1	0.1	89	Calm	0	0	.....	.....	10s	.....	.....	0	0	Cloudy	C. J. MacGregor, M. A.
*Sydney, C. B.	29.78	756.4	29.81	757.2	28	— 2.2	92	W	2	0.9	.....	.....	10s	.....	.....	0	0	Cloudy	T. C. Hill.
*Toronto, Ontario	29.64	752.8	30.04	763.0	35	1.7	75	NE	5	2.2	.....	5cs	5s	NE	NE	0.02	0.5	Cloudy	Magnetic Observatory.
Windsor, N. S.	29.80	756.9	29.90	759.4	34.5	1.4	67	W	2	0.9	.....	0	4k	.....	.....	0	0	Fair	Prof. John E. Oram.
Woodstock, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Montgomery.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	33.0	0.6	.....	N	.....	.....	.....	5k	5s	.....	.....	0.02	0.5	Fair	John Delany
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.78	756.4	30.02	762.5	26	— 3.3	88	Calm	0	0	.....	.....	10s	.....	Calm	0	0	Cloudy	
Alpena, Michigan	29.40	746.7	30.06	763.5	37	2.8	90	NE	2	0.9	.....	.....	10s	.....	NE	0.02	0.5	Cloudy	
Atlantic City, New Jersey	29.90	759.4	29.92	760.0	44	6.7	92	NE	16	7.2	.....	0	8ks	.....	NW	0	0	Cloudy	
Augusta, Georgia	29.71	754.6	29.89	759.2	52	11.1	93	NW	4	1.8	.....	.....	10n	.....	N	0.16	4.1	Light rain	
Baltimore, Maryland	29.89	759.2	29.94	760.5	46	7.8	76	NE	6	2.7	.....	.....	10s	.....	NE	Inap.	nap.	Cloudy	
Barnegat, New Jersey	29.92	760.0	29.94	760.5	45	7.2	84	E	14	6.3	.....	8k	2s	Calm	E	0	0	Cloudy	
Bismarck, Dakota	28.36	720.3	30.11	764.8	31	— 0.6	89	Calm	0	0	.....	.....	10s	.....	N	Inap.	Inap.	Cloudy	
Boise City, Idaho	27.26	692.4	30.14	765.5	21	— 6.1	78	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Boston, Massachusetts	29.84	757.9	30.00	762.0	29	— 1.7	67	NW	8	3.6	.....	0	Sm'e	.....	.....	0	0	Smoky	
Brackettville, Texas	28.70	729.0	29.72	754.9	60	15.6	94	S	2	0.9	.....	.....	10n	.....	S	0.49	12.4	Light rain	
Breckenridge, Minnesota	29.12	739.6	30.16	766.1	30	— 1.1	95	NE	9	4.0	.....	.....	10s	.....	Calm	0.02	0.5	Cloudy	
Brownsville, Texas	29.82	757.4	29.88	758.9	66	18.9	90	E	2	0.9	.....	.....	10s	.....	E	0	0	Cloudy	
Buffalo, New York	29.24	742.7	29.95	760.7	36	2.2	95	NE	6	2.7	.....	.....	10s	.....	NE	0.02	0.5	Cloudy	
Burkes, Arizona																			
Burlington, Vermont	29.79	756.7	30.06	763.5	25	— 3.9	88	NE	4	1.8	.....	.....	Fog	.....	.....	0	0	Foggy	
Cairo, Illinois	29.59	751.6	29.99	761.7	49	9.4	85	NW	4	1.8	.....	.....	10s	.....	NW	0.06	1.5	Cloudy	
Camp Grant, Arizona																			
Camp Verde, Arizona	26.72	678.7	30.21	767.3	26	— 3.3	88	NW	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Campo, California																			
Cape Hatteras, N. Carolina	29.56	750.8	29.57	751.1	53	11.7	93	Calm	0	0	.....	.....	10s	.....	SW	2.54	64.5	Cloudy	
Cape Henry, Virginia	29.69	754.1	29.71	754.6	50	10.0	100	NE	48	21.5	.....	.....	10n	.....	Calm	1.96	49.8	Light rain	
Cape Lookout, N. Carolina	29.53	750.0	29.55	750.6	52	11.1	93	NW	28	12.5	.....	.....	10s	.....	NW	0.15	3.8	Cloudy	
Cape May, New Jersey	29.87	758.7	29.90	759.4	44	6.7	92	NE	16	7.2	.....	.....	10s	.....	E	0	0	Cloudy	
Charleston, South Carolina	29.78	756.4	29.84	757.9	53	11.7	79	N	6	2.7	.....	.....	10s	.....	N	0.02	0.5	Cloudy	
Cheyenne, Wyoming	23.90	607.0	29.84	757.9	21	— 6.1	85	N	7	3.1	.....	.....	10n	.....	Calm	0.11	2.8	Light snow	
Chicago, Illinois	29.28	743.7	29.98	761.5	42	5.6	74	NE	6	2.7	.....	.....	10s	.....	NE	0.05	1.3	Cloudy	
Cincinnati, Ohio	29.24	742.7	29.88	758.9	46	7.8	84	N	7	3.1	.....	.....	10s	.....	N	0.05	1.3	Cloudy	
Cleveland, Ohio	29.23	742.4	29.97	761.2	39	3.9	100	NE	12	5.4	.....	.....	10n	.....	Calm	0.07	1.8	Light rain	
Concho, Texas	27.95	709.9	29.62	752.3	50	10.0	92	NW	8	3.6	.....	8cs	0	NW	.....	0.38	9.7	Cloudy	
Corsicana, Texas	29.46	748.3	29.94	760.5	45	7.2	84	NE	6	2.7	.....	2ck	2s	Calm	Calm	0	0	Fair	
Davenport, Iowa	29.40	746.7	30.05	763.3	37	2.8	80	NE	1	0.4	.....	.....	10s	.....	Calm	Inap.	Inap.	Cloudy	
Deadwood, Dakota	25.45	646.4	.....	.....	22	— 5.6	72	NW	3	1.3	.....	.....	10s	.....	Calm	0	0	Cloudy	
Denison, Texas	29.18	741.2	29.99	761.7	43	6.1	100	NE	4	1.8	.....	.....	10n	.....	Calm	0.15	3.8	Light rain	
Denver, Colorado	24.71	627.6	29.93	760.2	24	— 4.4	74	N	5	2.2	.....	.....	10s	.....	Calm	0.15	3.8	Cloudy	
Detroit, Michigan	29.28	743.7	29.97	761.2	36	2.2	90	N	4	1.8	.....	0	1s	.....	Calm	0.08	2.0	Clear	
Dodge City, Kansas	27.30	693.4	29.63	752.6	36	2.2	90	S	2	0.9	.....	.....	10s	.....	Calm	0	0	Cloudy	
Dubuque, Iowa	29.35	745.5	30.07	763.8	36	2.2	90	NE	3	1.3	.....	.....	10n	.....	Calm	0.01	0.3	Light rain	
Duluth, Minnesota	29.41	747.0	30.11	764.8	35	1.7	85	NE	6	2.7	.....	.....	10s	.....	NE	Inap.	Inap.	Cloudy	
Eagle Pass, Texas	29.05	737.9	29.78	756.4	60	15.6	94	NE	4	1.8	.....	.....	10s	.....	Calm	Inap.	Inap.	Cloudy	
Eastport, Maine	29.85	758.2	29.92	760.0	28	— 2.2	67	NW	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Erie, Pennsylvania	29.21	741.9	29.93	760.2	42	5.6	91	NE	8	3.6	.....	.....	10s	.....	.....	0.13	3.3	Cloudy	
Escanaba, Michigan	29.42	747.3	30.10	764.5	34	1.1	79	N	4	1.8	.....	.....	10s	.....	N	0.03	0.8	Cloudy	
Florence, Arizona	28.42	721.9	30.02	762.5	34	1.1	44	NW	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Fort Bayard, New Mexico	23.96	608.6	29.96	761.0	25	— 3.9	38	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Fort Craig, New Mexico	25.42	645.7	.....	.....	10	—12.2	58	NW	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Fort Gibson, Indian Ter	29.41	747.0	29.96	761.0	45	7.2	92	N	4	1.8	.....	.....	10s	.....	Calm	0.05	1.3	Cloudy	
Fort Griffin, Texas	28.61	726.7	29.87	758.7	54	12.2	87	SE	3	1.3	.....	0	8ks	.....	S	0.02	0.5	Cloudy	
Fort St. Michael, Alaska																			
Fort Sill, Indian Territory	28.70	729.0	29.83	757.7	43	6.1	92	NE	6	2.7	.....	.....	10s	.....	N	0.02	0.5	Cloudy	
Galveston, Texas	29.90	759.4	29.94	760.5	58	14.4	87	SE	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Grand Haven, Michigan	29.36	745.7	30.03	762.7	41	5.0	82	NE	4	1.8	.....	0	5s	.....	NE	0	0	Fair	
Indianapolis, Indiana	29.13	739.9	29.91	759.7	46	7.8	88	NE	7	3.1	.....	.....	10s	.....	Calm	0.05	1.3	Threatening	
Indianola, Texas	29.90	759.4	29.92	760.0	60	15.6	88	SE	8	3.6	.....	2k	0	S	.....	0	0	Clear	
Jacksboro, Texas	28.77	730.7	29.91	759.7	45	7.2	92	E	8	3.6	.....	.....	10s	.....	E	0.65	16.5	Cloudy	
Jacksonville, Florida	29.86	758.4	29.88	758.9	52	11.1	86	W	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Keokuk, Iowa	29.37	746.0	30.00	762.0	38	3.3	100	N	4	1.8	.....	.....	10n	.....	Calm	0.05	1.3	Light rain	
Key West, Florida	29.93	760.2	29.96	761.0	66.0	18.9	78	NE	6	2.7	.....	1c	0	W	.....	0	0	Clear	
Kittyhawk, North Carolina	29.52	749.8	29.54	750.3	54	12.2	100	NE	44	19.7	.....	.....	10n	.....	NE	4.87	123.7	Light rain	
Knoxville, Tennessee	28.88	733.5	29.88	758.9	50	10.0	93	Calm	0	0	.....	.....	10n	.....	Calm	0.10	2.5	Misting	
La Crosse, Wisconsin	29.30	744.2	30.06	763.5	37	2.8	100	N	2	0.9	.....	.....	10n	.....	Calm	0.03	0.8	Light rain	
La Mesilla, New Mexico	25.96	659.4	30.11	764.8	27	— 2.8	70	N	1	0.4	.....	5k	0	W	.....	0	0	Fair	
Laredo, Texas					63	17.2	89	SE	6	2.7	.....	.....	10s	.....	Calm	Inap.	Inap.	Cloudy	
Leavenworth, Kansas	29.15	740.4	30.02	762.5	38	3.3	90	NE	5	2.2	.....	.....	10ks	.....	NE	0	0	Cloudy	
Los Angeles, California	29.68	753.9	30.02	762.5	43	6.1	75	N	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Louisville, Kentucky	29.33	745.0	29.89	759.2	47	8.3	100	N	6	2.7	.....	.....	10n	.....	NW	0.03	0.8	Light rain	
Lynchburg, Virginia	29.18	741.2	29.86	758.4	49	9.4	85	NE	2	0.9	.....	.....	10s	.....	W	0.07	1.8	Cloudy	
Maricopa Wells, Arizona					30	— 1.1	47	N	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Marquette, Michigan	29.34	745.2	30.06	763.5	38	3.3	71	N	8	3.6	.....	.....	10n	.....	Calm	0.17	4.3	Light rain	
Mason, Texas	28.24	717.3	29.99	761.7	52	11.1	93	Calm	0	0	.....	5s	0	Calm	.....	0	0	Fair	
Memphis, Tennessee	29.66	753.4	29.98	761.5	50	10.6	100	NW	4	1.8	.....	.....	10s	.....	NW	0.02	0.5	Cloudy	
Milwaukee, Wisconsin	29.34	745.2	30.04	763.0	36	2.2	100	N	.....	.....	.....	.....	10n	.....	.....	0.11	2.8	Light rain	
Mobile, Alabama	29.94	760.5	29.98	761.5	52	11.1	93	Calm	0	0	.....	.....	10s	.....	N	0	0	Cloudy	
Montgomery, Alabama	29.72	754.9	29.95	760.7	55	12.8	86	NW	3	1.3	.....	.....	10s	.....	N	0	0	Cloudy	
Morgantown, West Virginia	28.82	732.0	29.87	758.7	49	9.4	93	NE	3	1.3	.....	.....	Fog	.....	.....	0	0	Foggy	
Mt. Washington, N. H.	23.64	600.4	30.00	762.0	23	— 5.0	60	NE	24	10.7	.....	0	0	.....	.....	0	0	Clear	
Nashville, Tennessee	29.39	746.5	29.92	760.0	51	10.6	93	W	5	2.2	.....	.....	10s	.....	N	0.13	3.3	Cloudy	
New Haven, Connecticut	29.88	758.9	30.00	762.0	30	— 1.1	67	N	8	3.6	.....	0	0	.....	.....	0	0	Clear	
New London, Connecticut	29.94	760.5	29.99	761.7	30	— 1.1	78	N	8	3.6	.....	0	1s	.....	Calm	0	0	Clear	
New Orleans, Louisiana	29.91	759.7	29.97	761.2	54	12.2	80	N	4	1.8	.....	5c	0	N	.....	0	0	Fair	
Newport, Rhode Island	29.93	760.2	29.99	761.7	31	— 0.6	89	N	5	2.2	.....	0	Fog	.....	.....	0	0	Fair	
New York, New York	29.78	756.4	29.97	761.2	40	4.4	56	NE	12	5.4	.....	.....	10ks	.....	Calm	0	0	Cloudy	
Norfolk, Virginia	29.68	753.9	29.74	755.4	48	8.9	100	NE	16	7.2	.....	.....	10n	.....	NE	1.33	33.8	Heavy rain	
North Platte, Nebraska	27.05	687.1	29.71	754.6	29	— 1.7	74	NE	4	1.8	.....	.....	10n	.....	Calm	0.01	0.3	Light snow	
Olympia, Washington Ter.	30.19	766.8	30.23	767.8	39	3.9	100	SE	2	0.9	.....	.....	Fog	.....	Calm	0.01	0.3	Foggy	
*Omaha, Nebraska	28.92	734.6	30.03	762.7	33	0.6	89	N	4	1.8	.....	.....	10s	.....	Calm	0.01	0.3	Cloudy	
Oswego, New York	29.67	753.6	30.00	762.0	39	3.9	91	NE	3	1.3	.....	8c	2s	SW	.....	0	0	Cloudy	
Pembina, Dakota	29.41	747.0	30.29	769.4	24	— 4.4	100	N	10	4.5	.....	.....	10cfg	.....	Calm	0.02	0.5	Cloudy	
Philadelphia, Pennsylvania	29.91	759.7	29.96	761.0	39	3.9	81	NE	11	4.9	.....	.....	10s	.....	W	0	0	Cloudy	
Phœnix, Arizona																			
Pike's Peak, Colorado	17.38	441.4	29.59	751.6	—11	—23.9	52	NW	2	1.3	.....	.....	10s	.....	NW	0.02	0.5	Cloudy	
Pioche, Nevada	25.90	607.0	29.67	753.6	14	—10.6	91	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Pittsburg, Pennsylvania	29.06	738.1	29.86	758.4	47	8.3	92	NE	3	1.3	.....	.....	10	.....	SE	0.07	1.8	Cloudy	
Port Huron, Michigan	29.29	744.0	29.96	761.0	37	2.8	90	NW	8	3.6	.....	.....	10s	.....	NW	0.02	0.5	Cloudy	
Portland, Maine	29.93	760.2	29.98	761.5	33	0.6	79	W	3	1.3	.....	1k	Fog	Calm	.....	0	0	Clear	
Portland, Oregon	30.20	767.1	30.30	769.6	37	2.8	80	E	1	0.4	.....	0	0	.....	.....	Inap.	Inap.	Clear	
Prescott, Arizona	24.64	625.8	30.00	762.0	11	—11.7	40	E	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Punta Rassa, Florida	29.95	760.7	29.97	761.2	62	16.7	71	NW	8	3.6	.....	5k	0	NW	.....	0	0	Fair	
Red Bluff, California	29.76	755.9	30.14	765.5	35	1.7	90	NW	6	2.7	.....	0	0	.....	.....	0	0	Clear	

UNITED STATES SERIES.—CONTINUED

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Rochester, New York	29.35	745.5	29.98	761.5	37	2.8	90	NE	4	1.8	.....	.....	10s;fg	.....	NE;Calm	0	0	Cloudy	
Roseburg, Oregon	29.67	753.6	30.28	769.1	31	— 0.6	94	Calm	0	0	.. ..	2c	Fog	Calm	Calm	0	0	Fair	
Sacramento, California	30.05	763.3	30.14	765.5	38	3.3	100	Calm	0	0	.....	0	Fog	.....	Calm	0	0	Foggy	
St. Louis, Missouri	29.38	746.2	29.96	761.0	44	6.7	100	N	6	2.7	.....	.....	10s	.....	Calm	0.11	2.8	Light rain	
St. Marks, Florida	29.92	760.0	29.93	760.2	48	8.9	100	NW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
St. Paul, Minnesota	29.20	741.7	30.05	763.3	34	1.1	90	N	6	2.7	.....	.....	Fog	.....	Calm	0	0	Foggy	
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salt Lake City, Utah	25.62	650.7	29.94	760.5	20	— 6.7	100	NE	6	2.7	.....	0	0	.....	.....	0.35	8.9	Clear	
San Antonio, Texas	29.23	742.4	29.81	757.2	57	13.9	100	NE	4	1.8	.....	.....	10n	.....	NE	0.74	18.8	Thunder-storm	
San Diego, California	30.00	762.0	30.07	763.8	46	7.8	78	NE	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Sandusky, Ohio	29.28	743.7	29.97	761.2	41	5.0	91	NE	9	4.0	.....	.....	Fog	.....	Calm	0.06	1.5	Light rain	
Sandy Hook, New Jersey	29.93	760.2	29.96	761.0	40	4.4	82	NE	17	7.6	.....	.....	8ks	.....	NE	0	0	Cloudy	
San Francisco, California	30.06	763.5	30.13	765.3	47	8.3	85	NW	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Santa Fé, New Mexico	28.07	586.0	29.61	752.1	10	—12.2	58	N	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Savannah, Georgia	29.78	756.4	29.87	758.7	53	11.7	79	N	10	4.5	.....	.....	10s	.....	NW	0	0	Cloudy	
Shreveport, Louisiana	29.80	756.9	30.02	762.5	47	8.3	92	Calm	0	0	.....	.....	10s	.....	Calm	0	0	Cloudy	
Smithville, North Carolina	29.69	754.1	29.72	754.9	50	10.0	93	NW	9	4.0	.....	.....	10s	.....	NW	0.57	14.5	Cloudy	
Springfield, Massachusetts	29.83	757.7	29.97	761.2	28	— 2.2	57	E	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Stockton, Texas	26.88	682.7	29.88	758.9	42	5.6	50	N	8	3.6	.....	.....	10s	.....	W	0	0	Cloudy	
Thatcher's Island, Mass	29.94	760.5	30.00	762.0	35	1.7	80	NW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Toledo, Ohio,	29.29	744.0	29.98	761.5	40	4.4	91	N	8	3.6	.....	.....	10s	.....	N	0.24	6.1	Cloudy	
Tucson, Arizona	.....	.....	.....	.....	31	— 0.6	41	W	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Tybee Island, Georgia	29.81	757.2	29.84	757.9	53	11.7	86	NW	16	7.2	.....	.....	10ks	.....	W	0	0	Cloudy	
Umatilla, Oregon	30.08	764.0	.....	.....	32	0.0	79	NE	8	3.6	.....	.....	10s	.....	NE	0	0	Cloudy	
Vicksburg, Mississippi	29.76	755.9	30.02	762.5	52	11.1	86	NW	2	0.9	.....	.....	10s	.....	W	0	0	Cloudy	
Virginia City, Montana	24.28	616.7	29.76	755.9	13	—10.6	81	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Visalia, California	29.78	756.4	30.17	766.3	38	3.3	100	Calm	0	0	.....	.....	10s;fg	.....	Calm	0	0	Cloudy	
Washington, D. C	29.81	757.2	29.93	760.2	44	6.7	92	NE	6	2.7	.....	.....	10s	.....	NE	0.03	0.8	Cloudy	
Wickenburg, Arizona	.....	.....	.....	.....	27	— 2.8	88	NW	.....	.....	.....	8k	0	Calm	.....	0	0	Fair	
Wilmington, N. Carolina	29.63	752.6	29.71	754.6	50	10.0	86	NW	18	8.0	.....	.....	10s	.....	NW	0.84	21.3	Cloudy	
Winnemucca, Nevada	25.67	652.0	30.03	762.7	10	—12.2	79	SW	5	2.2	.....	8c	0	Calm	.....	0	6	Fair	
Wood's Holl, Mass.	29.95	760.7	30.01	762.2	37	2.8	71	E	2	0.9	.....	Haze	0	.....	.....	0	0	Clear	
Yankton, Dakota	28.78	731.0	30.12	765.0	32	0.0	89	N	7	3.1	.....	.....	10s	.....	Calm	0.04	1.0	Cloudy	
Yuma, Arizona	29.88	758.9	30.05	763.3	44	6.7	75	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
SUB-SERIES.																			
York Factory, B. A.	30.41	772.4	30.46	773.7	— 9.0	—22.8	78	NW	9	4.0	.....	2c	0	SW	.....	0	0	Fair	J. Fortescue, W. Wood.
Havana, Cuba, W. I.	29.94	760.5	29.96	761.0	70	21.1	75	Calm	0	0	.....	4k	4n	NE	.....	0.04	1.0	Cloudy	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.06	763.5	30.07	763.8	76	24.4	81	Calm	0	0	.....	2c	2s	SE	SE	0	0	.....	James Gall.
Navassa, W. I.	29.86	758.4	29.94	760.5	79	26.1	.....	SE	10	4.5	.....	.....	.....	.....	.....	0	0	Fair	F. M Everett.
St. Thomas, W. I.	.....	.....	.....	.....	75	23.9	.....	E	3	1.3	.....	.....	10n	.....	.....	0	0	Foggy	G. O. Gellich.
Paramaribo, D. Guiana, S. A.	.....	.....	30.00	762.0	81	27.2	87	E	.....	.....	2	.....	8ks	.....	.....	0.960	24.4	Cloudy	C. J. Hering.
Batavia, Dutch Guiana, S. A	30.04	763 0	30.05	763.2	83.8	28.8	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.295	7.50	Cloudy	Dr. H. Groot.
Medellin, Colombia, S. A.	25.19	639.8	.....	.....	65.3	18.5	82	SE	.....	.....	1	.....	10s	.....	.....	0	0	Cloudy	Thomas Herran.
Honolulu, Oahu, H. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Daniel Smith.
Makawao, Maui, H. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo; for Batavia, the barometer reduced to freezing but not to sea-level. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters: Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m.; Camp Verde 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Deadwood, (?); Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,862.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m. Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.. Yankton, 1,278 ft. or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation

STATIONS AND VESSELS.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er —10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
NavyYard Mare Island, Cal.	30.10	764.5	44	6.7	41	5.0	100	Calm	0	0	.....	.....	1n	.....	.....	0	0	.....	.....	.....	
Navy Yard, Pensacola, Fla.	30.04	763.0	.....	.....	57	13.9	94	N	3	1.3	.....	.....	10	.....	.....	0	0	.....	.....	D. clouds.....	
NavyYard, Portsmouth, N.H	30.03	762.7	64	17.8	28	— 2.2	88	W	.....	.....	1	.....	.....	.....	.....	0	0	.....	.....	Clear	
Naval Hospital, Yokohama, Japan.....	30.30	769.6	47	8.3	34	1 1	79	N	.....	.....	1	.....	2s;hz	.....	NW	0	0	.....	.....	Fair	
Alliance, Smyrna, Turkey.....	29.87	758.7	64	17.8	63	17.2	86	WSW	.....	.....	2	.....	2	.....	W	.....	.....	.....	.....	Clear.....	
Ashuelot. Shanghai, China.....	30.45	773.4	52	11.1	38	3.3	100	WNW	.....	.....	2	.....	10	.....	Calm	.....	.....	.....	.....	D. clouds. ..	
Canonicus, New Orleans, La.....	29.96	761.0	43	6.1	52	11.1	86	N	.....	.....	2	.....	6	.....	.....	.....	.....	.....	.....	Cloudy..	
Colorado, New York, N. Y.....	29.97	761.2	40	4.4	39	3.9	64	N	6	2.7	.....	.....	9	.....	N	0	0	.....	.....	Light fog.....	
Despatch, Constantinople, Turkey.	29.75	755.6	63	17.2	60	15.6	60	SW	.....	.....	2	.....	2	.....	SW	.....	.....	.....	.....	Clear.....	
Essex, S. 12° 26′, E. 2° 36′.....	29.94	760.5	76	24.4	72	22.8	90	S	.....	.....	2	.....	10	.....	.....	.....	.....	Smooth	S	D. clouds.....	
Franklin, Norfolk, Va.....	29.80	756.9	62	16.7	50	10.0	93	ENE	12	5.4	.....	.....	.....	.....	ENE	2.	51.	.....	.....	Rainy.....	
Guard, Lisbon, Portugal.....	30.32	770.1	62	16.7	60	15.6	76	WNW	.....	.....	2	.....	8	.....	N&E	.....	.....	.....	.....	Foggy	
Lackawana, Mare Island, C al.....	30.16	766.1	.....	.....	49	9.4	71	Calm	.....	.....	0	.....	0	.....	.....	.....	.....	.....	.....	Foggy	
Marion, Villefranche, France.....	29.60	751.8	55	12.8	62	16.7	32	WSW	.....	.....	3	.....	1	.....	SSE	0	0	Mod'ate	S	D. clouds....	
Michigan, Erie, Pa.....	29.51	749.5	65	18.3	42	5.6	74	NNE	.....	.....	2	.....	10	.....	NE	.....	.....	.....	.....	Cloudy.....	
Monocacy, Hong-Kong, China	30.14	765.5	58	14.4	58	14.4	70	N&W	.....	.....	2	.....	1	.....	S	0	0	.....	.....	D. clouds....	
New Hampshire, Port Royal, S.C.....	30.02	762.5	.....	.....	53	11.7	93	N	5	2.2	.....	.....	8	.....	.....	.....	.....	.....	.....	D clouds....	
Omaha, Valparaiso, Chili.....	30.04	763.0	64	17.8	59	15.0	76	SW	1	0.4	.....	.....	7	.....	Calm	0	0	.....	.....	Pleasant.....	
Onward, Callao, Peru.....	30.00†	762.0†	78	25.6	75	23.9	86	SSE	.....	.....	3	.....	10	.....	.....	.....	.....	Long	W	D. clouds.....	
Ossipee, Norfolk, Va.....	29.76	755.9	70	21.1	51	10.6	93	NNE	.....	.....	5–6	.....	10	.....	NE	.....	.....	.....	.....	Raining.....	
Palos, Shanghai, China.....	30.45	773.4	48	8.9	39	3.9	91	WNW	.....	.....	2	.....	10	.....	Calm	.....	.....	.....	.....	Overcast.....	
Plymouth. N. 10° 24′, W. 79° 23′.....	29.90	759.4	80	26.7	80	26.7	??	ENE	.....	.....	2	.....	10	.....	.....	.....	.....	Smooth	NE	Rainy...	
Powhatan, Norfolk, Va.....	.....	.....	.....	.....	52	11.1	100	NNE	32.0	14.3	.....	.....	10	.....	.....	1.40	35.6	.....	.....	Rainy.....	
Ranger, Shanghai, China.....	30.53	775.4	.....	.....	44	6.7	84	NNW	.....	.....	2	.....	10	.....	Calm	.....	.....	.....	.....	Overcast.....	
Rio Bravo, Brownsville, Texas.....	29.78	756.4	.....	.....	67	19.4	95	ESE	.....	.....	1	.....	8	.....	.....	.....	.....	.....	.....	D. clouds.....	
Santee, Annapolis, Md.....	29 94	760.5	46	7.8	44	6.7	84	NE	.....	.....	4	.....	10	.....	.....	0	0	.....	.....	Cloudy.....	
Saratoga, Norfolk, Va.....	.....	.....	.....	.....	46	7.8	100	NNE	.....	.....	5–6	.....	10	.....	NE	Heavy	Heavy	.....	.....	Overcast.....	
St. Louis, League Island, Pa	29.87	758.7	45	7.2	43	6.1	83	NE	7	3.1	.....	.....	10	.....	NE	0	0	.....	.....	Overcast.....	
Swatara, Norfolk, Va.....	29.85	758.2	.....	.....	53	11.7	86	NNE	.....	.....	6	.....	10	.....	N&E	.....	.....	.....	.....	Raining.....	
Tennessee, Shanghai, China	30.44	773.2	70	21.1	42	5.6	91	NW	.....	.....	2	.....	10	.....	Calm	0	0	.....	.....	Overcast.....	
Trenton, N. 41° 30, E. 11° 46′.....	29.80	756.9	.....	.....	59	15.0	59	SE	4	1.8	.....	.....	3	.....	S&E	0	0	Mod'ate	S&E	D. clouds.....	
Vandalia, N. 37° 46′, E. 15° 34′.....	29.92	760.0	69	20.6	64	17.8	68	SSW	.....	.....	2	.....	1	.....	SSW	.....	.....	.....	.....	D. clouds.....	
Wabash, Boston, Mass.....	29.98	761.5	42	5.6	28	— 2.2	.....	WNW	0?	0?	.....	.....	0	.....	.....	0	0	.....	.....	Blue sky.....	
Wyoming, Washington, D. C.....	30.47	773.9	.....	.....	46	7.8	.....	NE	.....	.....	2	.....	10	.....	.....	.....	.....	.....	.....	Overcast.....	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. The position given for the Plymouth is that at noon, local time, instead of that a 7:35 a. m., Washington time.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Character.	Direction from—		
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			Capt. Berry.
S. S. China																			Capt. Cobb.
S. S. City of New York																			Capt. Seabury.
S. S. City of Panama																			
S. S. City of Peking, Yokohama, Japan			30.35*	770.9*	33	0.6	100	NW			2		2		NE	Smooth		D. clouds	Lt. Z. L. Tanner, U.S.N.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio, N. 31° 18′, E. 132° 30′			30.28	769.1	62	16.7		E			6		8		ENE	Mod'ate	NE	D. clouds	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. CostaRica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.
NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. *Aneroid.																			
WHITE STAR LINE MARINE SERIES.																			
Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.																			
S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			
OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.																			
S. S. Belgic, N. 41° 5′, E. 169° 42′			30.05*	763.3*				WNW			6		Heavy		W	Heavy	WNW	Squally	Capt. John Metcalf.
S. S. Gaelic, Hong-Kong, China			30.15†	765.8†	60	15.6	100	E			4		Haze					D. clouds	Capt. W. H. Kidley
S. S. Oceanic, N. 30° 19′, W. 165° 06′			29.96	761.0	67	19.4	79	SSW			5		0			Very Heavy	W	Blue sky	Capt. H. Parsell.
NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. *Corrected for temperature and elevation; instrumental error not known. †Aneroid.																			
NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.																			
Furnished by the coöperation of A. Schumacher & Co., Agents.																			
S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig																			Capt. Undütsch.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio																			Capt G. Meyer.
NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds.																			

UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Lo'wr	Upper.	Lower.	Character.	Direction From—		
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second	0—10.	0—10.	0—10.	From—	From—				
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, N. 51° 04′, W. 33° 28′			29.29*	744.0*	56	13.3	87	S			6		6		SW	Mod'ate	S	Overcast	Captain Sargent.
S. S. Ohio, N. 49° 45′, W. 34° 58′			29.22	742.2	55	12.8	93	S			6		10		S	Rough	SSW	Misty	Captain Morrison.
S. S. Pennsylvania																			Captain Harris.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. * Aneroid

RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

S. S. Nederland																			Capt. Randle.
S. S. Switzerland																			Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

S. S. Hibernian																			
S. S. Scandinavian, N. 49° 22′, W. 47° 36′			29.40	746.7	33	0.6		NW			6		10		NW	Mod'ate		Hazy	Capt. W. Richardson.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, Boothbay, Maine			30.00	762.0	31	— 0.6	68	NNW	4	1.8			0					Clear	Capt. James Jorgensen.

NOTE.—The originals for the schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer. U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON DECEMBER 28, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSÉ mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:28 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours	.....	.....	30.39	771.9	60.8	16.0	69	NW	.....	.....	2	.....	2	.....	.....	0	0	Fair	Michel.
Algiers	.....	.....	30.24	768.0	60.4	15.8	81	WNW	.....	.....	1	.....	6	.....	.....	0	0	Cloudy	Peter.
La Calle	.....	.....	30.23	767.9	56.5	13.6	82	W	.....	.....	3	.....	9	.....	.....	0.157	4.0	Covered	Fleury.
Tunis	.....	.....	30.08	764.0	60.6	15.9	70	W	.....	.....	5	.....	4	.....	.....	0.047	1.2	Cloudy	Jacques.
Sfax	.....	.....	30.28	768.5	55.4	13.0	.....	WNW	.....	.....	3	.....	2	.....	.....	0	0	Fair	Husson.
Saida	.....	.....	30.31	769.8	49.1	9.5	81	NW	.....	.....	1	.....	2	.....	.....	0	0	Fair	Millot.
Tebessa	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Bassières.
Geriville	.....	.....	30.35	770.8	38.8	3.8	97	NNW	.....	.....	3	.....	5	.....	.....	0	0	Cloudy	Lemaillot.
Laghouat	.....	.....	30.34	770.5	57.2	14 0	57	W	.....	.....	3	.....	1	.....	.....	0	0	Very fair	Guyot.
Biskra	.....	.....	30.34	770.7	64.9	18.3	37	NNE	.....	.....	1	.....	0	.....	.....	0	0	Clear	Kuntz.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m.; or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

Agram	29.32	744.8	29.90	759.4	32.5	0.3	69	NW	.....	.....	1	.....	5	.....	.....	0	0	.....	Prof. Ivan Stoxir
Cracow, I. R. Observatory	28.86	733.0	29.65	753.2	29.8	— 1.2	100	W	.....	.....	3	.....	10	.....	.....	0	0	.....	Dr. Wierzbiski.
Eperies	28.77	730.7	29.70	754.4	20.5	— 6.4	90	Calm	.....	.....	0	.....	6c;s	.....	.....	0	0	.....	Julius Mikolik.
Gratz	28.57	725.6	29.88	758.9	28.8	— 1.8	76	S	.....	.....	3	.....	2	.....	.....	0	0	.....	Andreas Rospini.
Hermannstadt	28.25	717.5	29.79	755.2	30.2	— 1.0	84	E	.....	.....	1	.....	10	.....	.....	0.159	4.05	Snowing	Prof. Reissenberger.
Kremsmünster	28.51	724.1	29.91	759.8	29.8	— 1.2	88	W	.....	.....	4	.....	10	.....	.....	0.197	5.0	.....	Prof. C. Wagner.
Lemberg	28.57	725.7	29.60	751.7	29.3	— 1.5	92	SW	.....	.....	2	.....	10	.....	.....	0	0	.....	Dr. T. Stanecki.
Pola	29.69	754.0	29.80	756.9	44.1	6.7	42	NNE	.....	.....	1	.....	1s	.....	.....	0	0	.....	I.R.Hydrographic Office.
Szathmar	29.28	743.7	29.77	756.1	28.0	— 2.2	81	S	.....	.....	3	.....	3	.....	.....	0.197	5.0	.....	Johann Tamas, S. J.
Szegedin	29.47	748.6	29.76	756.0	33.1	0.6	92	S	.....	.....	1	.....	10	.....	.....	0	0	.....	Karl Stancel.
Trieste	29.77	756.1	29.87	758.7	42.8	6.0	46	ENE	.....	.....	1	.....	0	.....	.....	0	0	Clear	P. Busin.
Vienna	29.06	738.1	29.79	756.6	32.2	0.1	78	W	.....	.....	5	.....	10	.....	.....	0.031	0.8	Snowing	I.R. Central Met.Obs'y.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

Arlon	28.53	724.7	30.11	764.8	29.8	— 1.2	92	W	.....	.....	1	.....	9	.....	.....	0.047	1.2	.....	Prof. M. Passau.
Brussels	29.82	757.5	30.03	762.8	30.0	2.2	86	W	.....	.....	4	5	1	NNW	WNW	0.134	3.40	.....	Royal Observatory.
Furnes	30.03	762.7	30.05	763.3	41.2	5.1	85	WNW	.....	.....	1	.....	9	.....	.....	0.244	6.2	.....	M. E. de Cae.
Maeseyck	29.85	758.2	29.98	761.5	34.7	1.5	90	WSW	.....	.....	4	.....	10	.....	.....	0.075	1.9	.....	M. Pierrot.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

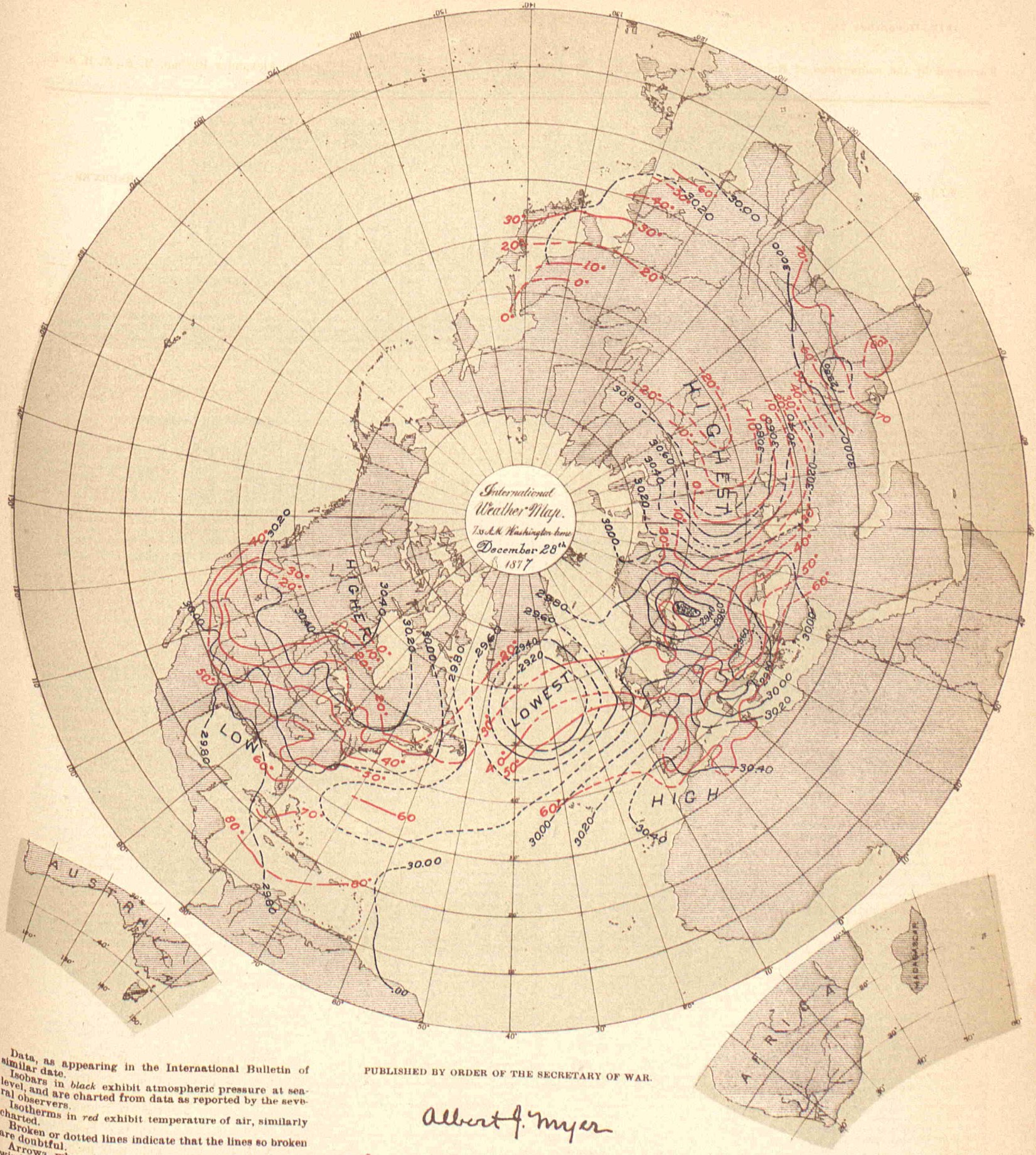
STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	29.76	755.9	29.86	758.4	30.8	— 0.7	.....	W	6	2.7	.....	.....	4	.....	.....	0.300	7.62	Misty	W. Boswell.
Ardrossan	.....	.....	.....	.....	34	1.1	.....	NE	.....	.....	1	.....	8	.....	.....	.....	.....	Misty	William McNeil.
Armagh, Observatory	.....	.....	29.72	754.9	34.9	1.6	.....	SE	16	7.2	.....	.....	10	.....	.....	.....	.....	Rain sq'lls	S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)	.....	.....	29.93	760.2	36.4	2.4	.....	S	8	3.6	.....	.....	10	.....	.....	.....	.....	Overcast	John Hartnup.
Birr Castle, (Parsonstown)	.....	.....	29.67	753.6	43.4	6.3	.....	SE	.....	.....	3–4	.....	10	.....	.....	.....	.....	Raining	J. Dreyer.
Bradford, Yorkshire	29.51	749.5	29.90	759.4	36.9	2.7	.....	N	.....	.....	1	.....	10	.....	.....	0	0	Overcast	J. McLandsborough.
Bridgetown, (Barbados)	29.92	760.0	29.95	760.7	81	27.2	.....	NE	.....	.....	1	.....	3	.....	.....	.....	.....	D. clouds	Pvt. G. W. Roberts, A.
Cambridge, Observatory	.....	.....	30.01	762.2	36.0	2.2	.....	WSW	.....	.....	1	.....	10	.....	.....	.....	.....	Overcast	H. Todd. [H. C.
Cardington	.....	.....	29.82	757.4	35.0	1.7	.....	W	.....	.....	1	.....	10	.....	.....	.....	.....	Overcast	John McLaren.
Chatham, School M. E	29.89	759.2	30.02	762.5	37.2	2.9	.....	Calm	.....	.....	0	.....	10	.....	.....	.....	.....	Overcast	Lt. W. G. Morris, R. E.
Dartmoor	28.15	715.0	29.65	753.1	36.8	2.7	.....	W	.....	.....	5	.....	8	.....	.....	.....	.....	Rain and fog	Alexander Watt.
Davos Platz (Switzerland)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Donaghadee	29.78	756.4	29.81	757.2	35	1.7	.....	SSW	.....	.....	2	.....	10	.....	.....	.....	.....	.....	Francis Redford, M. A.
Dover	30.01	762.2	30.04	763.0	38	3.3	.....	W	.....	.....	3	.....	9	.....	.....	.....	.....	Raining	J. Mac Gowan.
Eccles, (near Manchester)	.....	.....	29.92	760.0	34.0	1.1	.....	NW	.....	.....	.....	.....	10	.....	.....	.....	.....	Misty	J. Costello.
Falmouth, Observatory	29.68	753.9	29.92	760.0	49.0	9.4	.....	S	.....	.....	3	.....	10	.....	.....	.....	.....	Gloomy	Thomas Mackereth.
Fort Napier, (Natal)	27.59	700.8	29.79	756.7	83.4	28.6	.....	E	.....	.....	2	.....	0	.....	.....	.....	.....	Rain and fog	The Staff.
Free Town, (Sierra Leone)	.....	.....	29.98	761.5	88	31.1	.....	W	.....	.....	2	.....	3	.....	.....	.....	.....	Blue sky	Pvt. G. Salmon, A. H. C
Galway, Queen's College	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	D. clouds	.....
Gibraltar, (Mediterranean)	30.26	768.6	30.32	770.1	60.2	15.7	.....	NW	.....	.....	2	.....	1	.....	.....	.....	.....	.....	Prof. A. H. Curtis.
Glasgow, Observatory	29.63	752.6	29.84	757.9	30.2	— 1.0	.....	WNW	.....	.....	1	.....	.....	.....	.....	.....	.....	Blue sky	Corpl. C. Aitken, A. H. C.
Great Yarmouth	29.97	761.2	29.98	761.5	34	1.1	.....	WNW	.....	.....	2	.....	3	.....	.....	.....	.....	Dense fog	D. G. Maclean.
Greenwich, Royal Obs'y	29.86	758.4	30.04	763.0	35.6	2.0	.....	SW	.....	.....	1	.....	10	.....	.....	.....	.....	Hazy	G. T. Watson.
Guernsey	29.80	756.9	30.03	762.7	47	8.3	.....	SSW	.....	.....	1	.....	8	.....	.....	Blank	Blank	Overcast	The Staff, for G. B. Airy.
Helston	.....	.....	29.90	759.4	49	9.4	.....	S	.....	.....	2	.....	10	.....	.....	.....	.....	D. clouds	Dr. S. E. Hoskins, F. R. S.
Holyhead	29.78	756.4	29.84	757.9	36	2.2	.....	ESE	.....	.....	3	.....	10	.....	.....	Blank	Blank	Overcast	M. P. Moyle.
Jersey	29 78	756.4	30.08	764.0	47.0	8.3	.....	SW	.....	.....	3	.....	7	.....	.....	.....	.....	Raining	John Tilston.
Kew, Observatory	.....	.....	30.05	763.3	36.8	2.7	.....	W	4	1.8	.....	.....	10	.....	.....	.....	.....	Gloomy	J. Fisher.
Kingstown	29.75	755.6	29.78	756.4	40	4.4	.....	SSE	.....	.....	5	.....	10	.....	.....	.....	.....	Misty	The Staff.
Leicester, Museum	.....	.....	30.00	762.0	34.0	1.1	.....	W	.....	.....	1	.....	10	.....	.....	.....	.....	Raining	George Mitchell.
Malta, (Mediterranean)	29.90	759.4	29.98	761.5	61.2	16.2	.....	W	.....	.....	5	.....	8	.....	.....	.....	.....	Overcast	Wm. J. Harrison, F. G. S.
Nairn	29.69	754.1	29.78	756.4	31	— 0.6	.....	Calm	.....	.....	0	.....	10	.....	.....	.....	.....	D. clouds	Sgt. Fred. Travis, A. H.
Nassau, (Bahamas)	.....	.....	29.96	761.0	67.2	19.6	.....	NE	.....	.....	0	.....	10	.....	.....	.....	.....	Overcast	W. D. Penny. [C.
Nottingham, Observatory	29.78	756.4	29.98	761.5	32.8	0.4	.....	Calm	.....	.....	0	.....	10	.....	.....	.....	.....	Overcast	C. S. Duncombe.
Oscott, St. Mary's College	29.45	748.0	29.99	761.7	34.7	1.5	.....	SW	.....	.....	2	.....	10	.....	.....	.....	.....	Overcast	E. J. Lowe, F. R. S
Oxford, Radcliffe Obs'y	.....	.....	30.02	762.5	36	2.2	.....	Calm	.....	.....	0	.....	10	.....	.....	Calm	0.010	0.25	Overcast	Rev. Stephen Wintle
Plymouth	29.88	758.9	29.96	761.0	42.7	5.9	.....	SSE	.....	.....	3	.....	10	.....	.....	.....	.....	Foggy	.....
Roche's Point	29.72	754.9	29.77	756.1	51	10.6	.....	SW	.....	.....	5	.....	10	.....	.....	.....	.....	Misty	Mr. Lucas
Saint Ann's Head	.....	.....	29.83	757.7	45	7.2	.....	SE	.....	.....	5	.....	10	.....	.....	.....	.....	Raining	John Merrifield.
Sandwick Manse, (Orkneys.	.....	.....	29.78	756.4	32.5	0.3	.....	S	6	2.7	.....	.....	0	.....	.....	.....	.....	Raining	W. Kennedy.
Scutari, Cemetery, (Turkey	.....	.....	29.77	756.1	54.6	12.6	.....	S	.....	.....	2	.....	8	.....	.....	.....	.....	Raining	John C. Walker.
Sheffield	29.68	753.9	29.98	761 5	37.6	3.1	.....	SW	.....	.....	1	.....	9	.....	.....	.....	.....	Blue sky	Rev. C. Clouston, LL. D
Silloth Rectory	29.84	757.9	29.87	758.7	31.9	— 0.1	89	W	.....	.....	1	.....	8	.....	.....	0.26	6.6	D. clouds	Sergt. W. H. Lyne.
Stonyhurst, Observatory	.....	.....	.....	.....	32.0	0.0	.....	W	.....	.....	0	.....	.....	.....	.....	0.700	17.78	Overcast	W. F. Cooper.
Stornoway, Lews C. (Hebr.)	.....	.....	29.71	754.6	37	2.8	.....	SE	.....	.....	1	.....	10	.....	.....	.....	.....	Hazy	Rev. F. Redford, M. A.
Stratfield Turgiss	29.82	757.4	30.05	763.3	34.8	1.6	.....	SW	.....	.....	1	.....	8	.....	.....	.....	.....	Threatening	Rev. S. J. Perry.
Thurso	.....	.....	29.77	756.1	26	— 3.3	.....	S	.....	.....	2	.....	10	.....	.....	.....	.....	Foggy	John Smith.
Truro, Royal Institution	.....	.....	29.86	758.4	51	10.6	.....	SW	.....	.....	4	.....	10	.....	.....	.....	.....	Overcast	Rev. C. H. Griffith, F. M. S.
Valencia, Observatory	.....	.....	29.69	754.1	52.3	11.3	.....	SW	39	17.4	.....	.....	10	.....	.....	.....	.....	Raining	John Trotter.
Sub-Series.																		Drizzling	W. Newcombe.
Calf of Man, (Isle of Man)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	The Staff.
Cape Good Hope, Obs'y	29.94	760.5	29.98	761.5	84.3	29.1	48	SE	14	6.3	.....	0	0	.....	.....	.....	.....	.....	Henry Mercer.
Hobart Town, (Tasmania)	.....	.....	30.12	765.0	60.5	15.8	88	SE	.....	.....	2	.....	4k	.....	.....	0	0	.....	The Staff, for E. J. Stone.
Leith, Restalrig Park	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Francis Abbott, F. R. A. S.
Mauritius, Observatory	29.69	754.1	29.87	758 8	84.0	28.9	65	NE	10.5	4.7	.....	8	6	S	NNE	0	0	Cloudy	Andrew Gibb.
Melbourne, Observatory	29.90	759 4	29.99	761.7	64.1	17.8	71	ESE	10	4.5	.....	.....	9	.....	.....	0.05	1.3	Dull	C. Meldrum.
Monach L't-house, (Hebrides)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. L. J. Ellery.
North Unst, (Shetland Is.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Youngclause.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Robert Burnet.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation: the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m.

MARINE SERIES.

VESSELS.	Sea or swell. Height scale 0—9	Sea or swell. Direction from—	Weather.	Observer.
S. S. Algeria, N. 51° 6′, W. 13° 0′	10*	NNE; WNW; SW	Raining	Capt. W. Watson
S. S. Batavia	.....	.....	.....	Capt. J. E. Moulland.
Ship Camperdown	.....	.....	.....	Capt. A. T. Miller.
Brig Catherine	.....	.....	.....	Capt. Adam Smith.
Barque Celeste	.....	.....	.....	Capt. D. F. McKechnie
S. S. Hibernia	.....	.....	.....	Capt. W. R. Cato
Barque Maroon	.....	.....	.....	Capt. A. T. Brown.
Ship Mikado	.....	.....	.....	Capt. C. C. Prehn.
Royal Alice, N. 46° 45′, W. 37° 45′	7	N; SE	Raining	Capt. E. M. Hughes.
S. S. Seine	.....	.....	.....	Capt. H. Manning.
Barque Sorata	.....	.....	.....	Capt. Jas. J. Price.
Schooner Traveller	.....	.....	.....	Capt. Alex Simpson
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet. weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. *Feet.



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—1.	Clouds. Amount. Low'r (—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
San José	26.20	665.5	.....	.....	67.1	19.5	92	NE	.....	.....	1	.....	10sd	.....	.....	Blank	Blank	.....	Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.63	752.5	29.67	753.7	31.5	— 0.3	79	NNW	....	....	2	.....	1	.....	.....	.....	.....	.....	
Fanöe	29.80	756.8	29.82	757.3	25.2	— 3.8	100	Calm	.....	.....	0	.....	10	.....	.....	.....	.....	Foggy	
Godthaab, (Greenland)	29.40	746.7	29.44	747.8	14.0	—10.0	84	N	.....	.....	2	.....	10	.....	.....	.....	.....	.....	
Stykkisholm, (Iceland)	29.25	743.0	29.30	744.1	27.5	— 2.5	100	SE	.....	.....	6	.....	8	.....	.....	.....	.....	Snowing	
Thorshavn, (Faröe)	29.71	754.5	29.74	755.4	28.4	— 2.0	92	Calm	.....	.....	0	.....	10	.....	.....	.....	.....	.....	
Vestervig	29.67	753.6	29.84	757.9	30.2	— 1.0	96	Calm	.....	.....	0	.....	5	.....	.....	.....	.....	.....	

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

Alençon, Normal School	29.57	751.0	30.12	765.0	41.0	5	94	SW	.....	.....	1	.....	5	.....	SW	0	0	Cloudy	Collignon, Director.
Amiens, Normal School	29.95	760.8	30.07	763.8	37.8	3.2	83	W	.....	.....	3	.....	5	.....	W	0.047	1.2	Cloudy	Bonvarne, Director.
Avignon, Normal School	30.08	764.0	30.16	766.0	46.4	8	44	N	.....	.....	3	.....	0	.....	.....	0.12	3.	Very cloudy	Mr. Giraud, Director
Bar-sur-Seine	29.57	751.1	30.16	766.1	37 9	3.3	80	SW	.....	.....	1	.....	8kn	.....	.....	0.051	1.3	Very cloudy	C. Saillard.
Beaumette Obs'y (Angers)	29.97	761.2	30.13	765.4	45.7	7.6	94	SW	4.9	2.2	.....	.....	.....	.....	WSW	0.020	0.5	.....	Albert Cheux.
Beauvais	29.84	757.8	30.13	765.3	39.6	4.2	71	W	.....	.....	2	.....	8	.....	W	0	0	Very cloudy	Normal School.
Besançon	29.29	743.9	30.23	767.7	36.0	2.2	82	SSW	.....	.....	4	.....	8	.....	SW	0.339	8.6	Very cloudy	Normal School.
Bourg-en-Bresse	29.34	745.3	30.26	768.5	38.1	3.4	97	SE	.....	.....	2	.....	8k	.....	NW	0.16	4.	Cloudy	Normal School.
Bourges, Normal School	29.61	752.0	30.17	766 4	41.0	5	91	SW	.....	.....	2	.....	5	.....	SW	0.189	4.8	Partly cl'dy	A. Wagner, Director.
Brest, Naval Observatory	29.76	756.0	29.98	761.6	48.7	9.3	92	SW	.....	.....	3	.....	10	.....	SW	0.128	3.25	Rain & fog	The Staff.
Carcassonne, Normal School	29.79	756.6	30.21	767.3	51.8	11	97	W	.....	.....	2	.....	10	.....	W	0.382	9.7	Covered	Vateau, Director.
Caen	30.03	762.7	30.10	764.6	44.6	7	88	SW	.....	.....	1	.....	.....	.....	W	0	0	.....	Normal School.
Chartres, Normal School	29.52	749.9	30.11	764.7	43.2	6.2	.....	W	.....	.....	1	.....	2	.....	SW	0	0	.....	Lequin, Director.
Châlons-sur-Marne, N. Sch'l	29.80	756.9	30.13	765.3	36.0	2.2	85	Calm	.....	.....	0	.....	5ck	.....	N	0.008	0.2	Cloudy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.81	731.7	30.21	767.2	43.0	6.1	58	W	.....	.....	1	.....	10	.....	NW	0.232	5.9	Covered	Alluard, Director.
Commercy, Normal School	29.23	742.4	30.15	765.7	36.3	2.4	79	WSW	.....	.....	2	.....	5	.....	WSW	0.059	1.5	Cloudy	Dr. Goulet, Director
Commune de Grénasque*	28.91	734.3	30.05	763.3	43.3	6.3	77	NW	.....	.....	8	.....	2	.....	NW	0.094	2.4	¾ covered	M. Kina.
Grenoble	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Normal School.
La Roche-sur-Yon, N. School	29.95	760.6	30.17	766.2	46.0	7.8	94	N	.....	.....	2	.....	10	.....	.....	0	0	Covered	Moullot, Director.
Le Mans, Normal School	29.84	758.0	30.17	766.2	41.7	5.4	91	WSW	.....	.....	2	.....	8	.....	W	0	0	Very cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.24	742.8	30.20	767.0	37.6	3.1	86	SW	.....	.....	2	.....	5	.....	NE	0.417	10.60	Cloudy	Voudez, Director.
Lorient, Naval Observatory	30.02	762.5	30.12	765.0	49.6	9.8	86	S	.....	.....	1	.....	10	.....	.....	0.236	6.0	Covered	T. Carré, Director.
Mâcon, Normal School	29.39	746.6	30.11	764.8	41.2	5.1	91	WNW	.....	.....	2	.....	10	.....	W	0.209	5.3	Covered	M. Marchal, Director.
Metz	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. A. Schuster, Dir.
Mirecourt	29.05	737.9	30.15	765.7	34.9	1.6	93	NW	.....	.....	1	.....	10	.....	E	0	0	Covered	Normal School.
Nismes, Normal School	29.90	759.5	30.11	764.8	46.8	8.2	70	NW	.....	.....	1	.....	0	.....	.....	0	0	Clear	Boyer, Director.
Orleans, Normal School	29.68	753.8	30.07	763.6	43.2	6.2	73	W	.....	.....	2	.....	5	.....	NW	0	0	Cloudy	Bernard, Director.
Paris, Observatory	29.88	758.9	30.13	765.2	41.9	5.5	61	WSW	.....	.....	1	.....	9	.....	W	0	0	Almost cov'd	National Observatory.
Privas	29.13	740.0	30.22	767 6	50 9	10.5	46	NW	.....	.....	2	.....	10	.....	NW	0	0	Covered	Normal School
Rochefort, Naval Obs'y	30.17	766.2	30.20	767.0	52.5	11.4	90	W	.....	.....	3	.....	8	.....	E	0.04	1.	¾ covered	Lt. Decante, Director.
Rouen, Normal School	30.02	762.0	30.11	764.8	43.9	6.6	52	WNW	.....	.....	2	.....	5	.....	W	0	0	Cloudy	F. Lucard, Director.
Tarbes, Normal School	29.13	739.8	30.23	767.7	47.3	8.5	94	W	.....	.....	6	.....	2	.....	E	0.43	11.	Slightly cl'dy	T. Hugues, Director.
Villefranche	29.52	749.9	30.26	768.7	41.0	5	97	SSE	.....	.....	2	.....	8	.....	N	0.331	8.4	Very cloudy	Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.84	758.0	29.87	758.7	81.3	27.4	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0	.....	L'Abbé Marchési.
Marseilles, Observatory	.....	.....	30.04	762.9	47.7	8.7	49	NW	.....	.....	6	.....	1	.....	.....	0.039	1.00	.....	The Staff.
Mont-Louis	24.93	633.2	30.24	768.2	41.0	5.0	44	NW	7.4	3.33	.....	.....	2	.....	W	0.063	1.6	.....	Mr. Falguère.
Nice	.....	.....	29.85	758.2	54.1	12.3	66	NW	.....	.....	8	.....	2?	.....	.....	0	0	Cloudy?	Dr. A. Niepce.
Paris, Montsouris Obs'y	29.84	757.8	30.11	764.8	43.3	6.3	68	W	.....	.....	2	.....	8	.....	W	Inap.	Inap.	.....	Marié Davy, Director.
Perpignan	.....	.....	30.16	766.6	57.0	14.2	66	NW	22.4	10.00	.....	.....	5	.....	NW	0.028	0.7	.....	Dr. Fines.
Pic du Midi, (Summit,) H. P.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.58	573.6	.....	.....	27.5	— 2.5	.....	N	.....	.....	4	.....	6	.....	.....	0.768	19.5	Snowy	Gen'l de Nansouty.
Saint Maur, (near Paris)	29.96	761.0	30.13	765.2	41.4	5.2	69	W	.....	.....	1	.....	7	.....	WNW	0.228	5.8	Almost cov'd	E. Renou.
Toulouse, Observatory	29.51	749.5	30.24	768 0	51.4	10.8	86	WNW	.....	.....	4	.....	9	.....	.....	0.045	1.15	Rainy	The Staff.
Tours	29.97	761.1	30.16	766.1	44.6	7.0	85	SW	.....	.....	1	.....	8	.....	W	0.094	2.4	.....	C. Marquet.
Versailles, (near Paris)	.....	.....	30.11	764.9	42.1	5.6	61	WNW	.....	.....	1	.....	7	.....	.....	0.004	0.09	Thin clouds.	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.33	770.3	30.35	770.9	97.8	3.2	89	NW	1.8	0.8	.....	.....	10k	.....	.....	0	0	.....	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published. At Mirecourt and Rochefort the cloud directions are apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Grénasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,368 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the last 24 hours. Inches.	Rain-fall or melted snow in the last 24 hours. Millimeters.	Weather.	Observer.
Bamberg																			Prof. Dr. Hoh.
Berlin	29.59	751.6	29.77	756.1	33.6	0.9	85	NW			1		4			0.078	1.81		Prof. Arndt.
Breslau	29.13	740.0	29.66	753.3	30.0	— 1.1	81	WNW			5		10			0.195	4.96		Royal University Obs'y.
Carlsruhe	29.62	752.4	30.07	763.8	34 2	1.2	78	SW			2		9			0	0		Albert Senz.
Cassel	29.34	745.3	29.95	760.7	34.6	1.6	86	WNW			5		10	NW		0	0		Dr. H. Möhl.
Crefeld	29.77	756.2	29.93	760.3	35.2	1.8	86	W			2		7			0	0		Director Lose.
Emden	30.07	763.8	30.11	764.7	29.7	— 1.3	95	W			0					0.945	24.0		Prof. Prestel.
Frankfort on the Main	29.58	751.3	30.00	762.0	36.0	2.2		WSW			2		8			0.04	1.	Snowing	Physical Society.
Friedrichshafen	29.06?	738.1?	30.13	765.4	32.9	0.5	98	W			8		10	W		1.008	25.6	Raining	M. Wilhelm.
Hamburg	29.79	756.7	29.87	758.6	25.5	— 3.6	100	NW			2		10			0.008	0.2	Dense fog	Captain F. Hegemann.
Kiel	29.82	757.3	29.83	757.7	28.0	— 2.2	100	W			1		10			0.029	0.72		Prof. G. Karsten.
Königsberg, (Prussia)	29.15	740.4	29.23	742.4	27.7	— 2.4	92	SW								0.183	4.66	Snowing	Prof. E. Luther.
Köslin			*29.50	749.2	31.5	— 0.3		NW			6		4			0	0		H. Müller.
Leipsic, Observatory	29.44	747.8	29.88	758.9	33.1	0.6	82	WNW			4		8	NW		0.012	0.3		Prof. Bruhns.
Memel, Naval School	29.15	740.5	29.20	741.6	25.7	— 3.5	93	N			1		10					Snowing	Reinbrech von Skalweit.
Neufahrwasser	29.82	744.8	29.84	745.2	32.9	0.5	90	NW			5		10			0.177	4.5	Snowing	A. Lothes.
Posen	29.30	744.2	29.61	752.1	30.2	— 1.0	89	NW			6–7					*0.028	*0.70	Covered	Dr. Magener.
Strassburg Obs., (in Alsace	29.57	751.0	30.14	765.6	36.0	2.2	72	W			1		10	W		0.051	1.3		Dr. Schur.
Stuttgart	29.04	737.7	30.02	762.6	34.3	1.3	73	W			2		2	W		0	0		Prof. Schoder.
Treves, (Trier)	29.45	748.0	29.97	761.3	34.3	1.3	78	SW			4		10			0	0		Prof. Flesch.
Weissenburg, (Bavaria)	28.41	721.6	29.99	761.8	28.6	— 1.9	98	W	22	10			9k		W	0	0	Heavy squalls	Dr. Von Bebber
Wustrow, Naval School	29.74	755.4	29.79	756.7	33.1	0.6	76	NNW			5		8			0	0	Cloudy	E. F. Schütz.
German Naval Series.																			

NOTE.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet: Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4. Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines, Königsberg, Posen and Wustrow in cubic zolls. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time. *Precipitation in 48 hours.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.42	747.3	29.81	757.2	60.1	15.6		SW			1							Clear	Dr. J. F. J. Schmidt.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and wind-force; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.86	758.5	29.91	759.8	64.9	18.3	52	N	21.0?	9.4?			0			0	0	Blue sky	
Deesa	29.44	747.8	29.93	760.0	74.3	23.5	32	Calm					0			0	0	Blue sky	
Bombay	29.80	757.0	29.84	758.0	78.1	25.6	75	NNW	22.0	9.8			0			0	0	Blue sky	
Poona	27.88	708.2	29.88	758.9	81.4	27.4	44	E					7			0	0	D. clouds	
Lahore	28.90	732.9	29.66	753.7	55.6	13.1	87	NW	0.6	0.3			10			0.70	17.8	Raining	
Belgaum	27.31	693.8	29.84	757.8	78.2	25.7	58	Calm					1			0	0	D. clouds	
Bangalore																			
Roorkee	28.87	733.3	29.80	756.9	63.4	17.8	86	SE	2.7	1.2			10			0.07	1.8		
Agra	29.25	742.8	29.82	757.4	68.3	20 2	72	E					10			0	0		
Trichinopoly																			
Nagpur	28.83	732.2	29.88	759.0	73.6	23.1	52	Calm	3.2	1.4			1			0	0	Blue sky	
Madras																			
Lucknow	29.51	749.6	29.90	759.4	66.6	19.2	79	Calm	3.1	1.4			4	NNE		0	0	D. clouds	
Allahabad	29.57	751.0	29.88	759.1	70.5	21.4	77	NNE	0.9	0.4			2			0	0	D. clouds	
Patna	29.78	756.5	29.97	761.2	69.5	20.8	69	W	0.2	0.1			4	W	W	0	0	D. clouds	
Hazaribagh	27.87	707.9	29.93	760.2	67.0	19.4	50	ESE	3.6	1.6			0			0	0	Blue sky	
Cuttack	29.85	758.1	29.93	760.2	76.1	24.5	67	Calm	1.0	0.4			0			0	0	Blue sky	
Calcutta (Alipore)	29.92	760.0	29.94	760.5	71.7	22.1	76	SW	1.0	0.4			0			0	0	Blue sky	
Goalpara	29.55	750.4	29.94	760.6	71.6	22.1	60	Calm	2.3	1.0			0			0	0	Blue sky	
Chittagong	29.88	758.9	29.97	761.3	69.8	21.0	80	NNW	2.0	0.9			0					Blue sky	
Sibsagar	29.65	753.1	30.00	762.0	64.9	18.3	89	E	1.1	0.5			10			0	0	D. clouds	
Rangoon																			
Jubbulpore	28.49	723.7	29.88	758.8	74.0	23.3	60	S	3.6	1.6			0			0	0	Blue sky	

NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beanfort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,980 ft., or 911.0 m; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	21.91	556.4	30.07	763.7	10.8	—11.8	100	NW	.....	.....	6	.....	2	NW	.....	0	0	.....	Ab. Dom. Mongini.
Stelvio	21.85	555.0	30.06	764.1	5.0	—15.0	.....	SSW	.....	.....	6	.....	10	.....	.....	0.138	3.5	.....	Signora Ernesta Manfredi.
Udine	29.39	746.4	29.82	757.3	43.9	6.6	14	N	3.1	1.4	.....	.....	0	.....	.....	0	0	.....	Prof. Giovanni Olodig.
Padua	29.72	755.0	29.81	757.9	44.8	7.1	21	NW	14.3	6.4	.....	.....	0	.....	.....	0	0	.....	Prof. Dott. Lorenzoni.
Vicenza	29.69	754.2	29.89	759.3	46.0	7.8	16	NNW	9.4	4.2	.....	.....	0	.....	.....	0	0	.....	Conte Alm. Da Schio.
Verona	29.63	752.6	29.86	758.5	46.4	8.0	76	NNE	.....	.....	1	.....	10	.....	.....	0	0	.....	Dott. B. Bertoncelli.
Bergamo	28.62	726.9	29.99	761.8	41.4	5.2	.....	N	.....	.....	6	.....	0	.....	.....	0	0	.....	Prof. Trionfini Carlo.
Domodossola	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Giuseppe Calza.
Milan	29.46	748.3	30.01	762.3	45.0	7.2	.....	NE	.....	.....	6	.....	0	.....	.....	0	0	.....	Ab. Gio. Capelli.
Pavia	29.61	752.1	29.97	761.3	45.0	7.2	29	NE	.....	.....	6	.....	0	.....	.....	0	0	.....	Prof. Gio. Cantoni
Moncalieri	29.04	737.5	29.98	761.5	47.1	8.4	42	SE	9.4	4.2	.....	.....	1	.....	.....	0	0	.....	Prof. P. F. Denza.
Mondovi	28.03	711.9	30.01	762.3	41.4	5.2	25	NW	.....	.....	2	.....	0	.....	.....	0	0	.....	Prof. D. C. Bruno.
Porto Maurizio	29.67	753.7	29.90	759.5	54.1	12.3	54	WSW	.....	.....	2	.....	0	.....	.....	0	0	.....	Prof. L. Vassallo.
Genoa	29.74	755.5	29.92	759.9	50.9	10.5	10	N	9.8	4.4	.....	.....	0	.....	.....	0	0	.....	Prof. G. M. Garibaldi
Piacenza	29.66	753.4	29.92	760.0	43.9	6.6	25	N	44.1	19.7	.....	.....	0	.....	.....	0	0	.....	Dott. G. Manzi.
Parma	29.64	752.9	29.97	761.3	42.3	5.7	65	NW	.....	.....	6	.....	1	.....	.....	0	0	.....	Prof. P. Pigorini.
Florence	29.63	752.6	29.90	759.4	48.2	9.0	32	N	.....	.....	4	.....	0	.....	.....	0.079	2.0	.....	Cav. F. Meucci.
Leghorn	29.72	754.8	29.80	757.0	52.3	11.3	32	NW	9.8	4.4	.....	.....	0	.....	.....	0	0	.....	Prof. P. Monte.
Siena	28.58	725.9	29.82	757.5	46.0	8.1	28	NNW	23.7	10.6	.....	.....	1	N	.....	0.295	7.5	.....	Prof. L. Toscani.
Urbino	28.23	717.1	29.86	758.1	39.4	4.1	72	NE	.....	.....	4	.....	3	.....	.....	0	0	.....	Prof. P. Serpieri.
Pesaro	29.82	757.3	29.87	758.6	42.6	5.9	67	NW	58.4	26.1	.....	.....	9	NW	.....	0	0	.....	Prof. Luigi Guidi.
Ancona	29.77	756.2	29.88	759.0	43.7	6.5	58	NW	.....	.....	6	.....	10	.....	.....	0	0	.....	Prof. F. DeBosis.
Grosseto	29.67	753.5	29.78	756.4	57.2	14.0	45	WNW	.....	.....	4	.....	4	NW	.....	0.067	1.7	.....	Avv. P. Ponticelli.
Rome	29.58	751.3	29.76	755.9	57.2	14.0	57	NNW	4.3	1.9	.....	.....	0	.....	.....	0.169	4.3	.....	Prof. P. A. Secchi.
Naples, O. U.	29.53	750.1	29.74	755.3	59.0	15.0	70	SW	.....	.....	6	.....	7	WSW	.....	0.020	0.5	.....	Prof. L. Palmieri.
Lecce	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. C. De Giorgi.
Cosenza	28.94	735.1	29.85	758.3	55.4	13.0	77	NNE	11.2	5.0	.....	.....	10	.....	.....	0.843	21.4	.....	Prof. F. D. Conti.
Cagliari	29.72	754.9	29.92	759.9	59.0	15.0	58	NW	.....	.....	6	.....	1	NW	.....	0	0	.....	Prof. A. Pacinotti.
Riposto, (Sicily)	.....	.....	.....	.....	61.9	16.6	64	SE	.....	.....	4	.....	6	.....	.....	0	0	.....	Prof. F. Cafiero.
Palermo	29.60	751.8	29.86	758.4	61.7	16.5	56	WSW	11.9	5.3	.....	.....	9	WSW	.....	0	0	.....	Prof. G. Cacciatore.
Caltanissetta	27.91	708.8	29.89	759.3	62.5	11.4	70	W	.....	.....	6	.....	2	SE	.....	0	0	.....	Prof. A. Pagani.
Syracuse	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.21	742.0	29.77	756.2	55.8	13.2	79	ESE	8.1	3.6	.....	.....	6	.....	.....	0	0	.....	Prof. F. Brioschi.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,548.0 meters, or 8,242.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Siena, 348.5 m., or 1,143.3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Tokei (Yeddo)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	The Observatory.
Tokei (Yeddo) University	30.02	762.4	30.12	765.0	36.2	2.3	66	NNW	3.7	1.7	.....	5cs	.....	.....	.....	0	0	Fair	Prof. P. V. Veeder.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Señor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Aguascalientes	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	I. N. Marin, M. D.
Córdoba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	C. Peña, M. D.
Cuernavaca	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	L. Castillo, A. E.
Guadalajara	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. L. Perez.
Guanajuato	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. V. Fernandez.
Leon	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. M. Leal.
Mexico	22.97	583.4	30.04	763.0	55.4	13.0	53	W	9.3	4.17	.....	2c	0	.....	.....	0	0	Clear	Central Observatory.
Orizaba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	N. N.
Orizaba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	I. Orozco, M. D.
Pabellon, (Aguascalts)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. V. de Leon, M. E.
Puebla	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. B. Gonzalez.
Toluca	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. C. Velazquez.
Tlacotalpam	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. F. R. Bayly.
San Luis Potosi	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	G. Barroeta, M. D.
Vera-Cruz	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. J. Rossell.
Zacatecas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. A. Bonilla, M. E.
Puebla, (Catholic Institute)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	P. Spina. [M. M. D. D.
Morelia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Tena, F. L. Páramo

Note.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,299 m., or 7,542.9 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,024.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosí, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	30.02	762.5	30.02	762.5	40.8	4.9	.....	W	.....	.....	4	.....	.....	.....	.....	0	0	.....	
Groningen	29.84	758.0	29.90	759.4	32.5	0.3	.....	W	.....	.....	2	.....	.....	.....	.....	0	0	.....	
Helder	29.94	760.5	29.94	760.5	40.3	4.6	.....	NW	.....	.....	1	.....	.....	.....	.....	0.043	1.1	.....	
Hellevoetsluis	.....	.....	29.98	761.5	39.6	4.2	85	W	.....	.....	3	.....	.....	.....	.....	.....	.....	.....	
Utrecht	29.92	759.9	29.97	761.1	39.4	4.1	82	W	.....	.....	3	.....	2	.....	.....	0.012	0.3	Light cloudy	H. v d Bruk.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	BAROMETER. Corrected for instru-m'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	CLOUDS. Amount. Up'er. 0—10.	Low'r. 0—10.	Direction. Upper. From—	Lower. From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	Millimeters.	WEATHER.	OBSERVER.
Bergen	29.77	756.1	29.82	757.5	25.2	— 3.8	95	Calm	0	0			0			0	0		
Brõno	29.74	755.4	29.78	756.4	26.2	— 3.2	78	NE	7	3			0			0	0		
Christiania	29.60	751.9	29.76	755.9	20.3	— 6.5	92	NE	0	0			4			0.020	0.5		
Tromsö	29.80	757.0	29.85	758.1	26.8	— 2.9	55	SSW	11	5			5			0	0		

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Dom Luiz at Lisbon.

STATIONS.	Bar. corr. Inches.	Millimeters.	Reduced Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	Force.	Up'er.	Low'r.	Upper.	Lower.	Inches.	Millimeters.	WEATHER.	OBSERVER.
Angra, (Azores)	30.23	767.9	30.43	772.8	63.0	17.2	92	NW	1.8	0.8			6			0.079	2.0		Dr. J. A. Sampaio.
Campo Major	29.38	746.2	30.43	772.9	47.7	8.7	94	SW	2.5	1.1			10			0	0		Dr. A. M. R. dos Santos
Funchal, (Madeira)	30.33	770.3	30.40	772.1	62.8	17.1	53	SE	3.8	1.7			2			0	0		Capt. D. A. de Cunha.
Lisbon, Observatory	30.05	763.2	30.41	772.4	56.8	13.8	73	SW	7.4	3.3			7			0	0		The Staff.
Ponta Delgada, (Azores)	30.04	762.9	30.11	764.7	64.0	17.8	94	SW	13.7	6.1			10			0.150	3.8	Raining	

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

NAVAL SERIES. VESSELS.																Sea or swell. Height scale 0–9	Direction from—		
S. Bartholomew Dias																			R, A. T. Pinha, Com'd't.
S. S. India																			A. D. Pedroso, Com'd't.
S. S. Mindello																			J. F. R. R. Bastos, Com'd't.
S. S. Sado																			A. N. P. Sampaio, Com'd't.
S. S. Sá da Bandeira																			F. Texeira da Silva, Com'd't.
S. S. Tejo																			F. J. Ferreina,dos Amas,Com'

NOTE.—The originals, except for S. S. Tejo, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the cooperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

STATIONS.	Bar. corr. Inches.	Millimeters.	Reduced Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	Force.	Up'er.	Low'r.	Upper.	Lower.	Inches.	Millimeters.	WEATHER.	OBSERVER.
Warsaw	29.02	737.0	29.46	748.2	25.5	— 3.6	93	WSW	25	11			10n					Snowing	Astronomical Obs.
Wilna	28.80	731.4	29.22	742.3	26.2	— 3.2	97	S	2	1			10					Snowing	Astronomical Obs
Dorpat	29.07	738.3	29.32	744.7	21.2	— 6 0	94	E	9	4			10n					Snowing	Prof. Dr. Weihrauch.
St. Petersburg	29.55	750.5	29.56	750 9	22.3	— 5.4	80	SE	25	11			10n						Central Physical Obs.
Knopio	29.30	744.3	29.64	752.9	22.3	— 5.4	100	ESE	18	8			10 [n					Snowing	Ch. Forsten.
Kieff	29.04	737.5	29.70	754.3	27.7	— 2.4	92	SSW	9	4			10c;ks;						Physical Cabinet
Nikolaiev	29.78	756.3	29.85	758.1	41 7	5.4	87	SW	13	6			0						Kurdakof.
Kertch	29.94	760.5	29.96	761.0	47.8	8.8	80	SE	2	1			4						Lagorio.
Moscow	29.46	748.2	30.06	763.4	12.2	—11.0	89	SE	13	6			10s						Meteorological Obs.
Lugan	29.75	755.7	29.97	761.2	23.7	— 4.6	77	E	22	10			10			Blank	Blank		Meteorological Obs.
Archangel	30.13	765.2	30.15	765.7	20.8	— 6.2	90	SE	18	8			10						Ogorodnikof.
Tiflis	28.54	725.0	30.00	762 1	39.4	4 1	78	S	9	4			10						Physical Observatory
Astrakhan	30.45	773.3	30.36	771.2	12.7	—10.7	69	ESE	22	10			8cs;s						Sebastianof.
Kasan	30.43	772.8	30.73	780.5	4.5	—15.3	77	SE	2	1			0						Physical Cabinet
Orenburg																			Tschernischef.
Ekaterinburg	29.78	756 3	30.85	783.7	— 1.7	—18.7	80	W	2	1			0						Meteorological Obs.
Nukuss	30.19	766.8	30.45	773 5	1.6	—16.9	64	ENE	22	10			2ks						
Kasaly																			Bobrof.
Tashkend	28.71	729.3	30.64	778.3	5.4	—14.8	96	Calm	0	0			0						Michelson.
Barnaul	30.30	769.5	30.93	785.7	—27.9	—33.3	82	Calm	0	0			0						Meteorological Obs.
Yeniseisk	30.46	773.6	30.84	783.2	—15.7	—26.5	87	Calm	0	0			0						Marks.
Irkutsk																			Usolzef.
Oorga																			Mossin.
Krotkowo*	30.16	766.1	30.69	779.4	4.3	—15 4	66	SE	9	4			0						Cand. Fatjanow.
Peking, (China)	30.22	767.6	30.36	771.2	20.7	— 6.3	74	Calm	0	0			2k						Physical Observatory
Nertchinsk																			Meteorological Obs.
Vladivostock	30.22	767.5	30.26	768.5	13.8	—10.1	73	NW	4	2			0						
Nikolaievsk, on the Amoor					— 8.0	—22.2	61	Calm	0	0			0						

NOTE.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall; for Krotkowo, the barometer reduced to freezing but not to sea level. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 494.2? m., or 1,621.?? ft.; Irkutsk, [illegible] Nertchinsk, [illegible] m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft. * N. 53° 47′, E. 48° 34′.

SPANISH SERIES.

Furnished by the cooperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

STATIONS.	Bar. corr. Inches.	Millimeters.	Reduced Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	Force.	Up'er.	Low'r.	Upper.	Lower.	Inches.	Millimeters.	WEATHER.	OBSERVER.
Barcelona, Met. Obs'y																			Antonio Rave, Director.
Bilbao, Met. Obs'y																			Prof. Manuel de Naveran.
Burgos, Met. Obs'y																			Domingo Martin y Perez.
Madrid, Royal Observatory	28.10	713.8	30.43	773.0	42.3	5.7	98	SE	6.7	3.00		0	10			0.008	0.2	Foggy	The Staff.
Murcia, Met. Obs'y																			Olayo Diaz, Director.
Santiago, Met. Obs'y																			R. Gil Villanueva, Dir.
SUB-SERIES.																			
Havana, Cuba, W. I.	29.84	757.8	29.90	759.5	67.2	19.6	84	E	8.5	3.8		10pc	8k		SW	0	0	Cloudy	Benito Vines, S. J.
San Fernando, Naval Obs'y	30.30	769.6	30.40	772.2	57.0	13.9	64	WNW	8.6	3.9		0	2		N	0	0		Capt. C. Pujazon, R. N., Dir.
San Juan de PortoRico, W. I.			29.88	758.9	75.6	24.2	90	SE	0	0		3cs	0	Calm		0.030	0.75	Clear	Leonardo de Tejeda, Chief of Engineers.

NOTE.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. m. instead of 8:19 a. m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the cöoperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Low'r 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.78	756.5	29.82	757.5	23.6	— 5.0	.....	NE	.....	.....	4	.....	10	.....	.....	0.079	2.0	Snowing	
Umea	29.62	752.3	29.67	753.6	27.0	— 2.8	96	NE	.....	.....	2	.....	10	.....	.....	0.134	3.4	Snowing	
Hernosand	29.58	751.2	29.63	752.5	26.6	— 3.0	87	N	.....	.....	6	.....	10	.....	.....	0	0	.....	
Stockholm	29.18	741.1	29.35	745.6	29.5	— 1.4	92	NNE	.....	.....	4	.....	10	.....	.....	0.079	2.0	Snowing	
Wisby	29.24	742.7	29.30	744.2	31.3	— 0.4	92	NNE	.....	.....	7	.....	10	.....	.....	0.114	2.9	Snowing	
Sub-Series.																			
Upsala	29.36	745.7	29.43	747.6	29.7	— 1.3	94	NNW	16.7	7.4	.....	.....	10	.....	.....	0.125	3.17	Snowing	Dr. Hildebrandsson.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the cooperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.74	729.9	30.21	767.4	37.6	3.1	61	SW	.....	.....	2	.....	8	.....	.....	0.039	1.0	Cloudy	The Observatory.
Zurich	28.46	722.8	30.17	766.3	33.3	0.7	65	W	.....	.....	1	.....	6	.....	.....	0.016	0.4	Cloudy	The Observatory.

Note.—For Geneva the corresponding departures from the normal values are: Barometer, +2.2 mm.; Thermometer, +1.6 cent.; Relative Humidity, —20 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the cooperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	29.81	757.1	53.8	12.1	76	SE	4	2.0	.....	.....	6	.....	SW	0.307	7.8	.....	The Observatory.
Fao, (Persian Gulf)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salonica	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	B. Stefanides.
Valona	.....	.....	29.71	754.5	54.5	12.5	.....	SW	.....	.....	3	.....	10	.....	.....	0.28	7.	Raining	A. Bertrand.
Varna	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Imperial Observatory.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'ty	29.93	760.2	30.04	763.1	66.6	19.2	69	SW	.....	.....	1	.....	4ks	.....	SW	0.21	5.3	D. clouds	Prof. C. V. A. Van Dyck

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12), and Constantinople velocity in meters per second; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the cooperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	29.04†	737.6†	29.11†	739.4†	12.7	—10.7	89	Calm	0	0	.....	0	.....	.....	.....	.....	.....	.....	Hon. J. Ferguson.
Brockville, Ontario	29.87	758.7	30.19	766.8	31	— 0.6	.....	NE	1	0.4	.....	.....	8s	.....	E	0	0	Cloudy	W. R. Bigg.
*Chatham, N. B	30.04	763.0	30.11	764.8	12	—11.1	100	SW	3	1.3	.....	0	Haze	.....	Calm	0	0	Clear.	G. A. Blair.
Charlottetown, P. E. Island	30.03	762.7	30.07	763.8	27	— 2.8	89	N	2	0.9	.....	0	0	.....	.....	0	0	Clear	H. J. Cundall, C. E.
Cornwall, Ontario	29.95	760.7	30.15	765.8	26.8	— 2.9	96	NE	.....	.....	1	0	1s	.....	.....	0	0	Fair	James Smith, M. A.
Dalhousie, N. B	30.08	764.0	30.12	765.0	19.5	— 6.9	92	W	.....	.....	1	.....	.....	.....	.....	0	0	Bright	H. A. Johnson.
Esquimault, B. C	30.20	767.1	30.25	768.3	36.6	2.6	96	NE	.....	.....	.....	0	0	.....	.....	0	0	Clear	W. H. Bevis.
*Father Point, Quebec	30.14	765.5	30.16	766.1	15	— 9.4	88	SW	7	3.1	.....	0	5s	.....	Calm	0	0	Clear	J. McWilliams.
Fredericton, N. B	30.10	764.5	30.17	766.3	13.1	—10.5	96	NW	3.1	1.4	.....	0	0	.....	.....	0	0	Clear	Prof. Harrison.
*Fort Garry, Manitoba	29.46	748.3	30.35	770.9	22	— 5.6	96	N	8	3.6	.....	.....	10n	.....	.....	0	0	Cloudy	James Stewart.
Goderich, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	H. J. Strang, M. A
Granton, Ontario	29.02	737.1	30.18	766.6	28.2	— 2.1	96	NE	.....	.....	1	0	0	.....	.....	.....	.....	.....	James Grant.
*Halifax, N. S	29.91	759.7	30.05	763.3	26	— 3.3	81	NW	6	2.7	.....	0	0	.....	.....	0	0	Clear	F. Allison, M. A.
Hamilton, Ontario	29.82	757.4	30.21	767.3	33.7	0.9	83	NE	.....	.....	1	1cs	.....	E	.....	0	0	Clear	Geo. Dickson, M. A
Heart's Content, N. F	29.86	758.4	29.89	759.2	26	— 3.3	87	N	.....	.....	1	3ck	4s	N	N	0.01	0.3	Cloudy	E. Weedon.
*Kingston, Ontario	29.83	757.7	30.18	766.6	33	0.6	85	NE	2	0.9	.....	.....	10s	.....	Calm	0	0	Cloudy	S. Woods, M. A
Little Glace Bay, N. S	30.00	762.0	30.04	763.0	32.0	0.0	.....	N	8	3.6	.....	8k	.....	N	.....	0	0	Cloudy	C. H. Rigby.
*Montreal, Quebec	29.98	761.5	30.20	767.1	22	— 5.6	94	E	3	1.3	.....	0	Sm'e	.....	.....	0	0	Clear	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.51	750.3	30.26	768.6	32	0.0	85	N	3	1.3	.....	2ck	5ks	NE	NE	0	0	Fair	Rev. R. Mosley.
Peterboro, Ontario	29.41	747.0	30.20	767.1	28.5	— 1.9	71	Calm	.....	.....	0	0	2ck	.....	.....	0	0	Fine	J. F. Jeffers, B. A.
Port Dover, Ontario	29.43	747.5	30.15	765.8	32	0.0	100	N	8	3.6	.....	2k	0	N	.....	0	0	Fair	H. Morgan.
Port Hastings, N. S	29.99	761.7	30.04	763.0	33.6	0.9	.....	NW	3	1.3	.....	.....	.....	.....	.....	0	0	Fair	Peter Grant.
Port Stanley, Ontario	29.49	749.0	30.16	766.1	36	2.2	87	NE	4	1.8	.....	.....	10ks	.....	NE	0	0	Fine	M. Payne.
*Quebec, Quebec	29.88	758.9	30.23	767.8	10	—12.2	79	Calm	0	0	.....	.....	Fog	.....	.....	0	0	Cloudy	Capt. Ashe, R. N
*Rockliffe, Ontario	29.76	755.9	30.24	768.1	30	— 1.1	83	NW	5	2.2	.....	.....	8s	.....	NW	0	0	Dense fog	W. H. McIntyre.
St. John, N. B	29.96	761.0	30.14	765.5	23	— 5.0	86	NW	1	0.4	.....	0	0	.....	.....	0	0	Fair	G. Murdock, C. E.
*Saugeen, Ontario	29.45	748.0	30.19	766.8	28	— 2.2	100	Calm	0	0	.....	2cs	0	.....	.....	0	0	Clear.	K. Stewart.
Stayner, Ontario	29.38	746.2	30.19	766.8	32	0.0	95	Calm	0	0	.....	5k	0	SE	.....	0	0	Clear	R. J. Cole.
Stratford, Ontario	28.93	734.8	30.28	769.1	27.2	— 2.7	96	Calm	0	0	.....	0	2s	.....	.....	0	0	Fair	C. J. MacGregor, M. A
*Sydney, C. B	30.01	762.2	30.04	763.0	28	— 2.2	93	W	3	1.3	.....	2k	0	N	.....	0	0	Fine	T. C. Hill.
*Toronto, Ontario	29.80	756.9	30.20	767.1	32	0.0	90	NE	5	2.2	.....	0	0	.....	.....	0	0	Clear	Magnetic Observatory.
Windsor, N. S	29.91	759.7	30.01	762.2	25.5	— 3.6	81	S	2	0.9	.....	0	0	.....	.....	0	0	Clear	Prof. John E. Oram.
Woodstock, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Montgomery.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	28.0	— 2.2	.....	N	.....	.....	.....	10k	10s	.....	.....	Inap.	Inap.	Cloudy	John Delany

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

† Evidently 1 inch or 25.4 mm. too low.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.94	760.5	30.18	766.6	25	— 3.9	87	NW	3	1.3	.....	0	2s	.....	Calm	0	0	Fair	
Alpena, Michigan	29.54	750.3	30.21	767.3	36	2.2	80	Calm	0	0	.....	.....	10s	.....	NE	0	0	Cloudy	
Atlantic City, New Jersey	30.05	763.3	30.07	763.8	36	2.2	80	NW	10	4.5	.....	0	2s	.....	Calm	0	0	Clear	
Augusta, Georgia	29.87	758.7	30.06	763.5	44	6.7	92	N	1	0.4	.....	5c	Fog	SW	Calm	0.01	0.3	Foggy	
Baltimore, Maryland	30.08	764.0	30.13	765.3	40	4.4	56	N	5	2.2	.....	2ck	2s	NW	N	0	0	Fair	
Barnegat, New Jersey	30.05	763.3	30.07	763.8	43	6.1	75	NE	16	7.2	.....	0	0	.....	.....	0	0	Clear	
Bismarck, Dakota	28.44	722.4	30.30	769.6	28	— 2.2	86	NW	8	3.6	.....	.....	10s	.....	NW	0.01	0.3	Cloudy	
Boise City, Idaho	27.42	696.5	30.30	769.6	16	— 8.9	73	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Boston, Massachusetts	29.95	760.7	30.11	764.8	30.5	— 0.8	74	NW	5	2.2	.....	0	Sm'e	.....	.....	0	0	Clear	
Bracketville, Texas	28.74	730.0	29.77	756.1	53	11.7	79	N	4	1.8	.....	.....	10s	.....	N	0.78	19.8	Cloudy	
Breckenridge, Minnesota	29.20	741.7	30.26	768.6	28	— 2.2	94	N	9	4.0	.....	.....	10n	.....	Calm	0.04	1.0	Light snow	
Brownsville, Texas	29.75	755.6	29.82	757.4	59	15.0	87	N	10	4.5	.....	.....	10s	.....	N	0.50	12.7	Cloudy	
Buffalo, New York	29.46	746.7	30.13	765.3	34	1.1	90	NE	9	4.0	.....	.....	1s	.....	NW	0	0	Clear	
Burkes, Arizona	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Burlington, Vermont	29.91	759.7	30.18	766.6	24	— 4.4	88	NE	3	1.3	.....	.....	Fog	.....	Calm	0	0	Foggy	
Cairo, Illinois	29.65	753.1	30.05	763.3	46	7.8	84	N	6	2.7	.....	.....	10s	.....	Calm	0	0	Cloudy	
Camp Grant, Arizona	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Camp Verde, Arizona	26.86	682.2	30.35	770.9	28	— 2.2	88	NW	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Campo, California	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Cape Hatteras, N. Carolina	29.90	759.4	29.91	759.7	52	11.1	86	NE	26	11.6	.....	.....	10s	.....	NE	0.03	0.8	Cloudy	
Cape Henry, Virginia	29.98	761.5	30.00	762.0	45	7.2	92	N	10	4.5	.....	.....	10s	.....	N	0.11	2.8	Cloudy	
Cape Lookout, N. Carolina	29.92	760.0	29.94	760.5	48	8.9	92	N	22	9.8	.....	.....	10s	.....	N	0.15	3.8	Cloudy	
Cape May, New Jersey	30.03	762.7	30.06	763.5	35	1.7	80	N	14	6.3	.....	0	0	.....	.....	0	0	Clear	
Charleston, South Carolina	29.95	760.7	30.02	762.5	51	10.6	78	NE	7	3.1	.....	0	1s	.....	Calm	0	0	Clear	
Cheyenne, Wyoming	24.02	610.1	29.96	761.0	14	—10.0	64	N	14	6.3	.....	0	5s	.....	N	0.03	0.8	Fair	
Chicago, Illinois	29.40	746.7	30.10	764.5	43	6.1	83	E	2	0.9	.....	.....	10s	.....	E	Inap.	Inap.	Threatening	
Cincinnati, Ohio	29.35	746.5	30.04	763.0	45	7.2	84	NE	6	2.7	.....	.....	10s	.....	NE	Inap.	Inap.	Threatening	
Cleveland, Ohio	29.40	746.7	30.14	765.5	40	4.4	100	NE	6	2.7	.....	.....	10n; fg	.....	Calm	0.03	0.8	Light rain	
Concho, Texas	28.10	713.7	29.82	757.4	40	4.4	80	N	16	7.2	.....	8cs	0	N	.....	1.12	28.4	Cloudy	
Corsicana, Texas	29.42	747.3	29.89	759.2	49	9.4	100	NE	4	1.8	.....	.....	10n	.....	Calm	0.54	13.7	Light rain	
Davenport, Iowa	29.47	748.5	30.12	765.0	44	6.7	83	NE	1	0.4	.....	.....	10s	.....	Calm	0.07	1.8	Cloudy	
Deadwood, Dakota	25.57	649.5	.....	.....	18	— 7.8	84	NE	1	0.4	.....	.....	10n	.....	Calm	0.06	1.5	Light snow	
Denison, Texas	29.13	739.9	29.93	760.2	49	9.4	100	NE	4	1.8	.....	.....	10n	.....	NE	0.58	14.7	Heavy rain	
Denver, Colorado	24.87	631.7	30.09	764.3	13	—10.6	80	NW	2	0.9	.....	.....	10s	.....	Calm	0.12	3.0	Cloudy	
Detroit, Michigan	29.44	747.8	30.14	765.5	35	1.7	80	NE	1	0.4	.....	.....	10s	.....	Calm	Inap.	Inap.	Cloudy	
Dodge City, Kansas	27.48	698.0	29.88	758.9	29	— 1.7	89	N	24	10.7	.....	.....	10s	.....	N	0.01	0.3	Cloudy	
Dubuque, Iowa	29.41	747.0	30.13	765.3	39	3.9	82	Calm	0	0	.....	.....	10s	.....	Calm	0.01	0.3	Cloudy	
Duluth, Minnesota	29.48	748.8	30.19	766.8	35	1.7	80	NW	7	3.1	.....	.....	10s	.....	NW	0.02	0.5	Cloudy	
Eagle Pass, Texas	29.12	739.6	29.87	758.7	51	10.6	93	NW	8	3.6	.....	.....	10n	.....	Calm	1.11	28.2	Light rain	
Eastport, Maine	30.04	763.0	30.11	764.8	28	— 2.2	67	N	9	4.0	.....	0	0	.....	.....	0	0	Clear	
Erie, Pennsylvania	29.37	746.0	30.16	764.5	43	6.1	84	NE	3	1.3	.....	.....	10s	.....	.....	0.03	0.8	Cloudy	
Escanaba, Michigan	29.54	750.3	30.22	767.6	36	2.2	90	N	5	2.2	.....	.....	10s	.....	N	0.02	0.5	Cloudy	
Florence, Arizona	28.43	722.1	30.03	762.7	40	4.4	56	N	.....	.....	.....	.....	10s	.....	E	0	0	Cloudy	
Fort Bayard, New Mexico	23.91	608.1	29.94	760.5	23	— 5.0	46	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Fort Craig, New Mexico	25.41	645.4	.....	.....	30	— 1.1	78	N	16	7.2	.....	.....	10s	.....	N	0	0	Cloudy	
Fort Gibson, Indian Ter	29.41	747.0	29.95	760.7	47	8.3	92	N	5	2.2	.....	.....	10s	.....	Calm	0	0	Threatening	
Fort Griffin, Texas	28.73	729.7	30.04	763.0	39	3.9	82	NW	16	7.2	.....	.....	10s	.....	Calm	0.29	7.4	Cloudy	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	28.77	730.7	29.91	759.7	39	3.9	91	NW	12	5.4	.....	.....	10n	.....	N	0.09	2.3	Light rain	
Galveston, Texas	29.77	756.1	29.82	757.4	53	11.7	100	N	15	6.7	.....	.....	10n	.....	Calm	0.95	24.1	Light rain	
Grand Haven, Michigan	29.50	749.3	30.16	766.1	40	4.4	73	E	8	3.6	.....	.....	10s	.....	E	0	0	Cloudy	
Indianapolis, Indiana	29.28	743.7	30.07	763.8	43	6.1	91	NE	6	2.7	.....	.....	10s	.....	NE	0	0	Cloudy	
Indianola, Texas	29.76	755.9	29.79	756.7	54	12.2	87	NE	23	10.3	.....	.....	10s	.....	E	1.13	28.7	Cloudy	
Jacksboro, Texas	28.81	731.8	29.97	761.2	41	5.0	91	NW	14	6.3	.....	.....	10n	.....	.....	1.04	26.4	Light rain	
Jacksonville, Florida	29.96	761.0	29.98	761.5	50	10.0	86	NW	5	2.2	.....	5k	Fog	NW	Calm	0	0	Foggy	
Keokuk, Iowa	29.45	748.0	30.08	764.0	40	4.4	82	NE	4	1.8	.....	.....	10s	.....	Calm	0.01	0.3	Cloudy	
Key West, Florida	29.90	759.4	29.93	760.2	67.0	19.4	74	NE	11	4.9	.....	.....	10s	.....	NW	0	0	Cloudy	
Kittyhawk, North Carolina	29.90	759.4	29.92	760.0	50	10.0	86	NE	38	17.0	.....	5ck	5s	E	NE	0.60	15.2	Cloudy	
Knoxville, Tennessee	29.99	761.7	30.00	762.0	51	10.6	93	NE	2	0.9	.....	.....	10ks	.....	SE	0.01	0.3	Cloudy	
La Crosse, Wisconsin	29.38	746.2	30.13	765.3	38	3.3	100	E	1	0.4	.....	.....	Fog	.....	.....	0.03	0.8	Foggy	
La Mesilla, New Mexico	25.98	659.9	30.15	765.3	29	— 1.7	78	Calm	0	0	.....	.....	10n	.....	Calm	Inap.	Inap.	Light snow	
Laredo, Texas	.....	.....	.....	.....	55	12.8	93	NW	6	2.7	.....	.....	10s	.....	Calm	0.82	20.8	Cloudy	
Leavenworth, Kansas	29.23	742.4	30.10	764.5	36	2.2	90	N	11	4.9	.....	.....	10s	.....	Calm	0.03	0.8	Cloudy	
Los Angeles, California	29.72	754.9	30.06	763.5	44	6.7	76	N	6	2.7	.....	2ck	0	W	.....	0	0	Fair	
Louisville, Kentucky	29.47	748.5	30.04	763.0	46	7.8	92	NE	8	3.6	.....	.....	10s	.....	NE	0.05	1.3	Cloudy	
Lynchburg, Virginia	29.40	746.7	30.09	764.3	47	8.3	77	NE	1	0.4	.....	.....	10s	.....	W	0	0	Cloudy	
Maricopa Wells, Arizona	.....	.....	.....	.....	31	— 0.6	98	N	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Marquette, Michigan	29.46	748.3	30.18	766.6	38	3.3	71	S	4	1.8	.....	.....	10s	.....	Calm	0.27	6.9	Cloudy	
Mason, Texas	28.27	718.0	30.05	763.3	44	6.7	92	NW	20	8.9	.....	.....	10s	.....	.....	2.33	59.2	Cloudy	
Memphis, Tennessee	29.68	753.9	30.00	762.0	49	9.4	85	NE	8	3.6	.....	.....	10s	.....	NE	Inap.	Inap.	Cloudy	
Milwaukee, Wisconsin	29.44	747.8	30.14	765.5	39	3.9	81	E	8	3.6	.....	.....	8s	.....	E	0.09	2.3	Clearing	
Mobile, Alabama	29.86	758.4	29.90	759.4	52	11.1	90	Calm	0	0	.....	1c	1s	Calm	Calm	0	0	Fair	
Montgomery, Alabama	29.74	755.4	29.97	761.2	53	11.7	90	SE	3	1.3	.....	2cs	Fog	Calm	Calm	0	0	Fair	
Morgantown, West Virginia	28.99	736.3	30.05	763.3	48	8.5	89	N	4	1.8	.....	.....	10s	.....	W	0	0	Foggy	
Mt. Washington, N. H.	23.73	602.7	30.09	764.3	24	— 4.4	61	NE	18	8.0	.....	0	0	.....	.....	0	0	Clear	
Nashville, Tennessee	29.47	748.5	30.04	762.7	50	10.0	93	N	4	1.8	.....	.....	10s	.....	N	0.02	0.5	Cloudy	
New Haven, Connecticut	29.99	761.7	30.14	764.8	33	0.6	69	N	5	2.2	.....	0	0	.....	.....	0	0	Clear	
New London, Connecticut	30.03	762.7	30.08	764.0	31	— 0.6	79	N	10	4.5	.....	0	0	.....	.....	0	0	Clear	
New Orleans, Louisiana	29.74	755.4	29.80	756.9	55	12.8	87	E	8	3.6	.....	2ck	5ks	SE	SE	0	0	Fair	
Newport, Rhode Island	30.04	763.0	30.09	764.3	35	1.7	79	N	7	3.1	.....	0	0	.....	.....	0	0	Clear	
New York, New York	29.92	760.0	30.10	764.5	40	4.4	63	N	8	3.6	.....	0	Fog	.....	N	Inap.	Inap.	Foggy	
Norfolk, Virginia	29.99	761.7	30.05	763.3	44	6.7	92	NE	12	5.4	.....	.....	10s	.....	NE	0.38	9.7	Cloudy	
North Platte, Nebraska	27.22	691.4	29.95	760.7	22	— 5.6	85	N	8	3.6	.....	.....	10s	.....	Calm	0.16	4.1	Cloudy	
Olympia, Washington Ter.	30.18	766.6	30.22	767.6	33	0.6	100	E	1	0.4	.....	.....	Fog	.....	Calm	0	0	Foggy	
*Omaha, Nebraska	28.99	736.3	30.11	764.8	34	1.1	90	N	2	0.9	.....	.....	10s	.....	Calm	Inap.	Inap.	Cloudy	
Oswego, New York	29.83	757.7	30.16	766.1	39	3.9	72	N	2	0.9	.....	.....	10s	.....	.....	0	0	Cloudy	
Pembina, Dakota	29.48	748.8	30.36	771.1	25	— 3.9	88	N	11	4.9	.....	.....	10s	.....	Calm	Inap.	Inap.	Cloudy	
Philadelphia, Pennsylvania	30.08	764.0	30.13	765.3	39	3.9	63	NE	10	4.5	.....	5cs	Sm'e	N	Calm	0	0	Fair	
Phœnix, Arizona	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Pike's Peak, Colorado	17.42	442.5	29.63	752.6	—14	—25.6	73	Calm	0	0	.....	10s	.....	NE	.....	0	0	Fair	
Pioche, Nevada	24.04	610.6	29.80	756.9	16	— 8.9	83	NW	10	4.5	.....	0	.....	.....	.....	Inap.	Inap.	Clear	
Pittsburg, Pennsylvania	29.23	742.4	30.05	763.3	45	7.2	92	E	3	1.3	.....	.....	10s; fg	.....	Calm	0	0	Cloudy	
Port Huron, Michigan	29.47	748.5	30.16	766.1	35	1.7	90	NE	5	2.2	.....	2cs	5ks	Calm	NE	0	0	Fair	
Portland, Maine	30.07	763.8	30.12	765.0	33	0.6	79	N	7	3.1	.....	0	Haze	.....	.....	0	0	Clear	
Portland, Oregon	30.20	767.1	30.30	769.6	35	1.7	80	E	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Prescott, Arizona	24.73	628.1	30.09	764.3	8	—13.3	33	NE	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Punta Rassa, Florida	29.91	759.7	29.93	760.2	58	14.4	81	NE	12	5.4	.....	0	10ks	.....	NE	0	0	Cloudy	
Red Bluff, California	29.78	756.4	30.16	766.1	39	3.9	91	N	4	1.8	.....	.....	10s	.....	Calm	0	0	Cloudy	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Rochester, New York	29.52	749.8	30.15	765.8	36	2.2	90	NE	3	1.3	.....	2k	Sm'e	Calm	Calm	0	0	Fair	
Roseburg, Oregon	29.59	751.6	30.18	766.6	35	1.7	95	Calm	0	0	.....	.....	10s	.....	Calm	0	0	Cloudy	
Sacramento, California	30.05	763.3	30.14	765.5	40	4.4	91	SE	5	2.2	.....	5k	0	SE	.....	0	0	Fair	
St. Louis, Missouri	29.49	749.0	30.08	764.0	42	5.6	91	N	8	3.6	.....	.....	10s	.....	Calm	0.12	3.0	Cloudy	
St. Marks, Florida	29.96	761.0	29.98	761.5	49	9.4	97	NE	4	1.8	.....	0	5s	.....	Calm	0	0	Fair	
St. Paul, Minnesota	29.26	743.2	30.12	765 0	34	1.1	90	N	6	2.7	.....	.....	10s	.....	Calm	0.09	2.3	Cloudy	
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salt Lake City, Utah	25.77	654.6	30.10	764.5	18	— 7.8	84	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
San Antonio, Texas	29.17	740.9	29.76	755.9	53	11.7	93	NW	4	1.8	.....	.....	10s	.....	NW	1.24	31.5	Cloudy	
San Diego, California	30.02	762.5	30.09	764.3	46	7.8	85	NE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Sandusky, Ohio	29.44	747.8	30.12	765.0	40	4.4	100	NE	10	4.5	.....	.....	Fog	.....	Calm	0.16	4.1	Light rain	
Sandy Hook, New Jersey	30.08	764.0	30.10	764.5	39	3.9	63	NE	14	6.3	.....	0	Fog	.....	.....	0	0	Clear	
San Francisco, California	30.02	762.5	30.09	764.3	49	9.4	85	SE	2	0.9	.....	5ck	0	S	.....	0	0	Fair	
Santa Fé, New Mexico	23.12	587.2	29.66	753.4	15	— 9.4	65	N	10	4.5	.....	2cs	0	Calm	.....	0	0	Fair	
Savannah, Georgia	29.93	760.2	30.02	762.5	50	10.0	86	N	5	2.2	.....	2c	2s	SW	Calm	0	0	Fair	
Shreveport, Louisiana	29.70	754.4	29.92	760.0	50	10.0	93	NE	5	2.2	.....	.....	10s	.....	N	0	0	Cloudy	
Smithville, North Carolina	29.98	761.5	30.01	762.2	44	6.7	84	N	8	3.6	.....	0	1s	.....	Calm	0	0	Clear	
Springfield, Massachusetts	29.94	760.5	30.07	763.8	28	— 2.2	57	N	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Stockton, Texas	26.95	684.5	29.95	760.7	34	1.1	90	N	12	5.4	.....	.....	10s	.....	N	Inap.	Inap.	Cloudy	
Thatcher's Island, Mass	30.05	763.3	30.10	764.5	40	4.4	73	NE	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Toledo, Ohio	29.44	747.8	30.14	765.5	40	4.4	82	Calm	0	0	.....	.....	10s	.....	Calm	0	0	Cloudy	
Tucson, Arizona	.....	.....	.....	.....	33	0.6	42	SW	.....	.....	.....	8k	0	.....	.....	0	0	Fair	
Tybee Island, Georgia	29.97	761.2	30.00	762.0	52	11.1	86	N	10	4.5	.....	2c	0	SW	.....	0	0	Fair	
Umatilla, Oregon	30.16	766.1	.....	.....	33	0.6	79	NE	8	3.6	.....	.....	10s	.....	N	0	0	Cloudy	
Vicksburg, Mississippi	29.65	753.1	29.91	759.7	54	12.2	80	NE	8	3.6	.....	.....	10s	.....	NE	0	0	Cloudy	
Virginia City, Montana	24.40	619.8	29.88	758.9	16	— 8.9	83	Calm	0	0	.....	.....	10n	.....	Calm	0.01	0.3	Light snow	
Visalia, California	29.78	756.4	30.16	766.1	38	3.3	100	Calm	0	0	.....	10c;hz	0	N	.....	0	0	Cloudy	
Washington, D. C.	30.00	762.0	30.12	765.0	38	3.3	72	N	6	2.7	.....	2ck	2s;sm	NW	N;Calm	0	0	Fair	
Wickenburg, Arizona	.....	.....	.....	.....	26	— 3.3	75	NW	.....	.....	.....	2k	0	Calm	.....	0	0	Fair	
Wilmington, N. Carolina	29.92	760.0	30.00	762.0	44	6.7	83	NW	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Winnemucca, Nevada	25.75	654.0	30.11	764.8	11	—11.7	80	NE	7	3.1	.....	0	0	.....	.....	0	0	Clear	
Wood's Holl, Mass	30.03	762.7	30.08	764.0	34	1.1	79	N	5	2.2	.....	Haze	0	.....	.....	0	0	Clear	
Yankton, Dakota	28.86	733.0	30.22	767.6	29	— 1.7	88	NW	7	3.1	.....	.....	10n	.....	Calm	0.13	3.3	Light snow	
Yuma, Arizona	29.96	761.0	30.13	765.3	45	7.2	67	N	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Sub-Series.																			
York Factory, B. A.	30.46	773.7	30.52	775.2	— 3.0	—19.4	85	N	11	4.9	.....	0	0	.....	.....	0	0	Clear	J. Fortescue, W. Wood.
Havana, Cuba, W. I.	29 87	758.7	29.89	759.2	69	20.6	79	SE	2.4	1.1	.....	8ck	0	SW	.....	0	0	Cloudy	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.13	765.3	30.14	765.5	76	24.4	86	Calm	0	0	.....	2c	2s	SE	SE	0	0	.....	James Gall.
Navassa, W. I.	29.85	758.2	29.93	760.2	79.5	26.4	.....	E	10	4.5	.....	.....	.....	.....	.....	0	0	Fair	F. M Everett.
St. Thomas, W. I.	.....	.....	.....	.....	78	25.6	.....	ESE	2	0.9	.....	2c	5ks	E	.....	0.5	13.	Cloudy	G. O. Gellich
Paramaribo, D. Guiana, S. A.	.....	.....	30.01	762.2	82	27.8	78	E	.....	.....	3	.....	8ks	.....	.....	0.040	1.02	Cloudy	C. J. Hering.
Batavia, Dutch Guiana, S. A	30.07	763.7	30.08	763.9	81.5	27.5	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0	Clear	Dr. H. Groot.
Medellin, Colombia, S. A.	25.20	640.1	.....	.....	67.0	19.4	86	Calm	.....	.....	0	1cs	2s;ks	.....	.....	0.07	1.8	Fair	Thomas Herran.
Honolulu, Oahu, H. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Daniel Smith.
Makawao, Maui, H. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo; for Batavia, the barometer reduced to freezing but not to sea-level. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Deadwood, (?); Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,916.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m. Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m. Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.67 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation

STATIONS AND VESSELS.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer
Navy Yard Mare Island, Cal.	30.06	763.5	45	7.2	44	6.7	84	ESE	8	3.6	.....	.....	7ck; ks	.....	E	0	0	.....	.....	Cloudy.....	
Navy Yard, Pensacola, Fla.	30.02	762.5	.....	.....	55	12.8	93	NE	5	2.2	.....	.....	6	.....	SW	0.51	13.0	.....	.....	D. clouds.....	
Navy Yard, Portsmouth, N.H	30.15	765.8	63	17.2	29	— 1.7	88	NNW	.....	.....	1	.....	.....	.....	.....	0	0	.....	.....	Clear	
Naval Hospital, Yokohama, Japan.....	30.10	764.5	46	7.8	37.5	3.1	64	N	.....	.....	1	.....	10s	.....	W	0	0	.....	.....	Overcast.....	
Alliance, Smyrna, Turkey.....	29.95	760.7	64	17.8	64	17.8	68	S	.....	.....	1	.....	8	.....	S	.....	.....	.....	.....	Cloudy.....	
Ashuelot. Shanghai, China.....	30.34	770.6	53	11.7	38	3.3	100	NW	.....	.....	1	.....	10	.....	Calm	.....	.....	.....	.....	D. clouds.....	
Canonicus, New Orleans, La.....	29.82	757.4	46	7.8	57	13.9	87	ENE	.....	.....	3	.....	.....	.....	.....	.....	.....	.....	.....	Cloudy.....	
Colorado, New York, N. Y.....	30.10	764.5	39	3.9	38	3.3	63	NNE	8	3.6	.....	.....	2	.....	NE	0	0	.....	.....	Light fog.....	
Despatch, Constantinop'e, Turkey.	29.95	760.7	80	26.7	55	12.8	87	S	.....	.....	1	.....	5	.....	SW	.....	.....	.....	.....	Cloudy.....	
Essex, S. 12° 53′, E. 1° 24′.....	29.94	760.5	77	25.0	77	25.0	86	S	.....	.....	1	.....	9	.....	.....	.....	.....	Smooth	S	D. clouds....	
Franklin. Norfolk, Va.....	30.09	764.3	67	19.4	45	7.2	92	N	12.5	5.6	.....	.....	9	.....	N	0.2	5.	.....	.....	Cloudy.....	
Guard Lisbon, Portugal.....	30.37	771.4	65	18.3	62	16.7	72	SW	.....	.....	1	.....	5	.....	S&W	.....	.....	.....	.....	D. clouds.....	
Lackawanna. Mare Island, Cal.....	30.17	766.3	.....	.....	46	7.8	84	E	.....	.....	1	.....	8	.....	.....	.....	.....	.....	.....	D. clouds.....	
Marion, Villefranche, France.....	29.86	758.4	58	14.4	56	13.3	75	SE	.....	.....	2	.....	9	.....	Calm	0	0	Smooth	S	D. clouds.....	
Michigan, Erie, Pa.....	29.58	751.3	55	12.8	42	5.6	91	ENE	.....	.....	1	.....	10	.....	ENE	.....	.....	.....	.....	Cloudy.....	
Monocacy, Hong-Kong, China.....	30.03	762.7	65	18.3	64	17.8	68	Calm	.....	.....	0	.....	10	.....	.....	0	0	.....	.....	D. clouds.....	
New Hampshire, Port Royal, S.C.....	30.16	766.1	.....	.....	51	10.6	93	ENE	6	2.7	.....	.....	9	.....	SW	.....	.....	.....	.....	D. clouds.....	
Omaha, Valparaiso, Chili.....	30.06	763.5	63.5	17.5	60	15.6	71	NNE	.....	.....	1	.....	1	.....	Calm	0	0	.....	.....	Pleasant.....	
Onward, Callao, Peru.....	30.00†	762.0†	76	24.4	74	23.3	86	SE	.....	.....	2	.....	10	.....	.....	.....	.....	Long	W	D. clouds.....	
Ossipee, Norfolk, Va.....	30.10	764.5	70	21.1	46	7.8	92	N	.....	.....	3	.....	9	.....	NNE	.....	.....	.....	.....	Squally.....	
Palos, Shanghai, China.....	30.32	770.1	49	9.4	37	2.8	90	NW	.....	.....	1	.....	10	.....	Calm	.....	.....	.....	.....	Overcast.....	
Plymouth. N. 12° 25′, W. 78° 25′.....	29.91	759.7	83	28.3	82	27.8	100	NE	.....	.....	1–2	.....	6	.....	NE	.....	.....	Smooth	NE	Pleasant.....	
Powhatan, Norfolk, Va.....	.....	.....	.....	.....	49	9.4	100	N	12.0	5.4	.....	.....	10	.....	.....	0.19	4.8	.....	.....	Cloudy.....	
Ranger, Shanghai, China.....	30.47	773.9	.....	.....	44.5	6.9	88	NW	.....	.....	2	.....	10	.....	Calm	.....	.....	.....	.....	Overcast.....	
Rio Bravo, Brownsville, Texas.....	29.68	753.9	.....	.....	57	13.9	100	NW	.....	.....	5	.....	10	.....	NW	.....	.....	.....	.....	Squally	
Santee, Annapolis, Md.....	30.17	766.3	65	18.3	41	5.0	57	N	.....	.....	3	.....	2	.....	.....	0	0	.....	.....	Clear.....	
Saratoga, Norfolk, Va.....	.....	.....	.....	.....	52	11.1	93	N	.....	.....	4–6	.....	10	.....	NE	Mod'ate	Mod'ate	.....	.....	Overcast.....	
St. Louis, League Island, Pa	29.96	761.0	38	3.3	39	3.9	73	NW	3	1.3	.....	.....	7	.....	NW	0	0	.....	.....	Fair.....	
Swatara, Norfolk, Va.....	30.14	765.5	.....	.....	46	7.8	84	NNE	.....	.....	3	.....	9	.....	N&E	.....	.....	.....	.....	D. clouds.....	
Tennessee, Shanghai, China	30.36	771.1	70	21 1	50	10.0	79	NNW	.....	.....	2	.....	10	.....	N	0.02	0.5	.....	.....	Overcast.....	
Trenton, N. 40° 45′, E. 12° 45′.....	29.93	760.2	.....	.....	62	16.7	77	WSW	25	11.2	.....	.....	5	.....	W	1.0	25.	Mod'ate	W	Squally.....	
Vandalia, Valetta, Malta.....	30.05	763.3	64	17.8	62	16.7	88	WNW	.....	.....	4–5	.....	6	.....	WNW	.....	.....	.....	.....	Squally.....	
Wabash, Boston, Mass.....	30.08	764.0	42	5.6	30	— 1.1	.....	NW	4	1.8	.....	.....	0	.....	.....	0	0	.....	.....	Blue sky.....	
Wyoming, Washington, D. C.....	30.52	775.2	.....	.....	47	8.3	.....	Calm	.....	.....	0	.....	2	.....	.....	.....	.....	.....	.....	D. clouds.....	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. The position given for the Plymouth is that at noon, local time, instead of that at 7:35 a. m., Washington time.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the air.		Relative Humidity.	Wind.			Force.	Clouds.				Sea-swell		Weather.	Observer.
								Direction.	Velocity.			Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.	Character.	Direction from—		
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—				
S. S Alaska																			
S. S. China																			
S. S. City of New York																			Capt. Berry.
S. S. City of Panama																			Capt. Cobb.
S. S. City of Peking, Yokohama, Japan			30.17*	766.3*	39	3.9	91	NW			2	10		N	Smooth		Overcast.		Capt. Seabury.
S. S. City of Sydney																			Lt. Z. L. Tanner, U.S.N.
S. S. City of Tokio, N. 34° 03′, E. 137° 23′			30.05	763.3	60	15.6		NNE			6	10				Smooth	NE	Overcast.	Capt. Dearborn.
S. S. Colima																			Capt. Maury.
S. S. Costa Rica																			Capt. Searle.
S. S. Dakota																			Capt. Whitebury.
S. S. Georgia																			Capt. Morse.
S. S. Grenada																			Capt. Cavarly.
S. S. Wilmington																			Capt. Connolly.
																			Capt. Austin.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. *Aneroid.

PACIFIC MAIL S. S. CO. MARINE SERIES.

Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents.

S. S Alaska																			
S. S. China																			
S. S. City of New York																			Capt. Berry.
S. S. City of Panama																			Capt. Cobb.
S. S. City of Peking, Yokohama, Japan			30.17*	766.3*	39	3.9	91	NW			2	10		N	Smooth		Overcast.		Capt. Seabury.
S. S. City of Sydney																			Lt. Z. L. Tanner, U.S.N.
S. S. City of Tokio, N. 34° 03′, E. 137° 23′			30.05	763.3	60	15.6		NNE			6	10				Smooth	NE	Overcast.	Capt. Dearborn.
S. S. Colima																			Capt. Maury.
S. S. Costa Rica																			Capt. Searle.
S. S. Dakota																			Capt. Whitebury.
S. S. Georgia																			Capt. Morse.
S. S. Grenada																			Capt. Cavarly.
S. S. Wilmington																			Capt. Connolly.
																			Capt. Austin.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. *Aneroid.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool and R. A. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.

S. S. Belgic, N. 41° 30′, E. 175° 2′			30.17*	766.3*				WNW			4		Light		WNW	Mod'ate	WNW	D. clouds.	Capt. John Metcalf.
S. S. Gaelic, Hong-Kong, China			30.20†	767.1†	63	17.2	78	E			4		Haze					Overcast.	Capt. W. H. Kidley
S. S. Oceanic, N. 30° 19′, W. 169° 48′			29.82	757.4	63	17.2	78	NW			5		3		WNW	Mod'ate	W	D. clouds.	Capt. H. Parsell.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. *Corrected for temperature and elevation; instrumental error not known. †Aneroid.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig, N. 53° 53′, E. 6° 43′			29.88	758.9	42.0	5.6	56	NNW			6		5		N	Light	N	Clear.	Capt. Undütsch.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds.

UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level,		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Lo'wr	Upper.	Lower.	Character	Direction from—		
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second	0—10.	0—10.	0—10.	From—	From—				
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, N. 51° 32′, W. 25° 18′			29.16*	740.7*	53	11.7	80	SSW			6		7		SW	Mod'ate	WSW	D. clouds	Captain Sargent.
S. S. Ohio, N. 48° 22′, W. 40° 55′			29.49	749.0	47	8.3	89	W			7		9		W	Rough	W	Misty	Captain Morrison.
S. S. Pennsylvania																			Captain Harris.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. * Aneroid

RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

S. S. Nederland																			Capt. Randle.
S. S. Switzerland																			Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

S. S. Hibernian																			
S. S. Scandinavian, N. 51° 16′, W. 41° 0′			29.29	744.0	37	2.8		W			5		9		WNW	Mod'ate	WNW	Drizzling	Capt. W. Richardson.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller N. 42° 50′, W. 70° 00′			30.10	764.5	39	3.9	91	NNE	9	4.0			0			Smooth		Clear	Capt. James Jorgensen.

NOTE.—The originals for the schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'c, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg'd.) Chief Signal Officer. U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON DECEMBER 29, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:48 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.

1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.

1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Barometer: Corrected for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours	.....	.....	30.40	772.1	60.1	15.6	58	Calm	.....	.....	0	.....	0	.....	.....	0	0	Clear	Michel.
Algiers	.....	.....	30.31	769.9	61.9	16.6	83	Calm	.....	.....	0	.....	1	.....	.....	0	0	Very fair	Peter.
La Calle	.....	.....	30.32	770.0	60.3	15.7	79	W	.....	.....	3	.....	6	.....	.....	Inap.	Inap.	Cloudy	Fleury.
Tunis	.....	.....	30.32	770.1	59.2	15.1	82	W	.....	.....	3	.....	5	.....	.....	0.020	0.5	Cloudy	Jacques.
Sfax	.....	.....	30.32	770.0	55.4	13.0	.....	WNW	.....	.....	2	.....	4	.....	.....	0	0	Cloudy	Husson.
Saida	.....	.....	30.35	770.8	60.4	15.8	61	SSE	.....	.....	2	.....	2	.....	.....	0	0	Fair	Millot.
Tebessa	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Bassières.
Geriville	.....	.....	30.30	771.8	40.6	4.8	87	NNW	.....	.....	2	.....	3	.....	.....	0	0	Pretty fair	Lemaillot.
Laghouat	.....	.....	30.35	771.0	55.4	13.0	55	NE	.....	.....	1	.....	0	.....	.....	0	0	Clear	Guyot.
Biskra	.....	.....	30.38	771.6	64.6	18.1	32	N	.....	.....	1	.....	0	.....	.....	0	0	Clear	Kuntz.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890 ? meters, or 2,919.9 ? feet; Tebessa, 1,088 ? m., or 3,569.4 ? ft.; Geriville, 1,360 ? m.; or 4,461.7 ? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Instituto at Vienna.

Agram	29.61	752.1	30.20	767.1	24.1	— 4.4	84	Calm	.....	.....	0	.....	0	.....	.....	0	0	.....	Prof. Ivan Stozir
Cracow, I. R. Observatory	29.24	742.8	30.05	763.3	29.5	— 1.4	94	W	.....	.....	3	.....	10	.....	.....	0	0	.....	Dr. Wierzbiski.
Eperies	29.10	739.0	30.04	762.9	22.5	— 5.3	88	Calm	.....	.....	0	.....	3cs	.....	.....	0	0	.....	Julius Mikolik.
Gratz	28.85	732.8	30.19	766.7	26.6	— 3.0	80	SW	.....	.....	2	.....	0	.....	.....	0	0	.....	Andreas Rospini.
Hermannstadt	28.51	724.2	30.03	762.7	25.2	— 3.8	82	NNW	.....	.....	1	.....	7	.....	.....	0	0	.....	Prof. Reissenberger.
Kremsmünster	28.68	728.4	30.09	764.3	29.1	— 1.6	84	NE	.....	.....	2	.....	3	.....	.....	0.370	9.4	.....	Prof. C. Wagner.
Lemberg	28.91	734.2	29.95	760.6	28.4	— 2.0	96	SW	.....	.....	2	.....	4	.....	.....	0	0	.....	Dr. T. Stanecki.
Pola	30.07	763.8	30.19	766.8	43.5	6.4	47	ESE	.....	.....	1	.....	9cs	.....	.....	0	0	.....	I.R.Hydrographic Office.
Szathmar	29.61	752.0	30.12	765.0	14.0	—10.0	87	S	.....	.....	3	.....	10	.....	.....	0	0	Foggy	Johann Tamas, S. J.
Szegedin	29.83	757.6	30.13	765.2	28.4	— 2.0	88	N	.....	.....	1	.....	0	.....	.....	0	0	.....	Karl Stancel.
Trieste	30.11	764.7	30.21	767.3	41.2	5.1	68	Calm	.....	.....	0	.....	8	.....	.....	0	0	.....	P. Busin.
Vienna	29.37	746.1	30.10	764.6	35.2	1.8	62	W	.....	.....	2	.....	0	.....	.....	0	0	.....	I. R. Central Met. Obs'y.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

Arlon	28.35	720.2	29.01	759.7	35.2	1.8	98	SSW	.....	.....	1	.....	10	.....	.....	0.248	6.3	Rain & fog	Prof. M. Passau.
Brussels	29.53	750.0	29.74	755.5	44.1	6.7	99	SW	.....	.....	6	.....	10	.....	SW	0.157	4.00	Light rain	Royal Observatory.
Furnes	29.67	753.6	29.69	754.2	51.3	10.7	95	SW	.....	.....	6	.....	10	.....	.....	0.094	2.4	.....	M. E. de Cae.
Maeseyck	29.61	752.1	29.74	755.4	37.0	2.8	81	S	.....	.....	2	.....	10	.....	.....	0.295	7.5	Raining	M. Pierrot.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	29.11	739.4	29.21	741.9	40.5	4.7	.....	S	12	5.4	.....	.....	3	.....	.....	Blank	Blank	Misty.	W. Boswell.
Ardrossan	29.26	743.2	29.27	743.4	49	9.4	.....	SW	.....	.....	4	.....	7	.....	.....	.....	.....	D. clouds	William McNeil.
Armagh, Observatory	.....	.....	29.33	745.0	47.2	8.4	.....	SW	15	6.7	.....	.....	9	.....	.....	.....	.....	Gloomy	S. Call, for Dr. Robinson.
Bidston (Liverpool Obs.)	.....	.....	29.45	748.0	49.5	9.7	.....	WSW	29	13.0	.....	.....	6	.....	.....	.....	.....	D. clouds	John Hartnup.
Birr Castle, (Parsonstown)	.....	.....	29.48	748.8	49.9	9.9	.....	SW	.....	.....	2	.....	7	.....	.....	.....	.....	D. clouds	J. Dreyer.
Bradford, Yorkshire	28.96	735.6	29.35	745.5	46.6	8.1	.....	NW	.....	.....	1	.....	7	.....	.....	0.28	7.1	D. clouds	J. McLandsborough.
Bridgetown, (Barbados)	29.90	759.4	29.93	760.2	82	27.8	.....	NE	.....	.....	1	.....	4	.....	.....	.....	.....	D. clouds	Pvt. G. W. Roberts, A.
Cambridge, Observatory	.....	.....	29.58	751.3	52.0	11.1	.....	SW	.....	.....	1	.....	7	.....	.....	Blank	Blank	D. clouds	H. Todd. [H. C.
Cardington	.....	.....	29.59	751.6	51.0	10.6	.....	SW	.....	.....	2	.....	3	.....	.....	.....	.....	D. clouds	John McLaren.
Chatham, School M. E	29.49	749.0	29.62	752.3	52.2	11.2	.....	SW	.....	.....	2	.....	2	.....	.....	.....	.....	Blue sky	Lt. W. G. Morris, R. E.
Dartmoor	28.24	717.3	29.71	754.6	46.4	8.0	.....	SW	.....	.....	4	.....	7	.....	.....	.....	.....	Gloomy	Alexander Watt.
Davos Platz (Switzerland)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Francis Redford, M. A.
Donaghadee	29.33	745.0	29.36	745.7	47	8.3	.....	WSW	.....	.....	4	.....	5	.....	.....	.....	.....	D. clouds	J. Mac Gowan.
Dover	29.64	752.8	29.66	753.4	49	9.4	.....	WSW	.....	.....	4	.....	8	.....	.....	.....	.....	Overcast	J. Costello.
Eccles, (near Manchester)	.....	.....	29.47	748.5	46.7	8.2	.....	SW	0.4	0.2	.....	.....	10	.....	.....	.....	.....	Gloomy	Thomas Mackereth.
Falmouth, Observatory	29.50	749.3	29.73	755.1	52.5	11.4	.....	WSW	.....	.....	4	.....	9	.....	.....	.....	.....	Foggy	The Staff.
Fort Napier, (Natal)	27.63	701.8	29.82	757 4	79.0	26.1	.....	E	.....	.....	3	.....	4	.....	.....	.....	.....	D. clouds	Pvt. G. Salmon, A. H. C
Free Town, (Sierra Leone)	.....	.....	29.90	759.4	86	30.0	.....	W	.....	.....	2	.....	0	.....	.....	.....	.....	Blue sky	
Galway, Queen's College	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	30.27	768.8	30.33	770.4	61.2	16.2	.....	NW	.....	.....	2	.....	1	.....	.....	.....	.....	Blue sky	Corpl. C. Aitken, A. H. C.
Glasgow, Observatory	29.04	737.6	29.25	742.9	45.1	7.3	.....	SSW	.....	.....	3	.....	10	.....	.....	.....	.....	Drizzling	D. G. Maclean.
Great Yarmouth	29.55	750.6	29.56	750.8	49	9.4	.....	SW	.....	.....	3	.....	5	.....	.....	.....	.....	Misty	G. T. Watson.
Greenwich, Royal Obs'y	29.45	748.0	29.62	752.3	53.5	11.9	.....	WSW	.....	.....	4	.....	10	.....	.....	.....	.....	Overcast	The Staff, for G. B. Airy.
Guernsey	29.55	750.6	29.77	756.1	54	12.2	.....	WSW	.....	.....	4	.....	8	.....	.....	.....	.....	Misty	Dr. S. E. Hoskins, F. R. S.
Helston	.....	.....	29.73	755.1	53	11.7	.....	SW	.....	.....	2	.....	4k	.....	.....	0.48	12.2	Fine	M. P. Moyle.
Holyhead	29.46	748 3	29.52	749.8	49	9.4	.....	SW	.....	.....	4	.....	3	.....	.....	.....	.....	D. clouds	John Tilston.
Jersey	29.53	750.0	29.82	757.4	52.7	11.5	.....	WSW	.....	.....	6	.....	10	.....	.....	Blank	Blank	Overcast	J. Fisher.
Kew, Observatory	.....	.....	29.63	752.6	52.7	11.5	.....	SW	12	5.4	.....	.....	10sd	.....	.....	.....	.....	Threatening	The Staff.
Kingstown	29.44	747.8	29.47	748.5	50	10.0	.....	W	.....	.....	4	.....	5	.....	.....	.....	.....	D. clouds	George Mitchell.
Leicester, Museum	.....	.....	29.53	750.0	50.8	10.4	.....	SW	.....	.....	2	.....	8	.....	.....	.....	.....	D. clouds	Wm. J. Harrison, F. G. S.
Malta, (Mediterranean)	30.15	765.8	30.22	767.6	59.2	15.1	.....	NW	.....	.....	3	.....	4	.....	.....	.....	.....	D. clouds	Sgt. Fred. Travis, A. H.
Nairn	29.07	738.4	29.16	740.7	45	7.2	.....	Calm	.....	.....	0	.....	5	.....	.....	.....	.....	½ clouded	W. D. Penny. [C.
Nassau, (Bahamas)	.....	.....	29.78	756.4	73.2	22.9	.....	SE	.....	.....	1	.....	10	.....	.....	Blank	Blank	Overcast	C. S. Duncombe.
Nottingham, Observatory	29.32	744.7	29.51	749.5	50.5	10.3	.....	SSW	.....	.....	4	.....	9k	.....	W	0.400	10.16	Overcast	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.00	736.6	29.52	749.8	48.5	9.2	.....	SW	.....	.....	3	.....	9	.....	.....	.....	.....	D. clouds	Rev. Stephen Whitty
Oxford, Radcliffe Obs'y	.....	.....	29.60	751.8	52	11.1	.....	WSW	.....	.....	2	.....	10	.....	.....	.....	.....	Gloomy	Mr. Lucas.
Plymouth	29.63	752.6	29.70	754.4	51.6	10.9	.....	W	.....	.....	2	.....	8	.....	.....	.....	.....	Misty	John Merrifield.
Roche's Point	29.53	750.0	29.58	751.3	53	11.7	.....	W	.....	.....	4	.....	8	.....	.....	.....	.....	Cloudy	W. Kennedy.
Saint Ann's Head	.....	.....	29.63	751.3	51	10.6	.....	WSW	.....	.....	5	.....	5	.....	.....	.....	.....	D. clouds	John C. Walker.
Sandwick Manse, (Orkneys)	.....	.....	29.08	738.6	40.2	4.6	.....	SSE	20	8.9	.....	.....	8	.....	.....	.....	.....	D. clouds	Rev. C. Clouston, LL. D
Scutari, Cemetery, (Turkey)	.....	.....	29.48	748.8	38.0	3.3	.....	NW	.....	.....	4	.....	10	.....	.....	.....	.....	Raining	Sergt. W. H. Lyne.
Sheffield	29.21	741.9	29.49	749.0	50.2	10.1	.....	SW	.....	.....	1	.....	8	.....	.....	Inap.	Inap.	Overcast	W. F. Cooper.
Silloth Rectory	29.33	745.0	29.36	745.7	47.4	8.6	86	SW	.....	.....	2	.....	7	.....	.....	0.110	2.79	D. clouds	Rev. F. Redford, M. A.
Stonyhurst, Observatory	.....	.....	.....	.....	44.3	6.8	.....	W	.....	.....	3	.....	10	.....	.....	.....	.....	Rain and fog	Rev. S. J. Perry.
Stornoway, Lewis C., (Hebr.)	.....	.....	28.96	735.6	45	7.2	.....	SW	.....	.....	5	.....	8	.....	.....	.....	.....	D. clouds	John Smith.
Stratfield Turgiss	29.42	747.3	29.64	752.8	52.9	11.6	.....	SW	.....	.....	1	.....	10	.....	.....	.....	.....	Raining	Rev. C. H. Griffith, F. M. S
Thurso	.....	.....	29.67	753.4	40	4.4	.....	Calm	.....	.....	0	.....	2	.....	.....	.....	.....	Blue sky	John Trotter.
Truro, Royal Institution	.....	.....	29.68	753.9	54	12.2	.....	W	.....	.....	6	.....	5	.....	.....	.....	.....	D. clouds	W. Newcombe.
Valencia, Observatory	.....	.....	29.51	749.5	52.0	11.1	.....	SW	31	13.9	.....	.....	7	.....	.....	.....	.....	D. clouds	The Staff.
SUB-SERIES.																			
Calf of Man, (Isle of Man)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Henry Mercer.
Cape Good Hope, Obs'y	29.92	760.0	29.96	761.0	81.0	27.2	46	SSE	25	11.2	.....	2	4	.....	.....	.....	.....	.....	The Staff, for E. J. Stone.
Hobart Town, (Tasmania)	.....	.....	30.06	763.5	64.5	18.1	73	SE	.....	.....	3	.....	4k	.....	.....	0	0	.....	Francis Abbott, F. R. A. S.
Leith, Restalrig Park	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Andrew Gibb.
Mauritius, Observatory	29.72	754.9	29.91	759.7	81.4	27.4	72	ENE	20.0	8.9	.....	6	6	WSW	ENE	0.17	4.3	Squally	C. Meldrum.
Melbourne, Observatory	29.85	758.2	29.94	760.5	74.0	23.3	61	S	3	1.3	.....	.....	0	.....	.....	0	0	Fine	R. L. J. Ellery.
Monach L't-house, (Hebrides)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Youngclause.
North Unst, (Shetland Is.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Robert Burnet.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

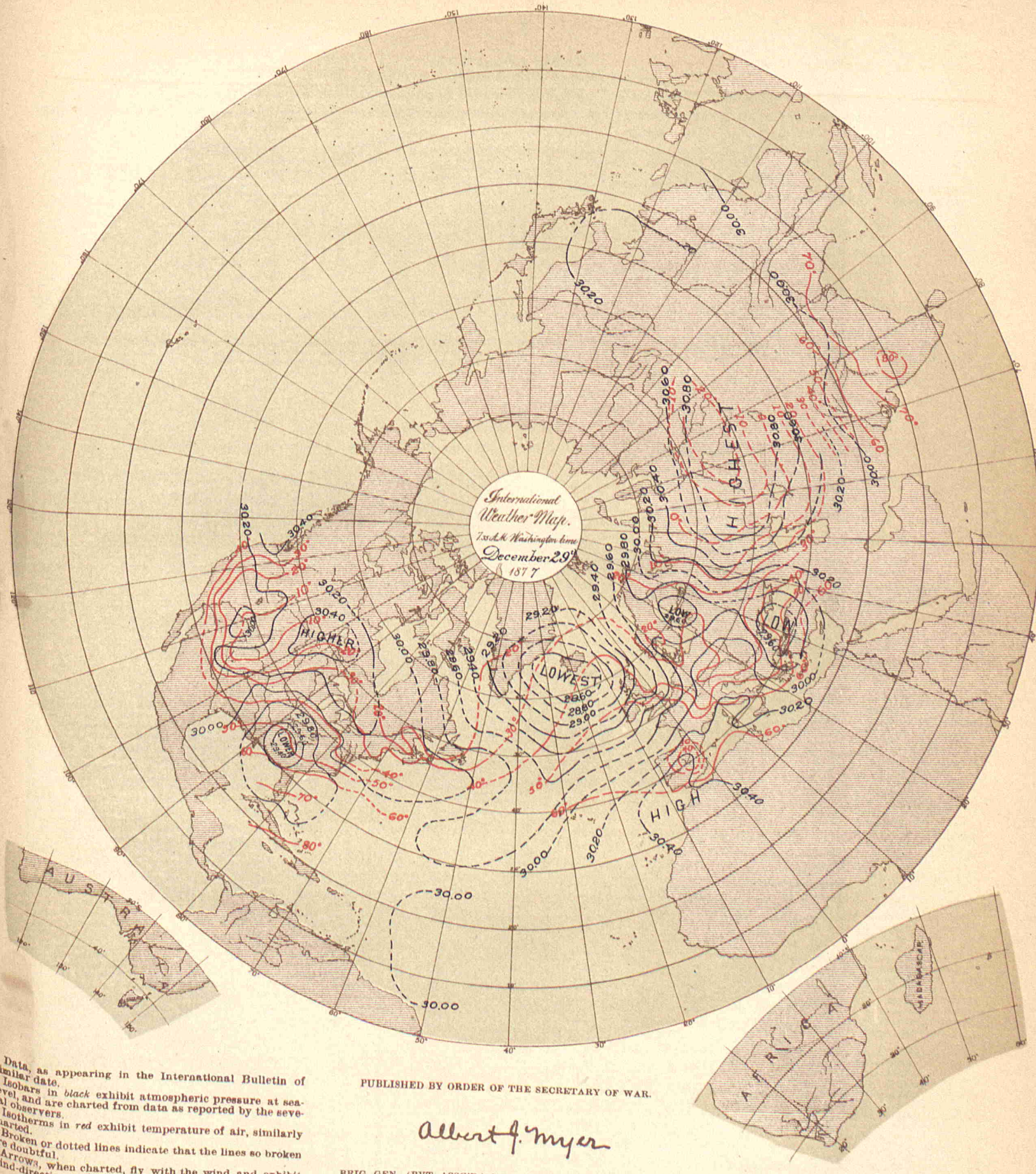
NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,490 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m.

MARINE SERIES.

VESSELS.

VESSELS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea or swell. Height scale 0—9	Sea or swell. Direction from—	Weather.	Observer.
S. S. Algeria, N. 52° 0′, W. 6° 50′	.....	.....	29.55	750.6	50	10.0	.....	WSW	.....	.....	3	.....	2	W	.....	5*	SW	D. clouds	Capt. W. Watson.
S. S. Batavia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. J. E. Monland.
Ship Camperdown	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. A. T. Miller.
Brig Catherine	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. Adam Smith.
Barque Celeste	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. D. F. McKechnie
S. S. Hibernia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. W. R. Cato
Barque Maroon	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. A. T. Brown.
Ship Mikado	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. C. C. Prehn.
Royal Alice, N. 47° 45′, W. 33° 5′	.....	.....	29.65	753.1	47	8.3	.....	NNW	.....	.....	6	.....	6	.....	.....	7	NW	Showery	Capt. E. M. Hughes.
S. S. Seine	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. H. Manning.
Barque Sorata	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. Jas. J. Price.
Schooner Traveller	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. Alex. Simpson.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in fe[illegible] weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. *Feet.



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	OBSERVER
San José	26.18	665.0			63.5	17.5	98	SE			1	2pc	1s			Blank	Blank		Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.82	757.4	29.87	758.6	28.6	— 1.9	82	Calm			0		2						
Fanöe	29.74	755.3	29.76	755.8	29.8	— 1.2	98	SE			4		10					Foggy	
Godthaab, (Greenland)	29.13	739.9	29.17	741.0	22.3	— 5.4	96	W			2		10					Snowing	
Stykkisholm, (Iceland)	28.54	725.0	28.59	726.1	33.3	0.7	100	SE			6		10					Snowing	
Thorshavn, (Farõe)	28.80	731.4	28.83	732.3	42.6	5.9	93	SSE			5		10					Raining	
Vestervig	29.56	750.7	29.72	755.0	26.6	— 3.0	91	SE			4		2						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

Alençon, Normal School	29.38	746.3	29.93	760.3	42.8	6	85	SW			3		10		SW	0.28	7.	Covered	Collignon, Director.
Amiens, Normal School																			Bouvarne, Director.
Avignon, Normal School	30.09	764.3	30.17	766.3	46.4	8	66	N			1		10			0	0	Covered	Mr. Giraud, Director
Bar-sur-Seine	29.38	746.2	29.95	760.7	50.2	10.1	92	SW			1		10					Light rain	C. Saillard.
Beaumette Obs'y (Angers)	29.76	755.9	29.92	760.0	52.9	11.6	97	SW	15.7	7.0					S	0.220	5.6		Albert Cheux.
Beauvais	29.54	750.4	29.83	757.6	52.2	11.2	91	WSW			4		10		W	0.374	9.50	Covered	Normal School.
Besançon	29.17	740.8	30.08	763.9	46.4	8	86	SW			2		10			0.31	8.	Covered	Normal School.
Bourg-en-Bresse	29.27	743.5	30.19	766.8	44.1	6.7	97	SE			2		10n		SW	0.177	4.5	Covered	Normal School.
Bourges, Normal School	29.44	747.7	29.99	761.8	50.5	10.3	97	WSW			6		5		WSW	0.587	14.9	Cloudy	A. Wagner, Director.
Brest, Naval Observatory	29.56	750.9	29.78	756.5	54.1	12.3	93	WSW			3		9		WSW	0.266	6.75	Misty	The Staff.
Carcassonne, Normal School	29.80	757.0	30.22	767.6	54.7	12.6	86	W			2		1		NW	0	0	Clear	Vateau, Director.
Caen																			Normal School.
Chartres, Normal School	29.34	745.2	29.91	759.7	50.9	10.5		SW			4		10			0.55	14.	Covered	Lequin, Director.
Châlons-sur-Marne, N. Sch'l	29.54	750.2	29.86	758.4	48.2	9.0	100	NW			2		10			0.402	10.2	Raining	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.72	729.4	30.08	764.1	52.3	11.3	65	SW			3		10		W	0.083	2.1	Covered	Alluard, Director.
Commercy, Normal School	29.02	737.2	29.93	760.3	39.9	4.4	93	SW			4		10		SW	0.177	4.5	Covered	Dr. Goulet, Director.
Commune de Gréasque*	29.03	737.4	30.17	766.4	52.0	11.1	69	W			2		8		W	0	0	¾ covered	M. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	29.76	756.0	29.98	761.5	52.9	11.6	97	W			6		10			0.118	3.0	Covered	Mouillot, Director.
Le Mans, Normal School	29.61	752.2	29.92	760.0	51.6	10.9	97	WSW			2		8		WSW	0.217	5.5	Very cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.16	740.6	30.10	764.4	44.4	6.9	97	SW			2		10		NE	0.409	10.40	Light rain	Youdez, Director.
Lorient, Naval Observatory	29.82	757.4	29.92	759.9	55.4	13.0	88	SW			4		10			0.189	4.8	Covered	T. Carré, Director.
Mâcon, Normal School	29.35	745.6	30.07	763.8	39.6	4.2	90	Calm			0		10			0	0	Covered	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	29.04	737.5	30.11	764.8	36.5	2.5	93	NW			2		10		E	0	0	Covered	Normal School.
Nismes, Normal School	29.97	761.2	30.17	766.4	51.8	11	75	N			1		2		S	0	0	Slightly cl'dy	Boyer, Director.
Orleans, Normal School	29.67	753.7	30.07	763.6	49.6	9.8	97	SW			2		8		SW	0.094	2.4	Very cloudy	Bernard, Director.
Paris, Observatory	29.62	752.4	29.86	758.5	53.4	11.9	86	SW			2		10n		WSW	0.394	10.01	Covered	National Observatory.
Privas	29.10	739.0	30.19	766.7	47.3	8.5	75	NW			2		10		NW	0.413	10.50	Covered	Normal School
Rochefort, Naval Obs'y	30.05	763.3	30.08	764.1	53.2	11.8	97	WSW			5		10		ENE	0.35	9.	Raining	Lt. Decante, Director.
Rouen, Normal School	29.72	755.0	29.81	757.2	54.5	12.5	87	SW			1		10		SW	0.520	13.2	Covered	F. Lucard, Director.
Tarbes, Normal School	29.12	739.6	30.21	767.4	54.5	12.5	83	W			2		0			0	0	Clear	T. Hugues, Director.
Villefranche	29.48	748.9	30.23	767.8	40.5	4.7	95	ESE			2		10		N	0.181	4.6	Covered	Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.84	758.0	29.87	758.7	80.6	27										0	0		L'Abbé Marchési.
Marseilles, Observatory			30.16	766.0	54.3	12.4	57	NW			1		9			0	0	Cloudy	The Staff.
Mont-Louis	24.98	634.4	30.29	769.4	39.9	4.4	42	WSW	5.6	2.50			8		W	0	0		Mr. Falguère.
Nice			30.10	764.5	52.5	11.4	58	NW			4		2?			0	0	Cloudy?	Dr. A. Niepce.
Paris, Montsouris Obs'y	29.58	751.3	29.85	758.3	53.4	11.9	88	WSW			4		10		SW	0.382	9.7	Sprinkling	Marié Davy, Director.
Perpignan			30.19	766.8	57.2	14.0	61	W	3.7	1.67			9		SW	0*	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.																			M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.59	573.8			38.3	3.5		W			3		6			0	0		Gen'l de Nansouty.
Saint Maur, (near Paris)	29.71	754.5	29.87	758 7	53.1	11.7	88	SW			3		10		WSW	0.201	5.1		E. Renou.
Toulouse, Observatory	29.49	749.1	30.22	767.6	52.5	11.4	83	W			1		3			0.016	0.40		The Staff.
Tours	29.76	755.8	29.95	760.8	52.9	11.6	95	SW			3		10		WSW	0.197	5.0		C. Marquet.
Versailles, (near Paris)			29.86	758.5	53.6	12.0	90	WSW			2		10			0.418	10.63	Rainy	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.11	764.7	30.13	765.3	43.0	6.1	93	ESE	3.4	1.5			10k			0	0		Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published. At Mirecourt and Rochefort the cloud directions are apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	29.81	757.2	29.99	761.7	32.9	0.5	90	W			1		8			0.038	0.96		Prof. Dr. Hoh.
Berlin	29.49	749.0	30.02	762.5	31.5	— 0.3	86	W			3		9			Inap.	Inap.		Prof. Arndt.
Breslau	29.51	749.5	29.95	760.8	34.7	1.5	94	SSW			1		10			0.630	16.0	Raining	Royal University Obs'y.
Carlsruhe	29.30	744.2	29.91	759.6	32.0	0.0	85	SSW			2		10	SW		0	.0		Albert Senz.
Cassel	29.58	751.4	29.74	755.5	34.7	1.5	93	SE			4		10			0.08	2.	Drizzling	Dr. H. Möhl.
Crefeld	29.76	755.9	29.80	756.8	32.0	0.0	96	W			0		10			0	0		Director Lose.
Emden	29.60	751.8	29.98	761.5	32.7	0.4		SSE			1		9			0.008	0.2	Snowing	Prof. Prestel.
Frankfort on the Main	29.057	737.9?	30.11?	764.8?	35.6	2.0	96	SSE			2		10	S		0	0		Physical Society.
Friedrichshafen	29.81	757.1	29.88	759.0	30.6	— 0.8	94	SSE			2		9ks			0.024	0.6	Light fog	M. Wilhelm.
Hamburg	29.84	757.8	29.85	758.2	30.0	— 1.1	98	SW			1		10			0	0		Captain F. Hegemann.
Kiel	29.67	753.6	29.75	755.6	30.6	— 0.8	79	NW								0.186	4.72	Snowing	Prof. G. Karsten.
Königsberg, (Prussia)			29.87	758.7	31.3	— 0.4		NW			4		0			0	0		Prof. E. Luther.
Köslin	29.60	751.9	30.04	763.0	33.1	0.6	71	SSW			2		4			0	0		H. Müller.
Leipsic, Observatory	29.66	753.4	29.71	754.6	32.7	0.4	87	W			6		9ks						Prof. Bruhns.
Memel, Naval School	29.80	756.9	29.82	757.3	30.7	— 0.7	94	W			8		9			0.091	0.8		Reinbrech von Skalweit.
Neufahrwasser	29.63	750.0	29.84	757.9	30.6	— 0.8	81	NW			3–4					0	0	Cloudy,	A. Lothes.
Posen	29.41	747.0	29.98	761.4	37.4	3.0	91	SW			3		10					Raining	Dr. Magener.
Strassburg Obs., (in Alsace)	28.98	736.0	29.95	760.8	35.6	2.0	87	W			1		10			0.480	12.2	Raining	Dr. Schur.
Stuttgart	29.27	743.5	29.79	756.7	37.2	2.9	92	W			4,		10			0.258	6.54	Dense fog	Prof. Schoder.
Treves, (Trier)	28.47	723.0	30.06	763.4	29.3	— 1.5	98	SSW	7	3			10					Light snow	Prof. Flesch.
Weissenburg, (Bavaria)	29.91	759.7	29.96	761.0	29.1	— 1.6	97	S			6		10			0	0	Covered	Dr. Von Bebber.
Wustrow, Naval School																			E. F. Schütz.
German Naval Series.																			

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet: Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4. Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines, Königsberg, Posen and Wustrow in cubic zolls. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.39	746.4	29.80	756.8	40.5	4.7		N			1.5							Cloudy	Dr. J. F. J. Schmidt.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and wind-force; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.88	758.9	29.93	760.2	66.8	19.3	49	WSW	14.0?	6.3?			3	W		0	0	D. clouds	
Deesa	29.43	747.5	29.92	760.0	67.6	19.8	54	Calm					0			0	0	Blue sky	
Bombay	29.84	757.9	29.88	758.9	75.1	23.9	68	NNW	21.0	9.4			0			0	0	Blue sky	
Poona	27.87	708.0	29.86	758.6	82.0	27.8	44	SE					2			0	0	D. clouds	
Lahore	29.15	740.4	29.94	760.5	51.2	10.7	76	Calm	3.1	1.4			0			0	0	Blue sky	
Belgaum	27.31	693.8	29.85	758.2	76.2	24.6	60	S	2.0	0.9			2			0	0	D. clouds	
Bangalore																			
Roorkee	28.96	735.7	29.90	759.6	59.4	15.2	85	NW	5.0	2.2			10			0.54	13.7		
Agra	29.33	744.9	29.92	759.9	61.8	16.6	67	W					8			0	0		
Trichinopoly																			
Nagpur	28.80	731.4	29.85	758.2	76.1	24.5	56	Calm	3.5	1.6			2			0	0	Blue sky	
Madras																			
Lucknow	29.50	749.3	29.89	759.1	64.4	18.0	82	Calm	2.1	0.9			8	N		0	0	D. clouds	
Allahabad	29.55	750.7	29.87	758.7	72.2	22.3	76	NW	1.9	0.8			8		W	0	0	D. clouds	
Patna	29.81	757.1	30.00	761.9	72.3	22.4	56	E	0.5	0.2			10	E	E	0	0	Overcast	
Hazaribagh	27.84	707.2	29.89	759.1	69.8	21.0	53	Calm	0.2	2.8			0			0	0	Blue sky	
Cuttack	29.89	759.1	29.97	761.2	76.0	24.4	72	NNW	1.0	0.4			4	S		0	0	D. clouds	
Calcutta (Alipore)	29.89	759.2	29.91	759.7	70.7	21.5	77	SW	2.0	0.9			0			0	0	Blue sky	
Goalpara	29.50	749.3	29.90	759.4	70.2	21.2	68	Calm	1.3	0.6			0			0	0	Blue sky	
Chittagong	29.86	758.4	29.95	760.8	70.3	21.3	86		2.1	0.9			8			0	0	Gloomy	
Sibsagar	29.60	751.7	29.94	760.5	65.4	18.6	84	SSE	0.7	0.3			6			0	0	D. clouds	
Rangoon																			
Jubbulpore	28.49	723.6	29.86	758.5	76.0	24.4	51	SW	4.5	2.0			8	SW	W	0	0	D. clouds	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instru'tal error and temperature. Inches.	Barometer. Corrected for instru'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—13.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	22.08	560.8	30.037	762.77	26.1	— 3.3	100	SE	.....	.....	6	.....	10	.....	.....	2.362*	60.0*	.....	Ab. Dem. Mongini.
Stelvio	22.04	559.9	30.007	761.97	24.3	— 4.3	.....	SSE	.....	.....	1	.....	10	.....	.....	0.094	2.4	.....	Signora Ernesta Manfredi.
Udine	29.74	755.3	30.17	766.2	39.4	4.1	86	SE	0.7	0.3	.....	.....	7	.....	.....	0	0	.....	Prof. Giovanni Clodig.
Padua	30.04	763.0	30.15	765.9	40.6	4.7	86	NE	3.1	1.4	.....	.....	4	.....	.....	0	0	.....	Prof. Dott. Lorenzoni.
Vicenza	29.97	761.2	30.17	766.3	41.7	5.4	83	NE	0	0	.....	.....	8	.....	.....	0	0	.....	Conte Alm. Da Schio.
Verona	29.91	759.8	30.15	765.7	44.2	6.8	51	SW	.....	.....	1	.....	0	.....	.....	0	0	.....	Dott. B. Bertoncelli.
Bergamo	28.81	731.8	30.19	766.7	38.1	3.4	44	SW	.....	.....	1	.....	9	.....	.....	0	0	.....	Prof. Trionfini Carlo.
Domodossola	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Giuseppe Calza.
Milan	29.65	753.1	30.20	767.1	37.8	3.2	.....	ENE	.....	.....	1	.....	8	NNE	.....	0	0	.....	Ab. Gio. Capelli.
Pavia	29.82	757.4	30.18	766.6	35.6	2.0	64	NW	.....	.....	1	.....	9	.....	.....	0	0	.....	Prof. Gio. Cantoni
Moncalieri	29.25	742.9	30.19	766.9	39.2	4.0	49	ENE	0	0	.....	.....	3	.....	.....	0	0	.....	Prof. P. F. Denza.
Mondovi	28.18	715.8	30.17	766.2	36.5	2.5	47	NW	.....	.....	2	.....	2	WNW	.....	0	0	.....	Prof. D. C. Bruno.
Porto Maurizio	29.92	759.9	30.15	765.7	52.2	11.2	37	E	.....	.....	4	.....	4	.....	.....	0	0	.....	Prof. L. Vassallo.
Genoa	29.98	761.5	30.15	765.9	50.7	10.4	35	SE	6.3	2.8	.....	.....	4	SE	.....	0	0	.....	Prof. G. M. Garibaldi
Piacenza	29.92	760.0	30.19	766.8	37.8	3.2	48	N	0	0	.....	.....	7	N	.....	0	0	.....	Dott. G. Manzi.
Parma	29.85	758.3	30.19	766.8	40.5	4.7	53	NW	.....	.....	2	.....	2	.....	.....	0	0	.....	Prof. P. Pigorini.
Florence	29.95	760.7	30.22	767.5	41.4	5.2	46	N	.....	.....	2	.....	9	.....	.....	0	0	.....	Cav. F. Meucci.
Leghorn	30.00	762.2	30.17	766.4	42.4	5.8	62	NE	6.9	3.1	.....	.....	9	.....	.....	0	0	.....	Prof. P. Monte.
Siena	28.94	735.0	30.18	766.6	40.3	4.6	50	W	3.8	1.7	.....	.....	6	W	.....	0	0	.....	Prof. L. Toscani.
Urbino	28.60	726.3	30.21	767.3	39.0	3.9	59	SW	.....	.....	2	.....	2	.....	.....	0	0	.....	Prof. P. Serpieri.
Pesaro	30.14	765.6	30.19	766.9	43.5	6.4	41	W	0	0	.....	.....	5	.....	.....	0	0	.....	Prof. Luigi Guidi.
Ancona	30.08	764.1	30.19	766.9	45.3	7.4	47	Calm	.....	.....	0	.....	2	.....	.....	0.028	0.7	.....	Prof. F. DeBosis.
Grosseto	30.08	764.1	30.20	767.0	46.8	8.2	32	SSE	.....	.....	2	.....	6	SE	.....	0	0	.....	Avv. P. Ponticelli.
Rome	30.05	763.3	30.23	767.9	45.0	7.2	39	NNE	1.8	0.8	.....	.....	1	.....	.....	0	0	.....	Prof. P. A. Secchi.
Naples, O. U	30.04	763.0	30.24	768.2	50.0	10.0	19	N	.....	.....	2	.....	2	.....	.....	0	0	.....	Prof. L. Palmieri.
Lecce	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. C. De Giorgi.
Cosenza	29.30	744.3	30.21	767.4	45.0	7.2	63	SE	3.1	1.4	.....	.....	0	.....	.....	0	0	.....	Prof. F. D. Conti.
Cagliari	29.90	759.5	30.10	764.5	58.5	14.7	65	NW	.....	.....	4	.....	1	NW	.....	0	0	.....	Prof. A. Pacinotti.
Riposto, (Sicily)	.....	.....	.....	.....	55.8	13.2	22	NE	.....	.....	6	.....	4	.....	.....	0	0	.....	Prof. F. Cafiero.
Palermo	29.93	760.1	30.19	766.7	53.8	12.1	40	N	6.3	2.8	.....	.....	10	.....	.....	0.004	0.1	.....	Prof. G. Cacciatore.
Caltanissetta	28.20	716.2	30.19	766.7	46.2	7.9	39	NW	.....	.....	6	.....	0	.....	.....	0	0	.....	Prof. A. Pagani.
Syracuse	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.70	754.4	30.26	768.5	47.7	8.7	29	NE	0	0	.....	.....	0	.....	.....	0	0	.....	Prof. F. Brioschi.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals give the wind-force on the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,543.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Siena, 348.5 m., or 1,143.3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft. * Unmelted snow.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Tokei (Yeddo)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	The Observatory.
Tokei (Yeddo) University	30.00	762.0	30.10	764.5	36	2.2	85	NW	4.7	2.1	.....	.....	.....	.....	.....	0.7	17.8	Clear	Prof. P. V. Veeder.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Aguascalientes	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	I. N. Marin, M. D.
Córdoba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	C. Peña, M. D.
Cuernavaca	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	L. Castillo, A. E.
Guadalajara	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. L. Perez.
Guanajuato	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. V. Fernandez.
Leon	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. M. Leal.
Mexico	23.02	584.7	30.11	764.8	44.6	7.0	53	SW	1.6	0.69	.....	0	0	.....	.....	0	0	Very clear	Central Observatory.
Orizaba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	N. N.
Orizaba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	I. Orozco, M. D.
Pabellon, (Aguascalts)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. V. de Leon, M. E.
Puebla	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. B. Gonzalez.
Toluca	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. C. Velazquez.
Tlacotalpam	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. F. R. Bayly.
San Luis Potosi	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	G. Barroeta, M. D.
Vera-Cruz	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. J. Rossell.
Zacatecas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. A. Bonilla, M. E.
Puebla, (Catholic Institute)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	P. Spina. [M. M. D. D.
Morelia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Tena, F. L. Páramo

Note.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,290 m., or 7,512.9 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m,, or 8,611.8 ft.; San Luis Potosí, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	29.68	753.8	29.68	753.8	45.3	7.4	.....	SSW	.....	.....	4	.....	.....	.....	.....	0.169	4.3	.....	
Groningen	29.65	753.0	29.70	754.4	32.9	0.5	.....	S	.....	.....	2	.....	.....	.....	.....	0	0	.....	
Helder	29.60	751.8	29.60	751.8	35.1	1.7	.....	SSE	.....	.....	4	.....	.....	.....	.....	0.201	5.1	.....	
Hellevoetsluis	.....	.....	29.67	753.7	41.7	5.4	100	SSW	.....	.....	3	.....	.....	.....	.....	.....	.....	.....	
Utrecht	29.63	752.7	29.68	753.9	35.8	2.1	94	SSE	.....	.....	2	.....	10	.....	.....	0.311	7.9	Dull	H. v d Brink.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	29.53	750.0	29.58	751.4	33.1	0.6	47	Calm	0	0			3			0.008	0.2		
Brönö	29.66	753.4	29.70	754.4	26.6	— 3.0	57	NE	7	3			0			0	0		
Christiania	29.65	753.1	29.81	757.2	14.4	— 9.8	87	NE	2	1			10			0	0		
Tromsö	29.59	751.6	29.63	752.7	25.9	— 3.4	65	SSW	13	6			5			0	0		

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	29.90	759.5	30.10	764.4	62.2	16.8	83	SSW	3.8	1.7			6			0	0		Dr. J. A. Sampaio.
Campo Major	29.37	746.1	30.42	772.6	50.9	10.5	82	ESE	2.5	1.1			9		WNW	0	0		Dr. A. M. R. dos Santos
Funchal, (Madeira)	30.30	769.7	30.37	771.5	62.8	17.1	53	SE	2.5	1.1			10			0	0		Capt. D. A. de Cunha.
Lisbon, Observatory	30.04	763.0	30.40	772.2	53.4	11.9	95	S	2.5	1.1			10			0	0		The Staff.
Ponta Delgada, (Azores)	30.06	763.4	30.13	765.2	64.4	18.0	88	S	5.6	2.5			3			0.472	12.0		

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

Naval Series. Vessels.	Sea or swell. Height scale 0-9	Sea or swell. Direction from—		
S. Bartholomew Dias				R, A. T. Pinha, Com'd't.
S. S. India				A. D. Pedroso, Com'd't.
S.S. Mindello				J. F. R. R. Bastos, Com'd't.
S. S. Sado				A. N. P. Sampaio, Com'd't.
S. S. Sá da Bandeira				F. Texeira da Silva, Com'd't.
S. S. Tejo				F. J. Ferreina, dos Amas, Com'

NOTE.—The originals, except for S. S. Tejo, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.49	749.1	29.94	760.4	26.6	— 3.0	94	W	13	6			10n					Light snow..	Astronomical Obs.
Wilna	29.33	744.9	29.76	756.0	30.4	— 0.9	94	Calm	0	0			10					Snowing	Astronomical Obs.
Dorpat	29.32	744.7	29.58	751.2	24.8	— 4.0	94	SSW	7	3			10n						Prof. Dr. Weihrauch.
St. Petersburg	29.67	753.5	29.68	753.9	24.3	— 4.3	93	SE	25	11			10n					Light snow..	Central Physical Obs.
Kuopio	29.35	745.5	29.69	754.1	19.8	— 6.8	100	ESE	22	10			10					Snowing	Ch. Forsten.
Kieff	29.14	740.1	29.81	757.1	25.9	— 3.4	95	N	9	4			10ks;n						Physical Cabinet.
Nikolaiev	29.58	751.3	29.65	753.1	36.5	2.5	98	ESE	22	10			10n					Raining	Kurdakof.
Kertch	29.76	755.9	29.78	756.4	44.6	7.0	88	E	9	4			4					Light clouds	Lagorio.
Moscow	29.69	754.2	30.30	769.6	9.3	—12.6	88	S	9	4			10s					Light snow..	Meteorological Obs.
Lugan	29.83	757.6	30.05	763.2	21.2	— 6.0	79	E	34	15			10						Meteorological Obs.
Archangel	30.19	766.9	30.21	767.4	5.0	—15.0	100	SE	22	10			10						Ogorodnikof.
Tiflis	28.77	730.8	30.26	768.5	35.4	1.9	84	Calm	0	0			10						Physical Observatory
Astrakhan	30.60	777.2	30.52	775.1	12.2	—11.0	72	E	11	5			0						Sebastianof.
Kasan	30.50	774.7	30.81	782.6	0.0	—17.8	83	SSE	2	1			8						Physical Cabinet.
Orenburg																			Tschernischei.
Ekaterinburg	29.85	758.1	30.03	785.5	— 1.3	—18.5	74	W	11	5			0						Meteorological Obs.
Nukuss	30.28	769.1	30.55	775.9	— 0.8	—18.2	66	NE	13	6			1cs						
Kasaly																			Bobrof.
Tashkend	28.73	729.7	30.66	778.8	3.7	—15.7	90	Calm	0	0			0						Michelson.
Barnaul	30.23	767.7	30.86	783.8	—27.8	—33.2	80	Calm	0	0			0						Meteorological Obs.
Yeniseisk	30.20	767.1	30.57	776.4	— 4.7	—20.4	90	SSW	2	1			10					Snowing	Marks.
Irkutsk																			Usolzef.
Oorga																			Mossin.
Krotkowo*	30.24	768.1	30.76	781.4	4.5	—15.3	64	SE	7	3			1s						Cand. Fatjanow.
Peking, (China)	30.11	764.7	30.25	768.3	21.4	— 5.9	74	Calm	0	0			3ks						Physical Observatory
Nertchinsk																			Meteorological Obs.
Vladivostock	30.16	766.1	30.20	767.1	9.9	—12.3	66	NW	4	2			0						
Nikolaievsk, on the Amoor					— 4.9	—20.5	73	W	9	4			0						

NOTE.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall; for Krotkowo, the barometer reduced to freezing but not to sea level. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft. * N. 53° 47′, E. 48° 34′.

SPANISH SERIES.

Furnished by the cooperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y																			Antonio Rave, Director.
Bilbao, Met. Obs'y																			Prof. Manuel de Naveran
Burgos, Met. Obs'y																			Domingo Martin y Perez.
Madrid, Royal Observatory	28.11	713.9	30.43	773.0	39.0	3.9	94	SW	3.0	1.33		0	10			0.024	0.6	Misty	The Staff.
Murcia, Met. Obs'y																			Olayo Diaz, Director.
Santiago, Met. Obs'y																			R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I	29.73	755.2	29.80	756.8	69.2	20.7	92	SW	5.1	2.3		0	1ks			0.717	18.2	Clear	Benito Vines, S. J.
San Fernando, Naval Obs'y	30.30	769.7	30.40	772.3	53.4	11.9	77	NW	4.2	1.9		4	4	NW	NW	0	0		Capt. C. Pujazon, R. N., Dir.
San Juan de PortoRico, W.I.			29.87	758.7	78.1	25.6	90	SE	0	0		3cs	0	Calm		0	0	Clear	Leonardo de Tejeda, Chief of Engineers.

NOTE.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. m. instead of 8:19 a m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the cöoperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Low'r 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.80	756.9	29.84	757.9	19.8	— 6.8	.....	E	.....	.....	4	.....	10	.....	.....	0.079	2.0	.....	
Umea	29.63	752.5	29.68	753.8	24.4	— 4.2	100	N	.....	.....	2	.....	10	.....	.....	0.319	8.1	Snowing	
Hernosand	29.62	752.4	29.67	753.7	21.7	— 5.7	87	NNW	.....	.....	4	.....	8	.....	.....	0.161	4.1	.....	
Stockholm	29.41	747.1	29.59	751.6	21.6	— 5.8	80	N	.....	.....	2	.....	8	.....	.....	0.287	7.3	.....	
Wisby	29.58	751.4	29.64	752.9	27.3	— 2.6	92	NW	.....	.....	6	.....	10	.....	.....	0.441	11.2	.....	
Sub-Series.																			
Upsala	29.55	750.6	29.63	752.5	21.0	— 6.1	92	NW	11.9	5.3	.....	.....	8	.....	.....	0.004	0.10	.....	Dr. Hildebrandsson.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the cooperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.70	729.0	30.18	766.6	37.0	2.8	95	WNW	.....	.....	1	.....	10	.....	.....	0.433	11.0	Raining	The Observatory.
Zurich	28.42	721.9	30.13	765.3	33.4	0.8	98	E	.....	.....	1	.....	10	.....	.....	0.787	20.0	Raining	The Observatory.

Note.—For Geneva the corresponding departures from the normal values are: Barometer, +2.3 mm; Thermometer, +1.3 cent.; Relative Humidity, +14 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	29.50	749.3	37.8	3.2	93	NW	34	15.0	.....	.....	10	.....	N	0.488	12.4	.....	The Observatory.
Fao, (Persian Gulf)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salonica	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	B. Stefanidès.
Valona	.....	.....	29.99	761.7	40.3	4.6	.....	N	.....	.....	3	.....	10	.....	.....	1.02	26.	Covered	A. Bertrand.
Varna	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Imperial Observatory.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.93	760.2	30.10	764.4	66.4	19.1	59	SW	.....	.....	3	.....	5ck	.....	.....	0.02	0.5	D. clouds	Prof. C. V. A. Van Dyck

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	29.93	760.2	30.00	762.0	17.8	— 7.9	90	Calm	0	0	.....	0	.....	.....	.....	.....	.....	.....	Hon. J. Ferguson.
Brockville, Ontario	29.91	759.7	30.24	768.1	24	— 4.4	.....	Calm	0	0	.....	.....	10s	.....	N	0	0	Cloudy	W. R. Bigg.
*Chatham, N. B	29.93	760.2	30.00	762.0	22	— 5.6	95	Calm	0	0	.....	5ck	5ks	SW	SW	0	0	Cloudy	G. A. Blair.
Charlottetown, P. E. Island	29.96	761.0	30.00	762.0	27	— 2.8	96	Calm	0	0	.....	.....	10ks	.....	Calm	0	0	Cloudy	H. J. Cundall, C. E.
Cornwall, Ontario	29.97	761.2	30.17	766.3	24.7	— 4.1	97	E	.....	.....	1	.....	10s	.....	.....	0	0	Dull	James Smith, M. A.
Dalhousie, N. B	30.01	762.2	30.04	763 0	22.5	— 5.3	93	SW	.....	.....	1	.....	.....	.....	.....	0	0	Gloomy	H. A. Johnson.
Esquimault, B. C	30.28	769.1	30.33	770.4	35.1	1.7	81	N	.....	.....	.....	0	0	.....	.....	0	0	Clear	W. H. Bevis.
*Father Point, Quebec	30.09	764.3	30.11	764.8	23	— 5.0	86	NW	16	7.2	.....	5ck	5s	NW	NW	0	0	Cloudy	J. McWilliams.
Fredericton, N. B	30.01	762.2	30.08	764.0	10.1	—12.2	100	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	Prof. Harrison.
*Fort Garry, Manitoba	29.56	750.8	30.45	773.4	20	— 6.7	93	N	10	4.5	.....	5k	5n	N	N	0	0	Cloudy	James Stewart.
Goderich, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	H. J. Strang, M. A.
Granton, Ontario	29.00	736.6	30.16	766.1	28.2	— 2.1	96	NE	.....	.....	1	0	0	.....	.....	0	0	Clear	James Grant.
*Halifax, N. S	29.88	758.9	30.03	762.7	20	— 6.7	78	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	F. Allison, M. A.
Hamilton, Ontario	29.82	757.4	30.20	767.1	33.7	0.9	83	NE	.....	.....	2	6cs	.....	W	.....	0	0	Cloudy	Geo. Dickson, M. A
Heart's Content, N. F	29.84	757.9	29.87	758.7	20	— 6.7	100	Calm	.....	.....	0	0	0	.....	.....	0	0	Fine	E. Weedon.
*Kingston, Ontario	29.89	759.2	30.24	768.1	26	— 3.3	92	NE	3	1.3	.....	.....	10s	.....	Calm	0	0	Cloudy	S. Woods, M. A.
Little Glace Bay, N. S	29.94	760.5	29.98	761.5	27.0	— 2.8	.....	W	6	2.7	.....	5ck	.....	W	.....	0	0	Fair	C. H. Rigby.
*Montreal, Quebec	29.98	761.5	30.19	766.8	22	— 5.6	96	NE	11	4.9	.....	2cs	2s	.....	.....	0	0	Clear	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.51	749.5	30.25	768.3	29	— 1.7	78	N	11	4.9	.....	8k	2ks	NE	NE	0	0	Cloudy	Rev. R. Mosley.
Peterboro, Ontario	29.45	748.0	30.25	768.3	27.4	— 2.6	75	N	.....	.....	1	.....	10ks	.....	.....	0	0	Dull	J. F. Jeffers, B. A.
Port Dover, Ontario	29.43	747.5	30.15	765.8	33	0.6	100	NE	8	3.6	.....	5k	0	NE	.....	0	0	Fair	H. Morgan.
Port Hastings, N. S	29.95	760.7	30.00	762.0	32.6	0.3	.....	Calm	0	0	.....	.....	.....	.....	.....	0	0	Fine	Peter Grant.
Port Stanley, Ontario	29.47	748.5	30.15	765.8	32	0.0	89	NE	3	1.3	.....	.....	10ks	.....	E	0	0	Cloudy	M. Payne.
*Quebec, Quebec	29.82	757.4	30.16	766.1	18	— 7.8	100	Calm	0	0	.....	.....	Fog	.....	.....	0	0	Dense fog	Capt. Ashe, R. N.
*Rockliffe, Ontario	29.77	756.1	30.25	768.3	28	— 2.2	92	NW	6	2.7	.....	.....	10s	.....	NW	0	0	Cloudy	W. H. McIntyre.
St. John, N. B	29.89	759.2	30.06	763.5	21	— 6.1	85	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	G. Murdock, C. E.
*Saugeen, Ontario	29.46	748.3	30.19	766.8	33	0.6	89	Calm	0	0	.....	.....	10n	.....	.....	0	0	Cloudy	K. Stewart.
Stayner, Ontario	29.42	747.3	30.25	768.3	26	— 3.3	98	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	R. J. Cole.
Stratford, Ontario	28.89	733 8	30.24	768.1	29.0	— 1.7	93	Calm	0	0	.....	3cs	.....	.....	.....	0	0	Fine	C. J. MacGregor, M. A.
*Sydney, C. B	29.98	761.5	30.01	762.2	19	— 7.2	94	SW	2	0.9	.....	0	0	.....	.....	0	0	Clear	T. C. Hill.
*Toronto, Ontario	29.81	757.2	30.21	767.3	30	— 1.1	85	NE	6	2.7	.....	2cs	2s	SW	.....	0	0	Fair	Magnetic Observatory.
Windsor, N. S	29.90	759.4	30.00	762.0	28.0	— 2.2	88	SW	0	0	.....	0	0	.....	.....	0	0	Clear	Prof. John E. Oram.
Woodstock, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Montgomery.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	24.0	— 4.4	.....	SW	.....	.....	.....	Sm'e	Sm'e	.....	.....	0	0	Cloudy	John Delany

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

1877.—December 29.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rainfall or melted snow in the past 24 hours. Inches.	Rainfall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.93	760.2	30.17	766.3	24	— 4.4	87	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Alpena, Michigan	29.55	750.6	30.22	767.6	33	0.6	89	NE	6	2.7	.....	.....	10s	.....	NE	0	0	Cloudy	
Atlantic City, New Jersey	30.07	763.8	30.09	764.3	34	1.1	90	N	4	1.8	.....	2cs	Fog	SW	Calm	0	0	Clear	
Augusta, Georgia	29.49	749.0	29.67	753.6	48	8.9	92	NE	13	5.8	.....	.....	10n	.....	NE	0.10	2.5	Heavy rain	
Baltimore, Maryland	30.04	763.0	30.09	764.3	38	3.3	71	NE	3	1.3	.....	2ck	2s; sm	Calm	Calm	0	0	Fair	
Barnegat, New Jersey	30.07	763.8	30.09	764.3	35	1.7	95	N	8	3.6	.....	2c	Fog	Calm	Calm	0	0	Fair	
Bismarck, Dakota	28.52	724.4	30.38	771.6	18	— 7.8	84	NW	4	1.8	.....	.....	10n	.....	Calm	0.01	0.3	Light snow	
Boise City, Idaho	27.48	698.0	30.36	771.1	15	— 9.4	73	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Boston, Massachusetts	29.94	760.6	30.11	764.8	27	— 2.8	88	NW	7	3.1	.....	0	Sm'e	.....	.....	0	0	Clear	
Brackettville, Texas	28.99	736.3	30.07	763.8	35	1.7	79	N	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Breckenridge, Minnesota	29.25	742.9	30.32	770.1	22	— 5.6	93	N	14	6.3	.....	.....	10s	.....	N	0.03	0.8	Cloudy	
Brownsville, Texas	30.04	763.0	30.11	764.8	46	7.8	76	N	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Buffalo, New York	29.39	746.5	30.12	765.0	31.5	— 0.3	84	NE	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Burkes, Arizona	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Burlington, Vermont	29.90	759.4	30.17	766.3	26	— 3.3	77	Calm	0	0	.....	0	Sm'e	.....	NE	0	0	Clear	
Cairo, Illinois	29.32	744.7	29.71	754.6	47	8.3	92	N	13	5.8	.....	.....	10n	.....	N	0.36	9.1	Light rain	
Camp Grant, Arizona	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Camp Verde, Arizona	26.85	682.0	30.34	770.6	26	— 3.3	88	NW	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Campo, California	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Cape Hatteras, N. Carolina	29 88	758.9	29.89	759.2	54	12.2	79	NE	26	11.6	.....	.....	10s	.....	NE	0	0	Cloudy	
Cape Henry, Virginia	29.94	760.5	29.97	761.2	47	8.3	92	NE	20	8.9	.....	.....	10s	.....	Calm	0	0	Cloudy	
Cape Lookout, N. Carolina	29.82	757.4	29.83	757.7	56	13.3	87	NE	38	17.0	.....	.....	10s	.....	NE	0	0	Cloudy	
Cape May, New Jersey	30.04	763.0	30.07	763.8	34	1.1	79	NE	10	4.5	.....	5c	0	SW	.....	0	0	Fair	
Charleston, South Carolina	29.64	752.8	29.70	754.4	56	13.3	93	NE	8	3.6	.....	.....	10n	.....	E	0.04	1.0	Light rain	
Cheyenne, Wyoming	24.10	612.1	30.04	763.0	4	—15.6	48	N	11	4.9	.....	0	0	.....	.....	0.04	1.0	Clear	
Chicago, Illinois	29.30	744.2	30.00	762.0	39	3.9	82	NE	22	9.8	.....	.....	10s	.....	NE	0.02	0.5	Cloudy	
Cincinnati Ohio	29.18	741.2	29.82	757.4	48	8.9	81	NE	6	2.7	.....	.....	10ks	.....	NE	0	0	Threatening	
Clevelana, Ohio	29.33	745.0	30.07	763.8	39	3.9	91	NE	9	4.0	.....	.....	10s	.....	NE	0.02	0.5	Cloudy	
Concho, Texas	28.20	716.3	29.98	761.5	31	— 0.6	68	NW	24	10.7	.....	8cs	0	NW	.....	0.02	0.5	Cloudy	
Corsicana, Texas	29.50	749.3	29.96	761.5	39	3.9	81	NW	16	7.2	.....	.....	10s	.....	NW	0.35	8.9	Cloudy	
Davenport, Iowa	29.38	746.2	30.03	762.7	38	3.3	91	NE	12	5.4	.....	.....	10s	.....	Calm	Inap.	Inap.	Cloudy	
Deadwood, Dakota	25.61	650.5	.....	.....	15	— 9.4	83	NE	2	0.9	.....	.....	10n	.....	.....	0.08	2.0	Light snow	
Denison, Texas	29.14	740.1	29.97	761.2	35	1.7	90	N	18	8.0	.....	.....	10n	.....	N	1.13	28.7	Light rain	
Denver, Colorado	24.94	633.5	30.16	766.1	10	—12.2	79	SW	2	0.9	.....	0	0	.....	.....	0.02	0.5	Clear	
Detroit, Michigan	29.40	746.7	30.09	764.3	34	1.1	90	NE	8	3.6	.....	.....	10s	.....	Calm	0	0	Cloudy	
Dodge City, Kansas	27.53	699.2	30.01	762.2	18	— 7.8	81	N	26	11.6	.....	.....	10s	.....	N	0	0	Cloudy	
Dubuque, Iowa	29.36	745.7	30.08	764.0	36	2.2	90	NE	5	2.2	.....	.....	10n	.....	Calm	0.03	0.8	Light rain	
Duluth, Minnesota	29.50	749.3	30.20	767.1	37	2.8	90	NE	20	8.9	.....	.....	10n	.....	NE	0.13	3.3	Sleeting	
Eagle Pass, Texas	29.37	746.0	30.15	765.8	40	4.4	56	N	16	7.2	.....	0	0	.....	.....	0.09	2.3	Clear	
Eastport, Maine	29.99	761.7	30.06	763.5	28	— 2.2	88	NW	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Erie, Pennsylvania	29.33	745.0	30.06	763.5	39	3.9	91	NE	6	2.7	.....	.....	10s	.....	.....	0	0	Cloudy	
Escanaba, Michigan	29.59	751.6	30.27	768.8	33	0.6	80	NE	10	4.5	.....	.....	10s	.....	NE	0.02	0.5	Cloudy	
Florence, Arizona	28.45	722.6	30.05	763.3	38	3.3	54	N	.....	.....	.....	.....	10s	.....	W	0	0	Cloudy	
Fort Bayard, New Mexico	24.06	611.1	30.06	763.5	22	— 5.6	85	Calm	0	0	.....	.....	10s	.....	Calm	0.10	2.5	Cloudy	
Fort Craig, New Mexico	25.62	650.7	.....	.....	12	—11.1	61	NW	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Fort Gibson, Indian Ter	29.33	745.0	29.89	759.2	33	0.6	89	N	16	7.2	.....	.....	10n	.....	Calm	0.51	13.0	Light snow	
Fort Griffin, Texas	28.84	732.5	30.17	766.3	33	0.6	69	NW	16	7.2	.....	.....	10s	.....	Calm	0	0	Cloudy	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	28.83	732.3	29.99	761.7	30	— 1.1	89	N	14	6.3	.....	.....	10n	.....	N	0.21	5.3	Light snow	
Galveston, Texas	29.89	759.2	29.93	760.2	44	6.7	75	NW	30	13.4	.....	.....	10s	.....	NW	0.27	6.9	Cloudy	
Grand Haven, Michigan	29.44	747.8	30.12	765.0	36	2.2	80	E	13	5.8	.....	.....	10s	.....	Calm	0	0	Cloudy	
Indianapolis, Indiana	29.07	738.4	29.85	758.2	42	5.6	91	NE	14	6.3	.....	.....	10s	.....	NE	0	0	Cloudy	
Indianola, Texas	30.06	763.5	30.08	764.0	45	7.2	68	N	32	14.3	.....	5k	0	N	.....	0	0	Fair	
Jacksboro, Texas	28.93	734.8	30.12	765.0	33	0.6	79	NW	21	9.4	.....	.....	10n	.....	.....	0.05	1.3	Light rain	
Jacksonville, Florida	29.59	751.6	29.62	752.3	64	17.8	83	SE	10	4.5	.....	.....	10s	.....	SE	0.06	1.5	Threatening	
Keokuk, Iowa	29.28	743.7	29.91	759.7	38	3.3	91	N	10	4.5	.....	.....	10n	.....	Calm	0.16	4.1	Light rain	
Key West, Florida	29.70	754.4	29.74	755.4	74.0	23.3	83	W	20	8.9	.....	2k	5ks	W	W	0.64	16.3	Fair	
Kittyhawk, North Carolina	29.91	759.7	29.94	760.5	51	10.6	86	NE	16	7.2	.....	10cs	0	E	.....	0	0	Cloudy	
Knoxville, Tennessee	28.63	727.2	29.62	752.3	46	7.8	69	NE	30	13.4	.....	.....	10ks	.....	SE	0.05	1.3	Cloudy	
La Crosse, Wisconsin	29.38	746.2	30.14	765.5	37	2.8	80	NE	6	2.7	.....	.....	10s	.....	NE	0	0	Cloudy	
La Mesilla, New Mexico	26.16	664.4	30.31	769.9	27	— 2.8	77	NE	2	0.9	.....	.....	10s	.....	Calm	0.09	2.3	Cloudy	
Laredo, Texas	.....	.....	.....	.....	41	5.0	82	N	6	2.7	.....	0	0	.....	.....	0.01	0.3	Clear	
Leavenworth, Kansas	29.14	740.1	30.01	762.2	36	2.2	79	N	16	7.2	.....	.....	10ks	.....	N	0	0	Cloudy	
Los Angeles, California	29.68	753.9	30.02	762.5	49	9.4	78	N	10	4.5	.....	0	8s	.....	Calm	0	0	Cloudy	
Louisville, Kentucky	29.17	740.9	29.72	754.9	48	8.9	85	NE	16	7.2	.....	.....	10s	.....	NE	0	0	Cloudy	
Lynchburg, Virginia	29.30	744.2	30.00	762.0	42	5.6	66	NE	2	0.9	.....	.....	10s	.....	W	0	0	Cloudy	
Maricopa Wells, Arizona	.....	.....	.....	.....	30	— 1.1	53	E	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Marquette, Michigan	29.50	749.3	30.23	767.8	38	3.3	80	NE	8	3.6	.....	.....	10s	.....	Calm	0	0	Cloudy	
Mason, Texas	28.43	722.1	30.26	768.6	34	1.1	70	NW	20	8.9	.....	.....	10s	.....	.....	0	0	Cloudy	
Memphis, Tennessee	29.30	744.2	29.62	752.3	48	8.9	92	N	10	4.5	.....	.....	10n	.....	N	0.75	19.1	Light rain	
Milwaukee, Wisconsin	29.38	746.2	30.09	764.3	37	2.8	90	NE	16	7.2	.....	.....	10s	.....	.....	0.02	0.5	Cloudy	
Mobile, Alabama	29.55	750.6	29.59	751.6	52	11.1	79	W	16	7.2	.....	.....	10s	.....	W	1.66	42.2	Cloudy	
Montgomery, Alabama	29.14	740.1	29.36	745.7	56	13.3	93	S	12	5.4	.....	.....	10n	.....	S	0.67	17.0	Light rain	
Morgantown, West Virginia	28.89	733.8	29.96	761.0	41	5.0	91	NE	3	1.3	.....	.....	10s	.....	NE	0	0	Foggy	
Mt. Washington, N. H.	23.71	602.2	30.07	763.8	22	— 5.6	59	NW	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Nashville, Tennessee	29.09	738.9	29.62	752.3	49	9.4	100	NE	7	3.1	.....	.....	10n	.....	NE	0.35	8.9	Heavy rain	
New Haven, Connecticut	30.00	762.0	30.13	765.3	30	— 1.1	67	N	8	3.6	.....	0	0	.....	.....	0	0	Clear	
New London, Connecticut	30.09	764.3	30.14	765.5	29	— 1.7	78	N	5	2.2	.....	0	0	.....	.....	0	0	Clear	
New Orleans, Louisiana	29.63	752.6	29.69	754.1	53	11.7	86	W	12	5.4	.....	.....	10s	.....	W	1.84	46.7	Cloudy	
Newport, Rhode Island	30.06	763.5	30.11	764.8	34	1.1	79	N	3	1.3	.....	1k	0	N	.....	0	0	Clear	
New York, New York	29.92	760.0	30.11	764.8	40	4.4	56	NE	12	5.4	.....	0	Fog	.....	.....	0	0	Clear	
Norfolk, Virginia	29.93	760.2	29.99	761.7	45	7.2	100	NE	6	2.7	.....	.....	10s	.....	Calm	0.03	0.8	Cloudy	
North Platte, Nebraska	27.31	693.7	30.12	765.0	13	—10.6	79	N	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Olympia, Washington Ter.	30.25	768.3	30.29	769.4	35	1.7	95	E	2	0.9	.....	.....	10s	.....	Calm	0	0	Cloudy	
Omaha, Nebraska	29.02	737.1	30.15	765.8	30	— 1.1	89	N	17	7.6	.....	.....	10s	.....	Calm	Inap.	Inap.	Cloudy	
Oswego, New York	29.85	758.2	30.19	766.8	33	0.6	89	N	15	6.7	.....	0	8s	.....	N	0	0	Fair	
Pembina, Dakota	29.59	751.6	30.47	773.9	22	— 5.6	86	N	13	5.8	.....	.....	10s	.....	Calm	0.01	0.3	Cloudy	
Philadelphia, Pennsylvania	30.08	764.0	30.13	765.3	37	2.8	70	NE	6	2.7	.....	1ck	Fog	NW	Calm	0	0	Clear	
Phœnix, Arizona	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Pike's Peak, Colorado	17.46	443.5	29.67	753.6	—12	—24.0	100	Calm	0	0	.....	.....	10n	.....	Calm	0.10	2.5	Light snow	
Pioche, Nevada	24.06	611.1	29.83	757.7	13	—10.6	90	NW	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Pittsburg, Pennsylvania	29.15	740.4	29.97	761.2	42	5.6	83	E	4	1.8	.....	5c	2s	Calm	E	0	0	Fair	
Port Huron, Michigan	29.43	747.5	30.12	765.0	35	1.7	80	NE	7	3.1	.....	5cs	2s	W	NE	0	0	Fair	
Portland, Maine	30.01	762.2	30.06	763.5	30	— 1.1	89	Calm	0	0	.....	0	Sm'e	.....	.....	0	0	Smoky	
Portland, Oregon	30.29	769.4	30.40	772.1	34	1.1	69	E	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Prescott, Arizona	24.77	629.2	30.13	765.3	10	—12.2	18	NE	.....	.....	.....	0	2s	.....	Calm	0	0	Fair	
Punta Rassa, Florida	29.68	753.9	29.69	754.1	64	17.8	88	SE	12	5.4	.....	0	10ks	.....	SW	0.48	12.2	Cloudy	
Red Bluff, California	29.79	756.7	30.17	766.3	37	2.8	71	N	6	2.7	.....	0	0	.....	.....	0	0	Clear	

UNITED STATES SERIES.—Continued.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Rochester, New York	29.54	750.3	30.18	766.6	31	— 0.6	89	NE	2	0.9	.....	.....	10s;fg	.....	NE; Calm	0	0	Cloudy	
Roseburg, Oregon	29.71	754.6	30.31	769.9	32.5	0.3	100	NE	3	1.3	.....	1.....	10s	.....	Calm	0	0	Cloudy	
Sacramento, California	30.05	763.3	30.14	765.5	35	1.7	90	N	6	2.7	.....	0	0	.....	.....	0	0	Clear	
St. Louis, Missouri	29.22	742.2	29.80	756.9	43	6.1	100	N	12	5.4	.....	.....	10n	.....	Calm	0.26	6.6	Light rain	
St. Marks, Florida	29.58	751.3	29.60	751.8	58	14.4	87	SW	14	6.3	.....	.....	10s	.....	SW	0.50	12.7	Cloudy	
St. Paul, Minnesota	29.28	743.7	30.15	765.8	33	0.6	89	N	4	1.8	.....	.....	10s	.....	Calm	0.22	5.6	Cloudy	
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salt Lake City, Utah	29.79	655.0	30.12	765.0	16	— 8.9	83	N	4	1.8	.....	0	0	.....	.....	0	0	Clear	
San Antonio, Texas	29.41	747.0	30.02	762.5	39	3.9	64	N	8	3.6	.....	2cs	0	Calm	.....	0	0	Clear	
San Diego, California	29.97	761.2	30.04	763.0	49	9.4	57	E	6	2.7	.....	.....	10s	.....	Calm	0	0	Cloudy	
Sandusky, Ohio	29.35	745.5	30.04	763.0	40	4.4	91	NE	22	9.8	.....	.....	10s	.....	Calm	Inap.	Inap.	Cloudy	
Sandy Hook, New Jersey	30.08	764.0	30.10	764.5	38	3.3	80	NE	11	4.9	.....	0	Sm'e	.....	.....	0	0	Clear	
San Francisco, California	30.06	763.5	30.12	765.0	46	7.8	69	NW	9	4.0	.....	0	0	.....	.....	0.36	9.1	Clear	
Santa Fé, New Mexico	23.24	590.3	29.78	756.4	8	—13.3	78	Calm	0	0	.....	5cs	0	Calm	.....	Inap.	Inap.	Fair	
Savannah, Georgia	29.54	750.3	29.63	752.6	54	12.2	93	E	10	4.5	.....	.....	10s	.....	E	0.03	0.8	Cloudy	
Shreveport, Louisiana	29.59	751.6	29.81	757.2	42	5.6	100	W	8	3.6	.....	.....	10n	.....	Calm	0.33	8.4	Light rain	
Smithville, North Carolina	29.74	755.4	29.78	756.4	55	12.8	93	NE	16	7.2	.....	.....	10n	.....	NE	0.03	0.8	Light rain	
Springfield, Massachusetts	29.96	761.0	30.09	764.3	27	— 2.8	66	Calm	0	0	.....	0	Fog	.....	Calm	0	0	Fair	
Stockton, Texas	27.14	689.3	30.14	765.5	27	— 2.8	88	NW	8	3.6	.....	0	5s	.....	NW	0.05	1.3	Fair	
Thatcher's Island, Mass	30.05	763.3	30.10	764.5	33	0.6	79	Calm	0	0	.....	1k	0	NE	.....	0	0	Smoky	
Toledo, Ohio,	29.36	745.7	30.06	763.5	38	3.3	81	N	14	6.3	.....	.....	10s	.....	NE	Inap.	Inap.	Cloudy	
Tucson, Arizona	.....	.....	.....	.....	29	— 1.7	34	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Tybee Island, Georgia	29.61	752.1	29.64	752.8	56	13.3	93	E	20	8.9	.....	.....	10ks	.....	SE	0	0	Threatening	
Umatilla, Oregon	30.24	768.1	.....	.....	30	— 1.1	89	NE	8	3.6	.....	.....	10s	.....	NE	0	0	Cloudy	
Vicksburg, Mississippi	29.41	747.0	29.67	753.6	50	10.0	93	NW	13	5.8	.....	.....	10n	.....	NW	0.66	16.8	Light rain	
Virginia City, Montana	24.48	621.8	29.96	761.0	15	— 9.4	82	SE	2	0.9	.....	.....	10s	.....	Calm	Inap.	Inap.	Cloudy	
Visalia, California	29.74	755.4	30.12	765.0	42	5.6	83	Calm	0	0	.....	Haze	0	Calm	.....	0	0	Clear	
Washington, D. C	29.94	760.5	30.06	763.5	33.5	0.8	84	NE	4	1.8	.....	5cs	Sm'e	NE	NE	0	0	Fair	
Wickenburg, Arizona	.....	.....	.....	.....	26	— 3.3	75	S	.....	.....	.....	8ck	0	Calm	.....	0	0	Fair	
Wilmington, N. Carolina	29.71	754.6	29.79	756.7	54	12.2	86	NE	20	8.9	.....	.....	10n	.....	NE	0.13	3.3	Light rain	
Winnemucca, Nevada	25.80	655.3	30.16	766.1	16	— 8.9	83	SW	5	2.2	.....	.....	10s	.....	Calm	0	0	Cloudy	
Wood's Holl, Mass	30.06	763.5	30.12	765.0	34	1.1	69	N	5	2.2	.....	.....	10s	.....	NE	0	0	Cloudy	
Yankton, Dakota	28.96	735.6	30.35	770.9	23	— 5.0	86	NW	11	4.9	.....	.....	10s	.....	Calm	0.09	2.3	Cloudy	
Yuma, Arizona	29.97	761.2	30.14	765.5	48	6.1	50	NE	4	1.8	.....	0	5s	.....	.....	0	0	Fair	
Sub-Series.																			
York Factory, B. A.	30.04	763.0	30.09	764.3	12.5	—10.8	90	SW	22	9.8	.....	4cs	3s	SW	.....	0	0	Cloudy	J. Fortescue, W. Wood.
Havana, Cuba, W. I	29.78	756.4	29.80	756.9	72	22.2	90	SW	3.6	1.6	.....	4ck	4n	SW	N	0.60	15.2	Cloudy	Chas. Hasselbrink.
Kingston, Jamaica, W. I	30.02	762.5	30.03	762.7	82	27.8	91	SE	5	2.2	.....	8c	8n	N	S	0	0	.....	James Gall.
Navassa, W. I	29.82	757.4	29.90	759.4	81	27.2	.....	SE	15	6.7	.....	.....	.....	.....	.....	0	0	Cloudy	F. M Everett.
St. Thomas, W. I	.....	.....	.....	.....	79	26.1	.....	ESE	2	0.9	.....	2c	2n	E	.....	0	0	.....	G. O. Gellich.
Paramaribo, D. Guiana, S. A	.....	.....	30.00	762.0	83	28.3	79	E	.....	.....	2	5k	7ks	E	.....	0.045	1.14	⅗ Cloudy	C. J. Hering.
Batavia, Dutch Guiana, S. A	30.05	763.2	30.06	763.4	83.1	28.4	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0	Clear	Dr. H. Groot.
Medellin, Colombia, S. A	25.22	640.6	.....	.....	66.5	19.2	82	Calm	.....	.....	0	0	4ks	.....	.....	0.01	0.3	Fair	Thomas Herran.
Honolulu, Oahu, H. I	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Daniel Smith.
Makawao, Maui, H. I	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. L. Clarke.

Note.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo; for Batavia, the barometer reduced to freezing but not to sea-level. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,883 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Deadwood, (?); Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Ploche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.67 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington 6.36 in.; Pike's Peak, 12.21 in.; Ploche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not certain. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation

STATIONS AND VESSELS.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard Mare Island, Cal.	30.06	763.5	40	4.4	39	3.9	91	SE	1	0.4	.....	.....	0	.....	.....	0.005	0.13	.....	.....	Clear	
Navy Yard, Pensacola, Fla.	29.64	752.8	.....	.....	55	12.8	87	WSW	41	18.3	.....	.....	10	.....	W	0	0	.....	.....	D. clouds.....	
Navy Yard, Portsmouth, N.H.	30.13	765.3	61	16.1	25	-- 3.9	77	W	.....	.....	1	.....	.....	.....	.....	0	0	.....	.....	Clear	
Naval Hospital, Yokohama, Japan.....	30.01	762.2	49	9.4	38	3.3	90	Calm	.....	.....	0	.....	0	.....	.....	0.16	4.1	.....	.....	Clear.....	
Alliance, Smyrna, Turkey.....	29.71	754.6	59	15.0	50	10.0	79	W	.....	.....	3	.....	10	.....	WNW	.....	.....	.....	.....	Rainy.....	
Ashuelot. Shanghai, China.....	30.16	766.1	51	10.6	42	5.6	100	ENE	.....	.....	1	.....	10	.....	.....	.....	.....	.....	.....	D. clouds.....	
Canonicus, New Orleans, La.....	29.68	753.9	43	6.1	53	11.7	80	W	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	Cloudy.....	
Colorado, New York, N. Y.....	30.10	764.5	38	3.3	37	2 8	62	N	5	2.2	.....	.....	5	.....	N	0	0	.....	.....	Light fog.....	
Despatch, Constantinople, Turkey.	29.64	752.8	79	26.1	39	3.9	100	N	.....	.....	6-7	.....	10	.....	NNE	.....	.....	.....	.....	Rain & snow	
Essex, S. 13° 25′, E. 0° 09′.....	29.93	760.2	74	23.3	75	23.9	90	SSE	.....	.....	2	.....	6	.....	.....	.....	.....	Smooth	S	D. clouds. ...	
Franklin, Norfolk, Va.....	30.06	763.5	62	16.7	48	8.9	100	ENE	8	3.6	.....	.....	9	.....	ENE	0	0	.....	.....	Cloudy.....	
Guard, Lisbon, Portugal.....	30.34	770.6	60	15.6	57	13.9	87	E	.....	.....	0-1	.....	10	.....	S&W	.....	.....	.....	.....	D. clouds....	
Lackawana, Mare Island, Cal.....	30.20	767.1	.....	.....	45	7.2	84	Calm	.....	.....	0	.....	0	.....	.....	.....	.....	.....	.....	Blue sky.....	
Marion, Villefranche, France.....	30.09	764.3	56	13.3	57	13.9	58	Calm	.....	.....	0	.....	2	.....	.....	.....	.....	Smooth	S	D. clouds....	
Michigan, Erie, Pa.....	29.57	751.1	55	12.8	48	8.9	78	E	.....	.....	1	.....	10	.....	E	.....	.....	.....	.....	Cloudy.....	
Monocacy, [Bangkok, Siam. E. 7° 32′, en route from Hong-Kong to	29.97	761.2	68	20.0	69	20.6	90	NNE	.....	.....	3	.....	10	.....	N	0	0	Mod'ate	SSE	Overcast.....	
New Hampshire, Port Royal, S.C.....	29.80	756.9	.....	.....	55	12.8	100	NE	8	3.6	.....	.....	9	.....	.....	0.05	1.3	.....	.....	D. clouds....	
Omaha, Valparaiso, Chili.....	30.00	762.0	64	17.8	62	16.7	77	N	.....	.....	1	.....	0	.....	.....	0	0	.....	.....	Pleasant.....	
Onward, Callao, Peru.....	30.00†	762.0†	76	24.4	74	23.3	90	Calm	.....	.....	0	.....	10	.....	.....	.....	.....	Long	W	D. clouds.....	
Ossipee, Norfolk, Va.....	30.02	762.5	65	18.3	48	8.9	92	ENE	.....	.....	3	.....	10	.....	NE	.....	.....	.....	.....	Overcast.....	
Palos, Shanghai, China.....	30.16	766.1	51	10.6	42	5.6	91	E	.....	.....	2	.....	10	.....	Calm	.....	.....	.....	.....	Misty.....	
Plymouth, N. 15° 26,′ W. 79° 53′.....	29.91	759.7	84	28.9	83	28.3	100	SE	.....	.....	1-2	.....	3	.....	.....	.....	.....	Smooth	S	Pleasant.....	
Powhatan, Norfolk, Va.....	.....	.....	.....	.....	48	8.9	100	NE	4.8	2.1	.....	.....	10	.....	.....	0	0	.....	.....	Overcast.....	
Ranger, Shanghai, China.....	30.24	768.1	.....	.....	48.5	9.2	85	E	.....	.....	1	.....	10	.....	Calm	.....	.....	.....	.....	Overcast.....	
Rio Bravo, Brownsville, Texas.....	29.99	761.7	.....	.....	47	8.3	85	NW	.....	.....	3	.....	5	.....	NW	.....	.....	.....	.....	D. clouds.....	
Santee, Annapolis, Md.....	30.15	765.8	67	19.4	39	3.9	82	NE	.....	.....	3	.....	8	.....	W	0	0	.....	.....	Cloudy.....	
Saratoga, Norfolk, Va.....	.....	.....	.....	.....	37	2.8	100	NE	.....	.....	1	.....	10	.....	S	Mod'ate	Mod'ate	.....	.....	Overcast.....	
St. Louis, League Island, Pa	29.95	760.7	33	0.6	34	1.1	79	NE	2	0.9	.....	.....	8	.....	NE	0	0	.....	.....	Fair.....	
Swatara, Norfolk, Va.....	30.07	763.8	.....	.....	54	12.2	80	NE	.....	.....	2	.....	9	.....	N&E	.....	.....	.....	.....	D. clouds.....	
Tennessee, Shanghai, China	30.14	765.5	74	23.3	46	7.8	77	ESE	.....	.....	1	.....	10	.....	.....	0.01	0.3	.....	.....	D. clouds.....	
Trenton, N. 37° 05 , E. 19° 12′.....	30.12	765.0	.....	.....	53	11.7	54	NNW	28	12.5	.....	.....	2	.....	N&W	0	0	Rough	N&W	Squally.....	
Vandalia, Valetta, Malta.....	30.25	768.3	61	16.1	58	14.4	82	NW	.....	.....	2	.....	0	.....	.....	.....	.....	.....	.....	Blue sky.....	
Wabash, Boston, Mass.....	30.14	765.5	51	10.6	37	2.8	53	NW	2	0.9	.....	.....	3	.....	NW	0	0	.....	.....	D. clouds.....	
Wyoming, Washington, D. C.....	30.50	774.7	.....	.....	33	0.6	.....	E	.....	.....	1	.....	5	.....	.....	.....	.....	.....	.....	D. clouds.....	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. The position given for the Plymouth is that at noon, local time, instead of that at 7:35 a. m., Washington time.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	TRUE COURSE TOWARD—	HOURLY RATE IN KNOTS.	BAROMETER REDUCED TO SEA-LEVEL.		TEMPERATURE OF THE AIR.		RELATIVE HUMIDITY.	WIND.			CLOUDS.				SEA-SWELL.		WEATHER.	OBSERVER.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	CHARACTER.	DIRECTION FROM—		
PACIFIC MAIL S. S. CO. MARINE SERIES.																		
Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents.																		
S. S. Alaska																		
S. S. China																		Capt. Berry.
S. S. City of New York																		Capt. Cobb.
S. S. City of Panama																		Capt. Seabury.
S. S. City of Peking, Yokohama, Japan			30.13*	765.3*	38	3.3	100	Calm			0		0			Smooth		Blue sky	Lt. Z. L. Tanner, U.S.N.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio, N. 35° 26′, E. 139° 39′			30.12	765.0	54	12.2		N			2							Blue sky	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. *Aneroid.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																		Capt. H. H. Perry.
S. S. Baltic																		Capt. J. W. Jenning.
S. S. Britannic																		Capt. W. H. Thompson
S. S. Celtic																		Capt. B. Gleadell.
S. S. Germanic																		Capt. C. W. Kennedy.
S. S. Republic																		

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.

S. S. Belgic, N. 42° 8′, E. 179° 51′			29.27*	743.4*				SE			8		Heavy		WNW;E	Heavy	WNW	Squally	Capt. John Metcalf.
S. S. Gaelic, Hong-Kong, China			30.18†	766.6†	63	17.2	72	E			4							Foggy	Capt. W. H. Kidley
S. S. Oceanic, N. 30° 10′, W. 173° 19′			30.06	763.5	62	16.7	72	NNW			3		3		NW	Heavy	NW	D. clouds	Capt. H. Parsell.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. *Corrected for temperature and elevation; instrumental error not known. †Aneroid.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																		Capt. H. Andressen.
S. S. Berlin																		Capt. C. Pohle.
S. S. Braunschweig, Off East Goodwin			29.69	754.1	50.0	10.0	??	SW			6		10		NW; SW	Mod'ate	SW	Clearing	Capt. Undütsch.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds.

UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Lo'wr	Upper.	Lower.	Character	Direction From—		
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second	0—10.	0—10.	0—10.	From—	From—				
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, N. 51° 25′, W. 16° 52′			29.52*	749.8*	55	12.8	87	W			4		6		WSW	Mod'ate	SW	D. clouds	Captain Sargent.
S. S. Ohio, N. 46° 58′, W. 47° 25′			29.95	760.7	34	1.1	90	WSW			3		5		W	Smooth		Clear	Captain Morrison.
S. S. Pennsylvania																			Captain Harris.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. * Aneroid

RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

S. S. Nederland																			Capt. Randle.
S. S. Switzerland																			Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

S. S. Hibernian																			
S. S. Scandinavian, N. 52° 46′, W. 33° 28′			29.27	743.4	37	2.8		W			6				W	Mod'ate	W	Showery	Capt. W. Richardson.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller. Off Monomoy, Mass.			30.08	764.0	39	3.9	91	NNW	6	2.7			10ks		N	Smooth		Overcast	Capt. James Jorgensen.

NOTE.—The originals for the schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.,) Chief Signal Officer, U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON DECEMBER 30, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:48 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.

1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:38 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.

1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:28 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours	.....	.....	30.39	771.9	61.2	16.2	61	Calm	.....	.....	0	.....	2	.....	.....	0	0	Fair	Michel.
Algiers	.....	.....	30.25	768.4	60.8	16.0	76	Calm	.....	.....	0	.....	2	.....	.....	0	0	Fair	Peter.
La Calle	.....	.....	30.26	768.5	59.7	15.4	71	NNW	.....	.....	2	.....	5	.....	.....	0	0	Cloudy	Fleury.
Tunis	.....	.....	30.27	768.9	61.5	16.4	67	W	.....	.....	3	.....	6	.....	.....	0	0	Cloudy	Jacques.
Sfax	.....	.....	30.28	769.0	60.8	16.0	.....	W	.....	.....	1	.....	1	.....	.....	0	0	Pretty fair	Husson.
Saida	.....	.....	30.31	769.9	64.8	18.2	80	S	.....	.....	1	.....	2	.....	.....	0	0	Fair	Millot.
Tebessa	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Bassières.
Geriville	.....	.....	30.36	771.2	42.4	5.8	85	NW	.....	.....	1	.....	4	.....	.....	0	0	Cloudy	Lemaillot.
Laghouat	.....	.....	30.28	769.0	60.8	16.0	32	W	.....	.....	1	.....	0	.....	.....	0	0	Clear	Guyot.
Biskra	.....	.....	30.33	770.4	61.3	16.3	32	Calm	.....	.....	0	.....	0	.....	.....	0	0	Clear	Kuntz.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 800? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m.; or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

Agram	29.48	748.8	30.05	763.2	40.3	4.6	56	NE	.....	.....	3	.....	8	.....	.....	0	0	.....	Prof. Ivan Stozir
Cracow, I. R. Observatory	29.26	743.1	30.08	763.9	22.6	— 5.2	93	NE	.....	.....	1	.....	10	.....	.....	0.039	1.0	.....	Dr. Wiersbiski.
Eperies	29.19	741.3	30.16	766.1	9.0	—12.8	100	Calm	.....	.....	0	.....	10	.....	.....	0	0	.....	Julius Mikolik.
Gratz	28.80	731.6	30.12	765.0	29.8	— 1.2	84	SW	.....	.....	2	.....	0	.....	.....	0	0	.....	Andreas Rospini.
Hermannstadt	28.68	727.3	30.20	767.1	9.9	—12.3	93	NNW	.....	.....	1	.....	0	.....	.....	0	0	.....	Prof. Reissenberger.
Kremsmünster	28.71	729.2	30.09	764.2	40.6	4.8	94	WSW	.....	.....	2	.....	10	.....	.....	0.335	8.5	.....	Prof. C. Wagner.
Lemberg	29.02	737.1	30.07	763.8	25.2	— 3.8	93	SW	.....	.....	1	.....	9	.....	.....	0	0	.....	Dr. T. Stanecki.
Pola	30.02	762.4	30.13	765.3	45.7	7.6	74	Calm	.....	.....	0	.....	10s	.....	.....	0	0	.....	I.R.Hydrographic Office.
Szathmar	29.70	754.3	30.21	767.2	16.6	— 8.6	52	NE	.....	.....	3	.....	3	.....	.....	0	0	.....	Johann Tamas, S. J.
Szegedin	29.80	757.0	30.10	764.6	23.7	— 4.6	100	Calm	.....	.....	0	.....	10	.....	.....	0.012	0.30	.....	Karl Stancel.
Trieste	30.02	762.5	30.12	765.1	44.4	6.9	67	Calm	.....	.....	0	.....	10	.....	.....	0	0	Cloudy	P. Busin.
Vienna	29.34	745.2	30.08	763.9	29.5	— 1.4	100	Calm	.....	.....	0	.....	10	.....	.....	0.134	3.4	Foggy	I. R. Central Met. Obs'y.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 843.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

Arlon	28.53	724.7	30.08	764.0	41.9	5.5	98	SSW	.....	.....	1	.....	10	.....	.....	0.488	12.4	Foggy	Prof. M. Passau.
Brussels	29.72	754.8	29.92	760.0	48.6	9.2	90	SW	.....	.....	1	.....	10	.....	SW	0.378	9.60	.....	Royal Observatory.
Furnes	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. E. de Cae.
Maeseyck	29.81	757.2	29.94	760.5	46.9	8.3	97	SSW	.....	.....	2	.....	10	.....	.....	0.268	6.8	Raining	M. Pierrot.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

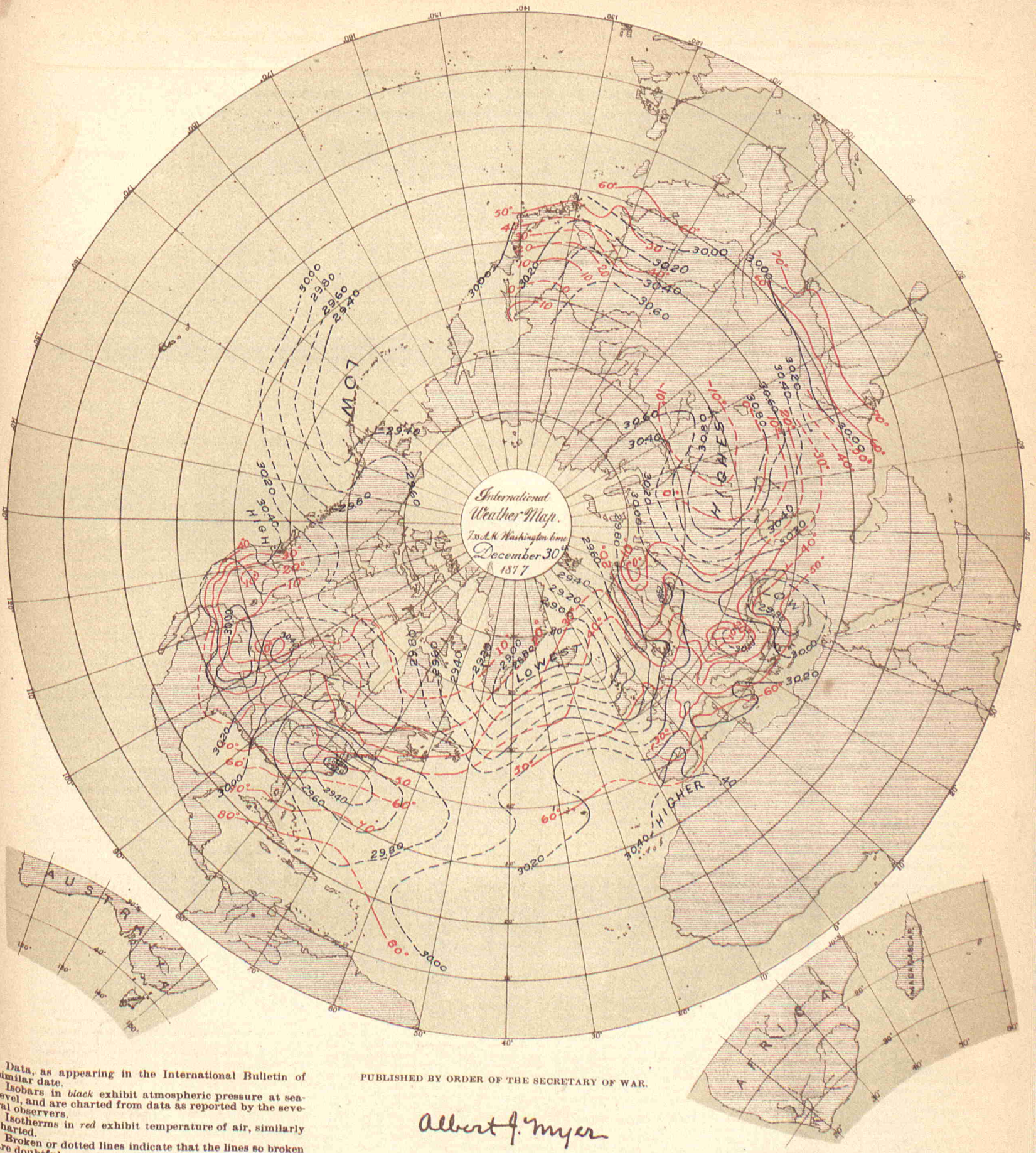
Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Méteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	29.30	744.2	29.40	746.7	40.6	4.8	.....	SW	16	7.2	.....	.....	3	.....	.....	0	0	Blue sky	W. Boswell.
Ardrossan	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	William McNeil.
Armagh, Observatory	.....	.....	29.45	748.0	43.9	6.6	.....	SSW	7	3.1	.....	.....	.....	.....	.....	.....	.....	.....	S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)	.....	.....	29.54	750.3	47.7	8.7	.....	SSE	7	3.1	.....	.....	10	.....	.....	.....	.....	Raining	John Hartnup.
Birr Castle, (Parsonstown)	.....	.....	29.53	750.0	40.7	4.8	.....	Calm	.....	.....	0	.....	10	.....	.....	.....	.....	Overcast	J. Dreyer.
Bradford, Yorkshire	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.04	1.0	.....	J. McLandsborough.
Bridgetown, (Barbados)	29.89	759.2	29.92	760.0	81	27.2	.....	NE	.....	.....	1	.....	3	.....	.....	.....	.....	D. clouds	Pvt. G. W. Roberts, A.
Cambridge, Observatory	.....	.....	29.69	754.1	50.0	10.0	.....	S	.....	.....	1	.....	10	.....	.....	Blank	Blank	Overcast	H. Todd. [H.C.
Cardington	.....	.....	29.71	754.6	51.4	10.8	.....	SW	.....	.....	1	.....	10	.....	.....	.....	.....	Raining	John McLaren.
Chatham, School M. E	29.66	753.4	29.79	756.7	47.2	8.4	.....	SW	.....	.....	3	.....	10	.....	.....	.....	.....	Drizzling	Lt. W. G. Morris, R. E.
Dartmoor	28.07	713.0	29.54	750.3	47.4	8.6	.....	S	.....	.....	5	.....	10	.....	.....	.....	.....	Raining	Alexander Watt.
Davos Platz (Switzerland)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Francis Redford, M. A.
Donaghadee	29.46	748.3	29.50	749.3	43	6.1	.....	SW	.....	.....	3	.....	10	.....	.....	.....	.....	Overcast	J. Mac Gowan.
Dover	29.79	756.7	29.81	757.2	49	9.4	.....	WSW	.....	.....	3	.....	10	.....	.....	.....	.....	Rain and fog	J. Costello.
Eccles, (near Manchester)	.....	.....	29.57	751.1	48.9	9.4	.....	S	3.4	1.6	.....	.....	10	.....	.....	.....	.....	Gloomy	Thomas Mackereth.
Falmouth, Observatory	29.30	746.5	29.62	752.3	52.3	11.3	.....	SSW	.....	.....	6	.....	10	.....	.....	.....	.....	Raining	The Staff.
Fort Napier, (Natal)	27.59	700.8	29.77	756.1	86.2	30.1	.....	E	.....	.....	2	.....	0	.....	.....	.....	.....	Blue sky	Pvt. G. Salmon, A. H. C
Free Town, (Sierra Leone)	.....	.....	29.88	758.9	86	30.0	.....	E	.....	.....	1	.....	3	.....	.....	.....	.....	D. clouds	
Galway, Queen's College	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	30.27	768.8	30.33	770.4	58.9	14.9	.....	NW	.....	.....	4	.....	2	.....	.....	.....	.....	D. clouds	Corpl. C. Aitken, A. H. C.
Glasgow, Observatory	29.26	743.2	29.47	748.5	44.2	6.8	.....	SSW	.....	.....	2	.....	.....	.....	.....	.....	.....	Overcast	D. G. Maclean.
Great Yarmouth	29.72	754.9	29.72	754.9	43	6.1	.....	SW	.....	.....	2	.....	6	.....	.....	.....	.....	Misty	G. T. Watson.
Greenwich, Royal Obs'y	29.57	751.1	29.75	755.6	50.7	10.4	.....	SSW	.....	.....	4	.....	10	.....	.....	.....	.....	Raining	The Staff, for G. B. Airy.
Guernsey	29.57	751.1	29.79	756.7	53	11.7	.....	SSW	.....	.....	3	.....	8	.....	.....	.....	.....	Misty	Dr. S. E. Hoskins, F.R.S.
Helston	.....	.....	29.66	753.4	53	11.7	.....	S	.....	.....	6	.....	10n	.....	.....	0.05	1.3	Misty	M. P. Moyle.
Holyhead	29.44	747.8	29.49	749.0	44	6.7	.....	NNW	.....	.....	3	.....	10	.....	.....	.....	.....	Raining	John Tilston.
Jersey	29.57	751.1	29.86	758.4	51.0	10.6	.....	SW	.....	.....	4	.....	10	.....	.....	.....	.....	Gloomy	J. Fisher.
Kew, Observatory	.....	.....	29.74	755.4	50.2	10.1	.....	SSW	19	8.5	.....	.....	10	.....	.....	.....	.....	Threatening	The Staff.
Kingstown	29.49	749.0	29.52	749.8	42	5.6	.....	NW	.....	.....	2	.....	10	.....	.....	.....	.....	Raining	George Mitchell.
Leicester, Museum	.....	.....	29.62	752.3	48.8	9.3	.....	W	.....	.....	2	.....	10	.....	.....	.....	.....	Overcast	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	30.12	765.0	30.20	767.1	60.0	15.6	.....	NW	.....	.....	2	.....	4	.....	.....	.....	.....	D. clouds	Sgt. Fred. Travis, A. H.
Nairn	29.22	742.2	29.31	744.5	44	6.7	.....	W	.....	.....	2	.....	5	.....	.....	.....	.....	⅛ clouded	W. D. Penny. [O.
Nassau, (Bahamas)	.....	.....	29.82	757.4	69.5	20.8	.....	SW	.....	.....	6	.....	5	.....	.....	.....	.....	D. clouds	C. S. Duncombe.
Nottingham, Observatory	29.44	747.8	29.63	752.6	50.0	10.0	.....	SSW	.....	.....	3	.....	10cs;d	.....	SSW	0.130	3.30	Overcast	E. J. Lowe, F. R. S
Oscott, St. Mary's College	29.09	738.9	29.62	752.3	48.0	8.9	.....	S	.....	.....	3	.....	10	.....	.....	.....	.....	Misty	Rev. Stephen Whitty
Oxford, Radcliffe Obs'y	.....	.....	29.67	753.6	52	11.1	.....	S	.....	.....	1	.....	10	.....	.....	.....	.....	Drizzling	Mr. Lucas.
Plymouth	29.59	751.6	29.66	753.4	51.6	10.9	.....	SW	.....	.....	5	.....	10	.....	.....	.....	.....	Drizzling	John Merrifield.
Roche's Point	29.46	748.3	29.51	749.5	44	6.7	.....	N	.....	.....	4	.....	10	.....	.....	.....	.....	Raining	W. Kennedy.
Saint Ann's Head	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	John C. Walker.
Sandwick Manse, (Orkneys)	.....	.....	29.18	741.2	41.3	5.2	.....	SSW	21	9.4	.....	.....	10	.....	.....	.....	.....	Overcast	Rev. C. Clouston, LL. D
Scutari, Cemetery, (Turkey	.....	.....	29.99	761.7	32.4	0.2	.....	N	.....	.....	3	.....	10	.....	.....	.....	.....	Snowing	Sergt. W. H. Lyne.
Sheffield	29.33	745.0	29.61	752.1	47.2	8.4	.....	SW	.....	.....	2	.....	9	.....	.....	0.48	12.2	Overcast	W. F. Cooper.
Silloth Rectory	29.49	749.0	29.52	749.8	43.9	6.6	93	SW	.....	.....	1	.....	10	.....	.....	0.185	4.70	Overcast	Rev. F. Redford, M. A.
Stonyhurst, Observatory	.....	.....	.....	.....	46.6	8.1	.....	S	.....	.....	2	.....	10	.....	.....	.....	.....	Raining	Rev. S. J. Perry.
Stornoway, Lews C., (Hebr.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	John Smith.
Stratfield Turgiss	29.50	749.3	29.71	754.6	50.8	10.4	.....	SE	.....	.....	1	.....	10	.....	.....	.....	.....	Raining	Rev. C. H. Griffith, F.M.S
Thurso	.....	.....	29.21	741.9	41	5.0	.....	SSW	.....	.....	5	.....	8	.....	.....	.....	.....	Gloomy	John Trotter.
Truro, Royal Institution	.....	.....	29.58	751.3	53	11.7	.....	S	.....	.....	7	.....	10	.....	.....	.....	.....	Raining	W. Newcombe.
Valencia, Observatory	.....	.....	29.56	750.8	45.5	7.5	.....	WNW	5	2.2	.....	.....	9	.....	.....	.....	.....	D. clouds	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Henry Mercer.
Cape Good Hope, Obs'y	29.95	760.7	29.99	761.7	82.3	27.9	49	SSE	19	8.5	.....	0	1	.....	.....	.....	.....	.....	The Staff, for E. J. Stone.
Hobart Town, (Tasmania)	.....	.....	29.86	758.4	66.0	18.9	73	NW	.....	.....	2	.....	3k	.....	.....	0	0	.....	Francis Abbott, F.R.A.S.
Leith, Restalrig Park	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Andrew Gibb.
Mauritius, Observatory	29.74	755.4	29.93	760.1	81.8	27.7	71	ENE	16.5	7.4	.....	9	4	W	ENE	0.02	0.5	Squally	C. Meldrum.
Melbourne, Observatory	29.98	761.5	30.07	763.8	62.0	16.7	85	SSW	10	4.5	.....	.....	7d	.....	WSW	0	0	Fine	R. L. J. Ellery.
Monach L't-house, (Hebrides)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Youngclause.
North Unst, (Shetland Is.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Robert Burnet.

Note.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 8 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m.

Marine Series. Vessels.	Sea or swell. Height scale 0—9	Sea or swell. Direction from—		Observer.
S. S. Algeria	.....	.....	.....	Capt. W. Watson.
S. S. Batavia	.....	.....	.....	Capt. J. E. Mouland.
Ship Camperdown	.....	.....	.....	Capt. A. T. Miller.
Brig Catherine	.....	.....	.....	Capt. Adam Smith.
Barque Celeste	.....	.....	.....	Capt. D. F. McKechnie
S. S. Hibernia	.....	.....	.....	Capt. W. R. Cato
Barque Maroon	.....	.....	.....	Capt. A. T. Brown.
Ship Mikado	.....	.....	.....	Capt. C. C. Prehn.
Royal Alice, N. 48° 30′, W. 29° 10′	5	NW	D. clouds	Capt. E. M. Hughes.
S. S. Seine	.....	.....	.....	Capt. H. Manning.
Barque Sorata	.....	.....	.....	Capt. Jas. J. Price.
Schooner Traveller	.....	.....	.....	Capt. Alex Simpson

Note.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet. Weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO 220 DEVONSHIRE ST BOSTON

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	BAROMETER. Corrected for instrum'tal error and temperature. Inches.	BAROMETER. Corrected for instrum'tal error and temperature. Millimeters.	BAROMETER. Reduced to sea-level. Inches.	BAROMETER. Reduced to sea-level. Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Upper. From—	CLOUDS. Direction. Lower. From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	WEATHER.	OBSERVER.
San José	26.22	666.0			70.2	21.2	89	NE			1	1ck	8sd		NE				Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.74	755.5	29.79	756.7	33.6	0.9	94	SE			2		10					Rain & snow
Farõe	29.72	754.8	29.74	755.3	38.7	3.7	98	SW			2		2					
Godthaab, (Greenland)	29.08	737.4	29.08	738.5	8.2	—13.2	96	Calm			0		6					
Stykkisholm, (Iceland)	28.65	727.7	28.69	728.8	32.9	0.5	100	SE			4		10					Raining
Thorshavn, (Farõe)	28.87	733.2	28.80	734.1	42.6	5 9	87	SSW			2							
Vestervig	29.54	750.2	29.71	754.5	38.1	0.6	96	SE			4		10					Foggy

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

Alençon, Normal School	29.47	748.4	30.02	762.4	44.6	7	93	SW			3		10		SW	0.08	2.	Covered	Collignon, Director.
Amiens, Normal School																			Bonvarne, Director.
Avignon, Normal School	30.09	764.2	30.17	766.2	53.2	11.8	78	N			1		0		0	0	0	Very clear	Mr. Giraud, Director
Bar-sur-Seine	29.51	749.5	30.08	764.0	50.0	10.0	90	SW			1		10		SW	0	0	Covered	C. Saillard.
Beaumette Obs'y (Angers)	29.72	755.0	29.89	759.1	53.6	12.0	97	S	6.7	3.0			10		SW	0.445	11.3	Raining	Albert Cheux.
Beauvais	29.69	754.2	29.98	761.4	50.5	10.3	86	S			1		10		SW	0.08	1.	Covered	Normal School.
Besançon	29.25	742.9	30.15	765.7	51.8	11	85	SSW			3		8		SW	0.47	12.	Very cloudy	Normal School.
Bourg-en-Bresse	29.31	744 4	30.23	767.8	54.9	12.7	79	S			2		2k		S	0.20	5.	Slightly cl'dy	Normal School.
Bourges, Normal School	29.68	753.8	30.24	768.1	48.9	9.4	97	SW			6		5		SW	0.122	3.1	Cloudy	A. Wagner, Director.
Brest, Naval Observatory	29.47	748.4	29.69	754.0	53.8	12.1	90	SW			4		10		SW	0.030	0.75	Raining	The Staff.
Carcassonne, Normal School	29.71	754.6	30.12	765.1	56.5	13.6	92	W			2		5		NW	0	0	Cloudy	Vateau, Director.
Caen																			Normal School.
Chartres, Normal School	29.41	746.9	29.99	761.7	41.7	5.4		S			4		5		S	0.16	4.		Lequin, Director.
Châlons-sur-Marne, N. Sch'l	29.75	755.7	30.08	763.9	50.0	10.0	97	SW			3		10kn			0	0	Covered	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.74	730.0	30.09	764.2	58.6	14.8	68	SW			3		8		W	0	0	Very cloudy	Alluard, Director.
Commercy, Normal School	29.19	741.5	30.09	764.2	46.4	8	91	W			4		5		W	0.39	10.	Cloudy	Dr. Goulet, Director.
Commune de Gréasque*	29.08	738.5	30.22	767.5	53.4	11.9	71	NW			4		2		NW	0	0	¾ covered	M. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	29.75	755.7	29.97	761.2	53.2	11.8	95	W			2		8		E	0.394	10.0	Very cloudy	Mouillot, Director.
Le Mans, Normal School	29.66	753.4	29.97	761.2	51.3	10.7	93	SW			2		8		SW	0.087	2.2	Very cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.43	747.6	30.37	771.5	52.2	11.2	74	S			2		5		NE	0.150	3.80	Cloudy	Voudez, Director.
Lorient, Naval Observatory	29.76	756.0	29.86	758.5	54.3	12.4	90	SSW			5		10			0.591	15.0	Covered	T. Carré, Director.
Mâcon, Normal School	29.44	747.7	30.14	765.6	47.3	8.5	97	Calm			0		5			0.650	16.5	Cloudy	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	29.02	737.0	30.08	764.1	45.5	7.5	89	SSW			2		10		NE	0	0	Covered	Normal School.
Nismes, Normal School	29.90	761.7	30.19	766.9	59.0	15	70	SW			1		5		S	0	0	Cloudy	Boyer, Director.
Orleans, Normal School	29.65	753.2	30.04	763.1	49.6	9.8	95	SW			2		2			0.163	4.2	Slightly cl'dy	Bernard, Director.
Paris, Observatory	29.76	755.8	30.00	762.0	50.4	10.2	94	SSW			2		10			0.014	0.36	Drizzling	National Observatory.
Privas	29.13	740.0	30.23	767.9	45.5	7.5	90	NW			1		1		NW	0	0	Clear	Normal School
Rochefort, Naval Obs'y	30.04	762.9	30.07	763.7	54.7	12.6	98	SW			5		10		NE	0.24	6.	Covered	Lt. Decante, Director.
Rouen, Normal School	29.84	758.0	29.93	760.2	52.7	11.5	83	W			3		10		SW	0.087	2.2	Covered	F. Lucard, Director.
Tarbes, Normal School	29.15	740.4	30.26	768.6	49.1	9.5	94	W			2		5		W	0	0	Cloudy	T. Hugues, Director.
Villefranche	29.48	748.8	30.20	767.1	52.0	11.1	97	SW			2		8		N	0.071	1.8	Very cloudy	Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.80	756.8	29.82	757.5	78.8	26										0	0		L'Abbé Marchési.
Marseilles, Observatory			30.13	765.2	54.7	12.6	58	NW			3		8			0	0	Cloudy	The Staff.
Mont-Louis	24.99	634.8	30.31	769.8	45.5	7.5	56	SW	11.2	5.00			2		W	0	0		Mr. Falguère.
Nice			30.10	764.6	53.6	12.0	70	NE			2		1			0	0	Clear	Dr. A. Niepce.
Paris, Montsouris Obs'y	29.71	754.6	29.98	761.6	50.0	10.0	95	SSW			2-3		10		SSW	0.008	0.2	Sprinkling	Marié Davy, Director.
Perpignan			30.17	766.2	64.4	18.0	63	E	1.9	0.83			1		NW	0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.																			M. Baylac.
Pic du Midi, (Plantade,) H. P.	25.62	574.5			39.2	4.0		W			3		7			0.512	13.0	Fair	Gen'l de Nansouty.
Saint Maur, (near Paris)	29.84	757.8	30.00	762.0	50.7	10.4	89	SSW			2		10		SW	0.114	2.9		E. Renou.
Toulouse, Observatory	29.46	748.2	30.19	766.7	58.8	14.9	84	SE			2		2			0.067	1.7		The Staff.
Tours	29.82	757.5	30.02	762.5	54.0	12.2	90	SW			2		10		WSW	0.031	0.8		C. Marquet.
Versailles, (near Paris)			29.99	761.8	50.9	10.0	97	SW			2		10			0.020	0.51	Rarry	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	29.93	760.2	29.95	760.8	48.6	9.2	99	NW	6.3	2.8			10n			0.028	0.7	Drizzling	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published. At Mirecourt and Rochefort the cloud directions are apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	OBSERVER.
Bamberg	29.69	754.1	29.87	758.7	46.6	4.8	92	SW			1		10			0.095	2.42		Prof. Dr. Hoh.
Berlin	29.43	747.5	29.96	761.0	31.1	— 0.5	100	SSE			2		10					Rain & snow	Prof. Arndt.
Breslau	29.63	752.7	30.07	763.8	45.3	7.4	94	SW			2		8.			0.332	8.2	Raining	Royal University Obs'y.
Carlsruhe	29.37	746.0	29.98	761.4	36.7	4.3	94	SW			1		8			0.174	4.43		Albert Senz.
Cassel	29.76	755.9	29.92	760.0	49.1	9.5	90	SW			3		10			0.28	7.		Dr. H. Möhl.
Crefeld	29.89	759.3	29.93	760.2	37.4	3.0	96	WSW			0		10			0.28	7.		Director Lose.
Emden	29.70	754.3	30.07	763.8	42.8	6.		SSW			1		8			0.35	9.	Foggy	Prof. Prestel.
Frankfort on the Main	29.03?	737.4?	30.19	766.9	45.0	7.2	94	WSW			1		3	W		0.102	2.6		Physical Society.
Friedrichshafen	29.78	756.4	29.85	758.3	36.0	2.2	100	SW			2		10			0.201	5.1	Dense fog	M. Wilhelm.
Hamburg	29.80	756.9	29.82	757.3	38.1	3.4	98	SW			2		10			0.136	3.45		Captain F. Hegemann.
Kiel	29.89	759.2	29.97	761.2	19.8	— 6.8	90	SE								0	0	Cloudy	Prof. G. Karsten.
Königsberg, (Prussia)			29.87	758.7	29.3	— 1.5		SE			4		4			0	0		Prof. E. Luther.
Köslin	29.54	750.3	29.97	761.3	40.6	4.8	94	WSW			3		8	WSW		0.146	3.7		H. Müller.
Leipsic, Observatory	29.99	761.8	30.04	763.0	30.6	— 0.8	86	SW			3		9cs;ks						Prof. Bruhns.
Memel, Naval School	29.98	761.6	30.00	762.0	23.7	— 4.6	86	SSE			2		7	W		0	0		Reinbrech von Skalweit.
Neufahrwasser	29.70	754.4	30.01	762.2	29.1	— 1.6	92	SE			5					0.110	2.80	Covered	A. Lothes.
Posen	29.56	750.9	30.12	765.1	47.5	8.6	92	Calm			0		10	W		0.287	7.3		Dr. Magener.
Strassburg Obs., (in Alsace	29.11	739.3	30.06	763.5	49.1	9.5	65	W			1		9	W		0.051	1.3	Raining	Dr. Schur.
Stuttgart	29.43	747.6	29.96	760.9	45.5	7.5	93	SW			4		10			0.364	9.25	Foggy	Prof. Schoder.
Treves, (Trier)	28.54	725.0	30.09	764.3	40.5	4.7	92	W	2	1			9k		W	0.366	9.3		Prof. Flesch.
Weissenburg, (Bavaria)	29.81	757.2	29.85	758.2	36.3	2.4	98	WSW			3		10			0	0	Covered	Dr. Von Bebber.
Wustrow, Naval School																			E. F. Schütz.
German Naval Series.																			

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4. Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines, Königsberg, Posen and Wustrow in cubic zolls. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.72	754.9	30.13	765.2	43.9	6.6		N			1.5							Clear	Dr. J. F. J. Schmidt.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and wind-force; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.87	758.7	29.92	760.0	67.6	19.8	62	SW	17.0?	7.6?			0			0	0	Blue sky
Deesa	29.44	747.7	29.93	760.1	70.1	21.2	45	Calm								0	0	Blue sky
Bombay	29.85	758.2	29.59	759.1	74.5	23.6	64	NW	12.0	5.4			0			0	0	Blue sky
Poona	27.86	707.6	29.86	758.6	78.0	25.6	47	E					6			0	0	D. clouds
Lahore	29.20	741.8	30.00	761.9	51.1	10.6	83	Calm	0.6	0.3			6			0	0	Cloudy
Belgaum	27.34	694.4	29.89	759.2	73.7	23.2	69	SSE	1.0	0.4			1			0	0	D. clouds
Bangalore																		
Roorkee	29.00	736.5	29.94	760.6	55.8	13.2	75	SE	2.0	0.9			7			0	0	
Agra	29.32	744.8	29.91	759.8	61.8	16.6	56	W								0	0	
Trichinopoly																		
Nagpur	28.76	730.6	29.81	757.1	77.9	25.5	60	Calm	4.0	1.8			2			0	0	Blue sky
Madras																		
Lucknow	29.51	749.6	29.90	759.4	62.4	16.9	84	Calm	2.1	0.9			10			0	0	Overcast
Allahabad	29.55	750.6	29.87	758.7	67.7	19.8	92	NNE	1.7	0.8			8		W	0.19	4.8	D. clouds
Patna	29.77	756.1	29.96	761.0	64.2	17.9	92	W	0.7	0.3			10	W	W	0.61	15.5	Overcast
Hazaribagh	27.84	707.1	29.91	759.8	63.3	17.4	91	N	5.0	2.2			10		N	0.52	13.2	Thunder-storm
Cuttack	29.79	756.7	29.88	758.8	78.0	25.6	60	S	0.2	0.1			0			0	0	Blue sky
Calcutta (Alipore)	29.87	758.7	29.89	759.2	67.6	19.8	95	SE	4.0	1.8			0			0	0	Blue sky
Goalpara	29.47	748.6	29.87	758.8	68.8	20.4	73	Calm	1.4	0.6			1			0	0	D. clouds
Chittagong	29.82	757.5	29.92	759.9	70.2	21.2	87	WSW	2.4	1.1			0			0	0	Blue sky
Sibsagar	29.55	750.6	29.90	759.4	64.9	18.3	85	SSE	0.8	0.4			10			0	0	D. clouds
Rangoon																		
Jubbulpore	28.46	722.8	29.83	757.8	75.0	23.9	59	NW	4.3	1.9			0			0	0	Blue sky

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	22.19	563.6	30.18	766.5	25.9	— 3.4	90	WSW	.....	.....	2	.....	0	.....	.....	0	0	.....	Ab. Dom. Morgini.
Stelvio	22.19	563.5	30.15	765.8	26.4	— 3.1	.....	ENE	.....	.....	1	.....	6	SW	.....	0.169	4.3	.....	Signora Ernesta Manfredi.
Udine	29.69	754.2	30.12	765.1	40.8	4.9	55	Calm	0	0	.....	.....	0	.....	.....	0	0	.....	Prof. Giovanni Clodig.
Padua	30.01	762.2	30.12	765.1	36.9	2.7	52	SSW	0	0	.....	.....	1	.....	.....	0	0	.....	Prof. Dott. Lorenzoni.
Vicenza	29.93	760.2	30.13	765.3	40.3	4.6	45	E	0	0	.....	.....	0	.....	.....	0	0	.....	Conte Alm. Da Schio.
Verona	29.89	759.1	30.12	765.0	43.7	6.5	60	ENE	.....	.....	1	.....	0	.....	.....	0	0	.....	Dott. B. Bertoncelli.
Bergamo	28.78	730.9	30.15	765.8	39.2	4.0	49	SSW	.....	.....	1	.....	0	.....	.....	0	0	.....	Prof. Trionfini Carlo.
Domodossola	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Giuseppe Calza.
Milan	29.60	751.9	30.19	766.7	41.0	5.0	.....	WNW	.....	.....	1	.....	9	WSW	.....	0	0	.....	Ab. Gio. Capelli.
Pavia	29.77	756.2	30.13	765.4	41.0	5.0	52	W	.....	.....	2	.....	0	.....	.....	0	0	.....	Prof. Gio. Cantoni
Moncalieri	29.21	741.9	30.15	765.9	41.2	5.1	48	ENE	0	0	.....	.....	4	.....	.....	0	0	.....	Prof. P. F. Denza.
Mondovi	28.17	715.4	30.15	765.8	38.3	3.5	36	NW	.....	.....	2	.....	2	W	.....	0	0	.....	Prof. D. C. Bruno.
Porto Maurizio	29.93	760.3	30.16	766.1	53.2	11.8	62	NE	.....	.....	2	.....	9	.....	.....	0	0	.....	Prof. L. Vassallo.
Genoa	29.96	761.0	30.13	765.4	50.9	10.5	67	E	1.2	0.6	.....	.....	10	SE	.....	0	0	.....	Prof. G. M. Garibaldi
Piacenza	29.87	758.8	30.14	765.5	42.1	5.6	45	NW	5.6	2.5	.....	.....	0	.....	.....	0	0	.....	Dott. G. Manzi.
Parma	29.84	758.0	30.17	766.4	42.3	5.7	68	NNE	.....	.....	2	.....	1	.....	.....	0	0	.....	Prof. P. Pigorini.
Florence	29.90	759.4	30.17	766.2	43.3	6.3	88	E	.....	.....	2	.....	10	.....	.....	0	0	.....	Cav. F. Meucci.
Leghorn	30.04	763.1	30.13	765.3	43.7	6.5	94	NE	8.7	3.9	.....	.....	10	SE	.....	0.016	0.4	.....	Prof. P. Monte.
Siena	28.90	734.0	30.14	765.6	42.8	6.0	69	SSW	3.1	1.4	.....	.....	10	SW	.....	0	0	.....	Prof. L. Toscani.
Urbino	28.55	725.2	30.17	766.2	40.1	4.5	68	N	.....	.....	2	.....	9	.....	.....	0	0	.....	Prof. P. Serpieri.
Pesaro	30.11	764.8	30.16	766.1	41.2	5.1	59	N	6.3	2.8	.....	.....	10	.....	.....	0	0	.....	Prof. Luigi Guidi.
Ancona	30.04	763.1	30.15	765.9	43.9	6.6	81	SW	.....	.....	4	.....	10	.....	.....	0	0	.....	Prof. F. DeBosis.
Grosseto	30.04	763.0	30.15	765.9	48.0	8.9	77	NE	.....	.....	2	.....	7	SE	.....	0	0	.....	Avv. P. Ponticelli.
Rome	29.98	761.6	30.17	766.2	49.5	9.7	62	Calm	0	0	.....	.....	10	.....	.....	0	0	.....	Prof. P. A. Secchi.
Naples, O. U.	29.99	761.8	30.20	767.0	53.2	11.8	42	NE	.....	.....	1	.....	10	NNW	.....	0	0	.....	Prof. L. Palmieri.
Lecce	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. C. De Giorgi.
Cosenza	29.30	744.1	30.21	767.3	47.8	8.8	70	NNW	7.4	3.3	.....	.....	10	.....	.....	0	0	.....	Prof. F. D. Conti.
Cagliari	29.95	760.6	30.14	765.6	60.1	15.6	65	NW	.....	.....	2	.....	6	NW	.....	0	0	.....	Prof. A. Pacinotti.
Riposto, (Sicily)	30.15	765.9	30.16	766.1	57.6	14.2	68	SE	.....	.....	2	.....	5	SE	.....	0	0	.....	Prof. F. Caflero.
Palermo	29.88	759.0	30.14	765.6	60.1	15.6	58	WSW	3.1	1.4	.....	.....	8	.....	.....	0.004	0.1	.....	Prof. G. Cacciatore.
Caltanissetta	28.18	715.7	30.17	766.2	51.6	10.9	75	W	.....	.....	2	.....	3	E	.....	0	0	.....	Prof. A. Pagani.
Syracuse	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. V. Giuliano.
SUB-SERIES.																			
Naples, S. R.	29.63	752.7	30.19	766.8	51.3	10.7	59	WNW	0	0	.....	.....	10	.....	.....	0	0	.....	Prof. F. Brioschi.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,543.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Siena, 348.5 m., or 1,143.3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Tokei (Yeddo)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	The Observatory.
Tokei (Yeddo) University	29.97	761.1	30.07	763.7	43.3	6.3	81	Calm	0	0	.....	.....	10s	.....	.....	0	0	Dark	Prof. P. V. Veeder.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Aguascalientes	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	I. N. Marin, M. D.
Córdoba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	C. Peña, M. D.
Cuernavaca	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	L. Castillo, A. E.
Guadalajara	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. L. Perez.
Guanajuato	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. V. Fernandez.
Leon	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. M. Leal.
Mexico	23.08	586.1	30.18	766.6	40.1	4.5	56	NW	0.1	0.05	.....	1c	1s	.....	.....	0	0	Clear	Central Observatory.
Orizaba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	N. N.
Orizaba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	I. Orozco, M. D.
Pabellon, (Aguascalts)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. V. de Leon, M. E.
Puebla	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. B. Gonzalez.
Toluca	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. C. Velazquez.
Tlacotalpam	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. F. R. Bayly.
San Luis Potosi	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	G. Barroeta, M. D.
Vera-Cruz	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. J. Rossell.
Zacatecas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. A. Bonilla, M. E.
Puebla, (Catholic Institute)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	P. Spina. [M. M. D. D.
Morelia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Tena, F. L. Páramo

NOTE.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,293 m., or 7,522.9 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	29.88	758.9	29.88	758.9	48.2	9.0	.....	SSW	.....	.....	4	.....	.....	.....	.....	0.118	3.0	.....	
Groningen	29.79	756.7	29.85	758.1	.....	.....	.....	SW	.....	.....	2	.....	.....	.....	.....	0	0	.....	
Helder	29.80	756.8	29.80	756.8	44.6	7.0	.....	SSW	.....	.....	4	.....	.....	.....	.....	0.346	8.8	.....	
Hellevoetsluis	.....	.....	29.87	758.6	46.4	8.0	98	SSW	.....	.....	3	.....	.....	.....	.....	.....	.....	.....	
Utrecht	29.83	757.7	29.88	758.9	47.3	8.5	97	SW	.....	.....	3	.....	10	.....	.....	0.028	0.7	Dull	H. v d Brink.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	29.47	748.6	29.53	750.0	39.9	4.4	74	SSE	22.2	9.9	.....	.....	9	.....	.....	0.630	16.0	.....	
Brönö	29.59	751.5	29.63	752.5	25.5	— 3.6	69	E	18	8	.....	.....	3	.....	.....	0	0	.....	
Christiania	29.72	754.8	29.87	758.8	20.5	— 6.4	90	ENE	4	2	.....	.....	10	.....	.....	.....	.....	Snowing	
Tromsö	29.61	752.1	29.65	753.2	28.0	— 2.2	96	SE	9	4	.....	.....	0	.....	.....	0	0	.....	

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	29.90	759.5	30.10	764.4	57.9	14.4	84	E	8.1	3.6	.....	.....	6	.....	.....	0.630	16.0	.....	Dr. J. A. Sampaio.
Campo Major	29.35	745.6	30.40	772.2	50.0	10.0	84	SSW	1.8	0.8	.....	.....	10	.....	.....	0	0	.....	Dr. A. M. R. dos Santos
Funchal, (Madeira)	30.28	769.1	30.35	770.9	65.3	18.5	60	SW	4.3	1.9	.....	.....	9	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.99	761.8	30.35	771.0	54.9	12.7	91	S	12.5	5.6	.....	.....	10	.....	.....	0.024	0.6	.....	The Staff.
Ponta Delgada, (Azores)	30.07	763.7	30.14	765.5	59.7	15.4	85	NE	.....	.....	.....	.....	10	.....	.....	0.374	9.5	.....	

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h.-6 m., p. m.

Naval Series. Vessels.	Sea or swell. Height scale 0-9	Sea or swell. Direction from—		
S. Bartholomew Dias	.....	.....	.....	R, A. T. Pinha, Com'd't.
S. S. India	.....	.....	.....	A. D. Pedroso, Com'd't.
S.S. Mindello	.....	.....	.....	J. F. R. R. Bastos, Com'd't.
S. S. Sado	.....	.....	.....	A. N. P. Sampaio, Com'd't.
S. S. Sá da Bandeira	.....	.....	.....	F. Texeira da Silva, Com'd't.
S. S. Tejo	.....	.....	.....	F. J. Ferreina, dos Amas, Com'

Note.—The originals, except for S. S. Tejo, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.61	752.1	30.06	763.5	22.1	— 5.5	90	SSE	7	3	.....	.....	5c	.....	.....	.....	.....	.....	Astronomical Obs.
Wilna	29.66	753.3	30.10	764.5	26.2	— 3.2	86	Calm	0	0	.....	.....	10	.....	.....	.....	.....	Heavy clouds ..	Astronomical Obs.
Dorpat	29.71	754.6	29.97	761.1	27.7	— 2.4	96	WSW	4	2	.....	.....	6	.....	.....	.....	.....	.....	Prof. Dr. Weihrauch.
St. Petersburg	29.84	757.8	29.85	758.2	28.0	— 2.2	88	SW	11	5	.....	.....	10n	.....	.....	.....	.....	.....	Central Physical Obs.
Knopio	29.49	749.0	29.84	757.8	11.1	—11.6	97	NE	7	3	.....	.....	0	.....	.....	Blank	Blank	.....	Ch. Forsten.
Kieff	29.28	743.7	29.96	760.9	21.9	— 5.6	98	N	7	3	.....	.....	10n	.....	.....	.....	.....	Snowing	Physical Cabinet.
Nikolaiev	29.76	755.8	29.83	757.6	31.8	— 0.1	98	E	9	4	.....	.....	10n	.....	.....	.....	.....	.....	Kurlakof.
Kertch	29.78	756.5	29.80	757.0	37.4	3.0	90	ENE	9	4	.....	.....	10	.....	.....	.....	.....	.....	Lagorio.
Moscow	29.73	755.1	30.34	770.6	7.2	—13.8	92	S	9	4	.....	.....	10s	.....	.....	.....	.....	Snowing	Meteorological Obs.
Lugan	29.85	758.1	30.07	763.8	14.0	—10.0	80	ESE	31	14	.....	.....	10	.....	.....	Blank	Blank	.....	Meteorological Obs.
Archangel	30.00	761.9	30.02	762.4	10.0	—12.2	100	ESE	22	10	.....	.....	10	.....	.....	.....	.....	.....	Ogorodnikof.
Tiflis	28.70	729.0	30.19	766.8	33.3	0.7	94	Calm	0	0	.....	.....	10	.....	.....	.....	.....	.....	Physical Observatory.
Astrakhan	30.54	775.6	30.45	773.5	10 8	—11.8	71	E	22	10	.....	.....	0	.....	.....	.....	.....	.....	Sebastianof.
Kasan	30.52	775.2	30.83	783.0	3.7	—15.7	76	S	2	1	.....	.....	2	.....	.....	.....	.....	.....	Physical Cabinet.
Orenburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Tschernischef.
Ekaterinburg	29.88	758.9	30.96	786.4	— 2.7	—19.3	72	W	2	1	.....	.....	0	.....	.....	.....	.....	.....	Meteorological Obs.
Nukuss	30.29	769.3	30.55	776.0	3.2	—16.0	62	NE	11	5	.....	.....	0	.....	.....	.....	.....	.....	
Kasaly	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Bobrof.
Tashkend	28.76	730.6	30.72	780.4	3.6	—15.8	100	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Michelson.
Barnaul	29.95	760.8	30.56	776.3	—14.3	—25.7	81	SW	0	0	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Yeniseisk	30.32	770.1	30.69	779.5	— 5.6	—20.9	89	SSW	4	2	.....	.....	10	.....	.....	.....	.....	.....	Marks.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Usolzef.
Oorga	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Mossin.
Krotkowo*	30.27	768.9	30.80	782.2	5.2	—14.9	54	SE	2	1	.....	.....	0	.....	.....	.....	.....	.....	Cand. Fatjanow.
Peking, (China)	30.25	768.4	30.39	772.0	42.4	5.8	69	Calm	0	0	.....	.....	9n	.....	.....	.....	.....	.....	Physical Observatory
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Vladivostock	30.25	768.4	30.29	769.4	6.4	—14.2	70	NW	7	3	.....	.....	10n	.....	.....	.....	.....	.....	
Nikolaievsk, on the Amoor	.....	.....	.....	.....	—11.6	—24.2	64	W	7	3	.....	.....	0	.....	.....	.....	.....	.....	

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall; for Krotkowo, the barometer reduced to freezing but not to sea level. The elevation of Tiflis is 409 meters, or 1,341.8 feet, Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, [illegible] m., or 1,[illegible] ft.; Nertchinsk, 592.9? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft. * N. 53° 47′, E. 48° 34′.

SPANISH SERIES.

Furnished by the cooperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Rave, Director
Bilbao, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Manuel de Naveran
Burgos, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Domingo Martin y Perez.
Madrid, Royal Observatory	28.09	713.4	30.42	772.6	41.5	5 3	91	S	0.8	0.34	.....	0	10	.....	.....	0.016	0.4	Covered	The Staff.
Murcia, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Olayo Diaz, Director.
Santiago, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.90	759.4	29.96	761.0	72 3	22.4	55	WNW	13.0	5.8	.....	1ck	3k	NW	W	0	0	Clear	Benito Vines, S. J.
San Fernando, Naval Obs'y	30.31	770.0	30.42	772.6	54.3	12.4	69	NNW	7.3	3.3	.....	2	4	NW	NW	0	0	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de PortoRico, W.I.	.....	.....	29.86	758.5	81.0	27.2	91	S	0	0	.....	2cs	0	Calm	.....	0	0	Clear	Leonardo de Tejeda, Chief of Engineers.

Note.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. m. instead of 8:19 a m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the cöoperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Low'r 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.90	759.5	29.94	760.5	— 0.4	—18.0	.....	N	.....	.....	2	.....	5	.....	.....	0	0	.....	
Umea	29.91	759.6	29.96	760.9	21.9	— 5.6	96	NW	.....	.....	2	.....	10	.....	.....	.....	.....	Snowing	
Hernosand	29.90	759.5	29.95	760.8	8.2	—13.2	92	Calm	.....	.....	0	.....	0	.....	.....	0.071	1.8	.....	
Stockholm	29.77	756.1	29.95	760.6	14.4	— 9.8	93	NW	.....	.....	2	.....	3	.....	.....	0	0	.....	
Wisby	29.88	759.0	29.94	760.5	23.7	— 4.6	86	SSE	.....	.....	2	.....	0	.....	.....	0	0	.....	
Sub-Series.																			
Upsala	29.89	759.2	29.97	761.1	16.5	— 8.6	100	ENE	0	0	.....	.....	10	.....	.....	0.004	0.09	Foggy	Dr. Hildebrandsson.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the cooperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.73	729.7	30.17	766.3	49.5	9.7	79	N	.....	.....	1	.....	1	.....	.....	0.122	3.1	Clear	The Observatory.
Zurich	28.51	724.2	30.19	766.7	44.2	6.8	90	E	.....	.....	1	.....	3	.....	.....	0.118	3.0	Cloudy	The Observatory.

Note.—For Geneva the corresponding departures from the normal values are: Barometer, +2.0 mm.; Thermometer, +8.3 cent.; Relative Humidity, —2 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 479 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the cooperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	30.03	762.8	32.7	0.4	89	NW	14	6.0	.....	.....	10	.....	NNW	.....	.....	Snowing	The Observatory.
Fao, (Persian Gulf)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salonica	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	B. Stefanides.
Valona	.....	.....	30.11	764.7	46.0	7.8	.....	N	.....	.....	2	.....	2	.....	.....	0	0	Slightly cl'dy	A. Bertrand.
Varna	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Imperial Observatory.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.76	755.9	29.88	758.9	55.0	12.8	65	W	.....	.....	3	.....	10n	.....	SW	1.28	32.5	Overcast	Prof. C. V. A. Van Dyck

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the cooperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Hon. J. Ferguson.
Brockville, Ontario	29.63	752 6	29.96	761.0	22	— 5.6	.....	NE	5	2.2	.....	.....	10s	.....	NE	0	0	Cloudy	W. R. Bigg.
*Chatham, N. B	29.88	758.9	29.94	760.5	22	— 5.6	87	N	2	0.9	.....	.....	10s	.....	Calm	0	0	Cloudy	G. A. Blair.
Charlottetown, P. E. Island	29.90	759.4	29.94	760.5	28	— 2.2	91	NE	8	3.6	.....	.....	10n	.....	Calm	0	0	Cloudy	H. J. Cundall, C. E.
Cornwall, Ontario	29.71	754.6	29.91	759.7	21.9	— 5.6	97	NE	.....	.....	2	.....	10s	.....	.....	0	0	Dull	James Smith, M. A.
Dalhousie, N. B	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	H. A. Johnson.
Esquimault, B. C	30.35	770.9	30.39	771.9	32.1	0.1	160	NE	.....	.....	.....	0	0	.....	.....	0	0	Foggy	W. H. Bevis.
*Father Point, Quebec	.....	.....	29.98	761.5	14	—10.0	93	S	8	3.6	.....	.....	10s	.....	Calm	0	0	Cloudy	J. McWilliams.
Fredericton, N. B	29.91	759.7	29.98	761.5	17.0	— 8.3	88	W	2	0.9	.....	.....	10s	.....	.....	0	0	Cloudy	Prof. Harrison.
*Fort Garry, Manitoba	29.35	745.5	30.26	768.6	10	—12.2	92	SW	2	0.9	.....	0	0	.....	.....	0	0	Clear	James Stewart.
Goderich, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	H. J. Strang, M. A.
Granton, Ontario	28.75	730.2	29.90	759.4	26.2	— 3.2	96	NE	.....	.....	1	.....	10n	.....	.....	0	0	Cloudy	James Grant.
*Halifax, N. S	29.77	756.1	29.91	759.7	26	— 3.3	89	E	4	1.8	.....	.....	10n	.....	.....	0	0	Cloudy	F. Allison, M. A.
Hamilton, Ontario	29.55	750.6	29.94	760.5	28.7	— 1.8	83	E	.....	.....	2	10cs	0	W	.....	0	0	Cloudy	Geo. Dickson, M. A
Heart's Content, N. F	29.88	758.9	29.90	759.4	29	— 1.7	88	Calm	.....	.....	0	.....	10	.....	.....	0	0	Overcast	E. Weedon.
*Kingston, Ontario	29.55	750.6	29.91	759.7	25	— 3.9	98	NE	7	3.1	.....	.....	10s	.....	NE	0	0	Cloudy	S. Woods, M. A.
Little Glace Bay, N. S	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	C. H. Rigby.
*Montreal, Quebec	29.74	755.4	29.95	760.7	20	— 6.7	85	NE	14	6.3	.....	.....	10n	.....	Calm	0	0	Cloudy	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.24	742.7	29.97	761.2	23	— 5.0	80	N	7	3.1	.....	.....	10n	.....	N	0	0	Cloudy	Rev. R. Mosley.
Peterboro, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. F. Jeffers, B. A.
Port Dover, Ontario	29.15	740.4	29.87	758.7	29	— 1.7	89	NE	15	6.7	.....	10k	0	NE	.....	0	0	Cloudy	H. Morgan.
Port Hastings, N. S	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Peter Grant.
Port Stanley, Ontario	29.21	741.9	29.89	759.2	28	— 2.2	90	NE	14	6.3	.....	.....	10n	.....	E	0	0	Cloudy	M. Payne.
*Quebec, Quebec	29.66	753.4	30.00	762.0	18	— 7.8	100	Calm	0	0	.....	.....	10n	.....	Calm	0	0	Cloudy	Capt. Ashe, R. N.
*Rockliffe, Ontario	29.51	749.5	30.01	762.2	16	— 8.9	92	N	8	3.6	.....	.....	8s	.....	W	0	0	Cloudy	W. H. McIntyre.
St. John, N. B	29.76	755.9	29.93	760.2	25	— 3.9	87	N	4	1.8	.....	.....	10ks	.....	.....	0	0	Cloudy	G. Murdock, C. E.
*Saugeen, Ontario	29.21	741.9	29.94	760.5	29	— 1.7	92	NE	2	0.9	.....	.....	10ks	.....	N	0	0	Cloudy	K. Stewart.
Stayner, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. J. Cole.
Stratford, Ontario	28.55	725.2	29.90	759.4	25.2	— 3.8	96	NE	7	3.1	.....	.....	10s	.....	.....	0	0	Cloudy	C. J. MacGregor, M. A.
*Sydney, C. B	29.91	759.7	29.94	760.5	29	— 1.7	77	N	4	1.8	.....	.....	10s	.....	NE	0	0	Cloudy	T. C. Hill.
*Toronto, Ontario	29.53	750.0	29.93	760.2	26	— 3.3	88	N	10	4.5	.....	.....	10ks	.....	NE	0	0	Cloudy	Magnetic Observatory
Windsor, N. S	29.78	756.4	29.88	758.9	28.5	— 1.9	83	E	8	3.6	.....	10k	0	.....	.....	0	0	Fair	Prof. John E. Oram.
Woodstock, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Montgomery.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	28.0	— 2.2	.....	NW	.....	.....	.....	Sm'e	Sm'e	.....	.....	0	0	Cloudy	John Delany.

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Byt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain fall or melted snow in the past 24 hours. Inches.	Rain fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.63	752.6	29.87	758.7	25	— 3.9	87	NW	12	5.4			10s		W	0	0	Cloudy	
Alpena, Michigan	29.30	744.2	29.96	761.0	28	— 2.2	88	N	4	1.8			10s		N	0.01	0.3	Cloudy	
Atlantic City, New Jersey	29.40	746.7	29.42	747.3	42	5.6	100	NE	60	26.8			10n		NE			Heavy rain	
Augusta, Georgia	29.28	743.7	29.46	748.3	47	8.3	85	W	13	5.8			10s		W	0.51	13.0	Threatening	
Baltimore, Maryland	29.42	747.3	29.47	748.5	37	2.8	80	NE	18	8.0			10n		NE	0.35	8.9	Heavy rain	
Barnegat, New Jersey	29.45	748.0	29.47	748.5	42	5.6	91	NE	50	22.4			10n		NE	0.11	2.8	Light rain	
Bismarck, Dakota	28.49	723.6	30.34	770.6	4	—15.6	74	W	4	1.8			10s		Calm	Inap.	Inap.	Cloudy	
Boise City, Idaho	27.50	698.5	30.38	771.6	15	— 9.4	73	Calm	0	0		0	2s		Calm	0	0	Fair	
Boston, Massachusetts	29.66	753.4	29.82	757.4	35	1.7	70	NE	22	9.8			10s		NE	0	0	Cloudy	
Brackettville, Texas	29.10	739.1	30.20	767.1	31	— 0.6	68	N	4	1.8		0	0			0	0	Clear	
Breckenridge, Minnesota	29.26	743.2	30.34	770.6	18	— 7.8	92	NW	8	3.6		0	8ks		Calm	Inap.	Inap.	Cloudy	
Brownsville, Texas	30.26	768.6	30.33	770.4	38	3.3	90	N	8	3.6		0	6			0	0	Clear	
Buffalo, New York	29.10	739.1	29.82	757.4	27	— 2.8	94	NE	12	5.4			10s		NE	0	0	Cloudy	
Burkes, Arizona																			
Burlington, Vermont	29.66	753.4	29.93	760.2	23	— 5.0	86	N	6	2.7			10s		Calm	0	0	Cloudy	
Cairo, Illinois	29.38	746.2	29.77	756.1	42	5.6	83	NW	15	6.7			10n		NW	0.70	17.8	Light rain	
Camp Grant, Arizona	25.16	639.0	29.96	761.0	31	— 0.6	58	E	5	2.2			10s		Calm	0	0	Cloudy	
Camp Verde, Arizona	26.86	682.2	30.35	770.9	25	— 3.9	87	NW				0	0			0	0	Clear	
Campo, California	27.40	696.0	29.97	761.2	34	1.1	61	E	4	1.8		0	0			0	0	Clear	
Cape Hatteras, N. Carolina	29.20	741.7	29.21	741.9	53	11.7	79	SW	20	8.9		5k	0	SW		1.52	38.6	Clearing	
Cape Henry, Virginia	29.13	739.9	29.15	740.4	50	10.0	93	NE	15	6.7			10s		NE	1.95	49.5	Cloudy	
Cape Lookout, N. Carolina	29.20	741.7	29.22	742.2	54	12.2	79	W	32	14.3		0	8ks		W	3.27	83.1	Cloudy	
Cape May, New Jersey	29.34	745.2	29.37	746.0	42	5.6	83	NE	48	21.5			10n			0.09	2.3	Heavy rain	
Charleston, South Carolina	29.37	746.0	29.44	747.8	51	10.6	72	W	16	7.2			10s		W	1.83	46.5	Cloudy	
Cheyenne, Wyoming	24.06	611.1	30.00	762.0	1	—17.2	71	NW	9	4.0		0	0			0	0	Clear	
Chicago, Illinois	29.21	741.9	29.91	759.7	37	2.8	71	NE	17	7.6			10s		NE	0	0	Cloudy	
Cincinnati, Ohio	28.95	735.3	29.59	751.6	40	4.4	82	NE	15	6.7			10ks		NE	1.36	34.5	Threatening	
Cleveland, Ohio	29.04	737.6	29.78	756.4	34	1.1	79	NE	19	8.5			10s		Calm	0	0	Cloudy	
Concho, Texas	28.32	719.3	30.02	762.5	27	— 2.8	67	Calm	0	0		4cs	0	NW		0	0	Clear	
Corsicana, Texas	29.71	754.6	30.21	767.3	32	0.0	79	N	12	5.4			10s		Calm	0	0	Cloudy	
Davenport, Iowa	29.37	746.0	30.03	762.7	35	1.7	70	NE	13	5.8			10s		NE	Inap.	Inap.	Cloudy	
Deadwood, Dakota	25.56	649.2			5	—15.1	75	Calm	6	0		0	0			0.07	1.8	Clear	
Denison, Texas	29.38	746.2	30.25	767.6	32	0.0	69	W	14	6.3			10ks		W	0.08	2.0	Cloudy	
Denver, Colorado	24.90	632.4	30.12	765.0	0	—17.9	85	S	8	3.6		0	0			0	0	Clear	
Detroit, Michigan	29.14	740.1	29.83	757.7	32	0.0	79	NE	8	3.6			8s		Calm	0	0	Cloudy	
Dodge City, Kansas	27.63	701.8	30.13	765.3	15	— 9.4	82	N	20	8.9			10s		N	Inap.	Inap.	Cloudy	
Dubuque, Iowa	29.35	745.5	30.07	763.8	34	1.1	70	NE	12	5.4			10ks		NE	0.03	0.8	Cloudy	
Duluth, Minnesota	29.48	748.8	30.20	767.1	28	— 2.2	88	Calm	0	0		0	0			0.17	4.3	Clear	
Eagle Pass, Texas	29.50	749.3	30.30	769.6	33	0.6	79	NW	5	2.2		0	5s		Calm	0	0	Fair	
Eastport, Maine	29.83	757.7	29.90	759.4	25	— 3.9	68	N	13	5.8			10s			0	0	Cloudy	
Erie, Pennsylvania	29.03	737.3	29.76	755.9	32	0.0	89	NE	12	5.4			10s			0	0	Cloudy	
Escanaba, Michigan	29.41	747.0	30.09	764.3	29	— 1.7	77	NW	14	6.3			10s		NW	0	0	Cloudy	
Florence, Arizona	28.39	721.1	29.99	761.7	45	7.2	24	W				0	5s		SW	0	0	Fair	
Fort Bayard, New Mexico	24.10	612.1	30.10	764.5	20	— 6.7	100	SE	2	0.9		0	8s		SE	0.02	0.5	Cloudy	
Fort Craig, New Mexico	25.62	650.7			17	— 8.3	83	NW	1	0.4		5cs	2s	Calm	NW	0	0	Cloudy	
Fort Gibson, Indian Ter.	29.54	750.3	30.11	764.8	31	— 0.6	89	N	17	7.6			10n		N	0.04	1.0	Light snow	
Fort Griffin, Texas	28.98	736.1	30.34	770.6	28	— 2.2	67	NW	4	1.8			10s		Calm	0	0	Cloudy	
Fort St. Michael, Alaska																			
Fort Sill, Indian Territory	29.00	736.6	29.99	761.7	26	— 3.3	88	N	17	7.6			10s		N	Inap.	Inap.	Cloudy	
Galveston, Texas	30.12	765.0	30.17	766.3	38	3.3	71	NW	18	8.0		0	5ks		SW	0	0	Fair	
Grand Haven, Michigan	29.28	743.7	29.95	760.7	33	0.6	79	NE	12	5.4			10s		Calm	0	0	Cloudy	
Indianapolis, Indiana	29.94	735.1	29.72	754.9	38	3.3	80	N	14	6.3			10s		Calm	0.15	3.8	Cloudy	
Indianola, Texas	30.24	768.1	30.27	768.8	35	1.7	80	NW	11	4.9		2k	0	Calm		0	0	Clear	
Jacksboro, Texas	29.09	738.9	30.31	769.9	29	— 1.7	89	NW	20	8.9			10s			Inap.	Inap.	Cloudy	
Jacksonville, Florida	29.59	751.6	29.62	752.3	54	12.2	61	W	14	6.3		5k	0	W		0.33	8.4	Fair	
Keokuk, Iowa	29.35	745.5	29.98	761.5	36	2.2	80	NE	12	5.4			10s		Calm	0.33	8.4	Cloudy	
Key West, Florida	29.86	758.4	29.89	759.2	69.5	20.8	68	W	30	13.4		5c	5s	W	W	0	0	Cloudy	
Kittyhawk, North Carolina	29.14	740.1	29.16	740.7	51	10.6	100	S	10	4.5			10ks		S	1.13	28.7	Cloudy	
Knoxville, Tennessee	28.48	723.4	29.47	748.5	41	5.0	83	NE	4	1.8			10n		Calm	0.33	8.4	Misting	
La Crosse, Wisconsin	29.37	746.0	30.14	765.5	32	0.0	69	N	12	5.4		0	0			0.10	2.5	Clear	
La Mesilla, New Mexico	26.18	665.0	30.33	770.4	28	— 2.2	83	N	1	0.4			10s		W	Inap.	Inap	Cloudy	
Laredo, Texas					35	1.7	80	Calm	0	0		0	0			0	0	Clear	
Leavenworth, Kansas	29.22	742.2	30.10	764.5	31	— 0.6	89	N	14	6.3			10s		Calm	0.19	4.8	Cloudy	
Los Angeles, California	29.74	755.4	30.09	764.3	41	5.0	57	N	4	1.8		0	0			0	0	Clear	
Louisville, Kentucky	29.04	737.6	29.80	751.8	40	4.4	100	N	13	5.8			10n		N	1.60	40.6	Light rain	
Lynchburg, Virginia	28.63	727.2	29.30	744.2	38	3.3	91	NE	2	0.9			10n		Calm	0.45	11.4	Light rain	
Maricopa Wells, Arizona					29	— 1.7	45	N				0	0			0	0	Clear	
Marquette, Michigan	29.36	745.7	30.09	764.3	28	— 2.2	77	W	10	4.5			10s		Calm	0	0	Cloudy	
Mason, Texas	28.58	725.9	30.47	773.9	29	— 1.7	78	N	16	7.2		0	0			0	0	Clear	
Memphis, Tennessee	29.48	748.8	29.81	757.2	40	4.4	100	NW	8	3.6			10n		NW	0.39	9.9	Light rain	
Milwaukee, Wisconsin	29.30	744.2	30.01	762.2	32	0.0	100	N	10	5.4			10n			0.01	0.3	Light snow	
Mobile, Alabama	29.84	757.9	29.88	758.9	44	6.7	75	W	10	4.5			10s		NW	0.02	0.5	Cloudy	
Montgomery, Alabama	29.49	749.0	29.72	754.9	44	6.7	79	W	16	7.2			10s		W	0.23	5.8	Cloudy	
Morgantown, West Virginia	28.50	723.9	29.56	750.8	36	2.2	71	NE	16	7.2			10s		NE	Inap.	Inap.	Cloudy	
Mt. Washington, N. H.	23.46	595.9	29.82	757.4	20	— 6.7	70	E	21	9.4		5ck	2s	N	E	0	0	Fair	
Nashville, Tennessee	29.07	738.4	29.60	751.8	43	6.1	83	NW	7	3.1			10s		NW	0.48	12.2	Cloudy	
New Haven, Connecticut	29.59	751.6	29.71	754.6	32	0.0	79	NE	20	8.9			10s		NE	0	0	Cloudy	
New London, Connecticut	29.66	753.4	29.71	754.6	37	2.8	81	NE	16	7.2		2ck	8s	SW	NE	Inap.	Inap.	Cloudy	
New Orleans, Louisiana	29.88	758.9	29.94	760.5	45	7.2	68	NW	14	6.3			10s		Calm	0	0	Cloudy	
Newport, Rhode Island	29.68	753.9	29.73	755.1	38	3.3	81	NE	8	3.6			10ks		NE	0	0	Threatening	
New York, New York	29.45	748.0	29.63	752.6	34	1.1	79	N	25	11.2			10s		NW	0	0	Cloudy	
Norfolk, Virginia	29.10	739.1	29.16	740.7	49	9.4	100	S	2	0.9			10n;fg		Calm	0.79	20.1	Light rain	
North Platte, Nebraska	27.33	694.2	30.25	768.3	— 2	—18.9	83	NW	10	4.5		0	0			0	0	Clear	
Olympia, Washington Ter.	30.29	769.4	30.33	770.4	33	0.6	100	S	1	0.4			Fog		Calm	0	0	Dense fog	
Omaha, Nebraska	29.04	737.6	30.18	766.6	29	— 1.7	89	N	16	7.2			10s		Calm	0.01	0.3	Cloudy	
Oswego, New York	29.54	750.3	29.87	758.7	30	— 1.1	79	NE	10	4.5			10s		Calm	0	0	Cloudy	
Pembina, Dakota	29.38	746.2	30.28	769.1	13.5	—10.3	91	S	4	1.8		0	0			0	0	Clear	
Philadelphia, Pennsylvania	29.50	749.3	29.55	750.6	34	1.1	90	NE	35	15.6			10n		NE	0.02	0.5	Light rain	
Phœnix, Arizona					32	0.0	79	Calm				5k	0	SW		0	0	Fair	
Pike's Peak, Colorado	17.59	444.5	29.71	754.6	—14	—25.6	73	Calm	0	0		0	0			Inap.	Inap.	Clear	
Pioche, Nevada	24.06	611.1	29.82	757.4	13	—10.6	81	NW	8	3.6		0	0			0	0	Clear	
Pittsburg, Pennsylvania	28.78	731.0	29.59	751.6	36	2.2	70	NE	8	3.6		5c	0	N		0	0	Fair	
Port Huron, Michigan	29.18	741.2	29.86	758.4	33	0.6	89	NE	20	8.9			10s		NE	0	0	Cloudy	
Portland, Maine	29.83	757.7	29.88	758.9	26	— 3.3	75	N	14	6.3		5k	Haze	N		0	0	Fair	
Portland, Oregon	30.33	770.4	30.44	773.2	33	0.6	69	E	6	2.7		0	0			0	0	Clear	
Prescott, Arizona	24.78	629.4	30.04	763.0	9	—12.8	15	N				2ck	0	E		0	0	Fair	
Punta Rassa, Florida	29.82	757.4	29.84	757.9	65	18.3	68	W	24	10.7		0	2ks		W	0	0	Clear	
Red Bluff, California	29.84	757.9	30.21	767.3	38	3.3	63	N	6	2.7		0	0			0	0	Clear	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instru-m'tal error and temperature. Inches.	Barometer. Corrected for instru-m'tal error and temperature. Millimeters	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Rochester, New York	29.21	741.9	29.85	758.2	29	— 1.7	89	NE	11	4.9	.....	.....	10s	.....	Calm	0	0	Cloudy	
Roseburg, Oregon	29.75	755.6	30.35	770.9	31	— 0.6	100	Calm	0	0	.....	.....	10s	.....	Calm	0	0	Cloudy	
Sacramento, California	30.08	764.0	30.16	766.1	33	0.6	89	NE	5	2.2	.....	0	0	.....	.....	0	0	Clear	
St. Louis, Missouri	29.27	743.4	29.85	758.2	37	2.8	100	N	16	7.2	.....	.....	10n	.....	Calm	0.58	14.7	Light rain	
St. Marks, Florida	29.73	755.1	29.75	755.6	46	7.8	68	NW	12	5.4	.....	0	2s	.....	NW	0.04	1.0	Fair	
St. Paul, Minnesota	29.27	743.4	30.14	765.5	30	— 1.1	89	NW	8	1.3	.....	.....	10s	.....	Calm	0.04	1.0	Cloudy.	
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salt Lake City, Utah	25.79	655.0	30.12	765.0	16	— 8.9	83	NW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
San Antonio, Texas	29.57	751.1	30.19	766.8	34	1.1	70	NW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
San Diego, California	30.03	762.7	30.10	764.5	43	6.1	58	NE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Sandusky, Ohio	29.13	739.9	29.82	757.4	33	0.6	89	NE	36	16.1	.....	.....	10ks	.....	NE	0	0	Cloudy	
Sandy Hook, New Jersey	29.59	751.6	29.61	752.1	38	3.3	90	NE	37	16.5	.....	.....	10n	.....	NE	Inap.	Inap.	Light rain	
San Francisco, California	30.09	764.3	30.15	765.8	44	6.7	92	NW	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Santa Fé, New Mexico	23.24	590.3	29.78	756.4	6	—14.4	76	E	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Savannah, Georgia	29.40	746.7	29.49	749.0	52	11.1	73	NW	14	6.3	.....	.....	10ks	.....	W	1.14	29.0	Cloudy	
Shreveport, Louisiana	29.88	758.9	30.11	764.8	37	2.8	81	NW	12	5.4	.....	.....	10s	.....	NW	0.06	1.5	Cloudy	
Smithville, North Carolina	29.26	743.2	29.30	744.2	50	10.0	93	W	12	5.4	.....	.....	10n	.....	W	2.86	72.6	Light rain	
Springfield, Massachusetts	29.59	751.6	29.72	754.9	31	— 0.6	60	N	9	4.0	.....	.....	10s	.....	N	0	0	Cloudy	
Stockton, Texas	27.19	690.6	30.19	766.8	24	— 4.4	87	W	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Thatcher's Island, Mass	29.77	756.1	29.82	757.4	35	1.7	80	NE	24	10.7	.....	.....	10s	.....	NE	0	0	Cloudy	
Toledo, Ohio	29.15	740.4	29.84	757.9	32	0.0	89	N	16	7.2	.....	.....	10s	.....	N	0	0	Cloudy	
Tucson, Arizona	.....	.....	.....	.....	27	— 2.8	44	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Tybee Island, Georgia	29.47	748.5	29.50	749.3	50	10.0	77	W	16	7.2	.....	.....	10ks	.....	W	0.83	21.1	Cloudy	
Umatilla, Oregon	30.30	769.6	.....	.....	26	— 3.3	88	NE	2	0.9	.....	.....	10s	.....	Calm	0	0	Cloudy	
Vicksburg, Mississippi	29.70	754.4	29.97	761.2	42	5.6	66	NW	20	8.9	.....	.....	10s	.....	NW	0.46	11.7	Cloudy	
Virginia City, Montana	24.40	619.8	29.88	758.9	7	—13.9	77	SE	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Visalia, California	29.80	756.9	30.18	766.6	40	4.4	82	E	1	0.4	.....	5ck	2s	Calm	Calm	0	0	Cloudy	
Washington, D. C.	29.30	744.2	29.42	747.3	35	1.7	100	NE	20	8.9	.....	.....	10n	.....	NE	0.69	17.5	Heavy rain	
Wickenburg, Arizona	.....	.....	.....	.....	25	— 3.9	50	S	.....	.....	.....	8ck	0	Calm	.....	0	0	Fair	
Wilmington, N. Carolina	29.20	741.7	29.27	743.4	51	10.6	79	W	15	6.7	.....	.....	10ks	.....	W	2.85	72.4	Cloudy	
Winnemucca, Nevada	25.84	656.3	30.20	767.1	4	—15.6	74	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Wood's Holl, Mass	29.71	754.6	29.76	755.9	40	4.4	73	NE	10	4.5	.....	.....	10s	.....	NE	0	0	Cloudy.	
Yankton, Dakota	29.98	736.1	30.37	771.4	23	— 5.0	86	NW	18	8.0	.....	.....	10s	.....	Calm	Inap.	Inap.	Cloudy	
Yuma, Arizona	29.96	761.0	30.13	765.3	42	5.6	48	N	6	2.7	.....	0	0	.....	.....	0	0	Clear.	
Sub-Series.																			
York Factory, B. A.	30.06	763.5	30.12	765.0	12.5	—10.8	91	W	9	4.0	.....	.....	9s	.....	SW	0.01	0.3	Snowing	J. Fortescue, W. Wood.
Havana, Cuba, W. I.	29.94	760.5	29.96	761.0	73	22.8	81	W	20.4	9.1	.....	4c	4cs	W	.....	0	0	Cloudy	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.05	763.3	30.06	763.5	79	26.1	86	Calm	0	0	.....	8c	2s	.....	N	0	0	.....	James Gall.
Navassa, W. I.	29.83	757.7	29.91	759.7	82	27.8	.....	SE	10	4.5	.....	.....	.....	.....	.....	0	0	Fair	F. M. Everett.
Paramaribo, D. Guiana, S. A.	.....	.....	29.97	761.2	83	28.3	83	E	.....	.....	2	0	3k	.....	.....	0	0	½ cloudy	C. J. Hering.
Batavia, Dutch Guiana, S. A	30.03	762.7	30.04	762.9	86	30.	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0	Clear	Dr. H. Groot.
Medellin, Colombia, S. A.	25.23	640.8	.....	.....	66.0	18.9	80	Calm	.....	.....	0	1k	3ks	.....	.....	0	0	Fair	Thomas Herran.
Honolulu, Oahu, H. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Daniel Smith.
Makawao, Maui, H. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo; for Batavia, the barometer reduced to freezing but not to sea-level. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Deadwood, (?); Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.5 m.; Fort Craig, 4,632 (?) ft., or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.6 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.8 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,080 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,862.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m. Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.. Yankton, 1,278 ft.. or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.83 in.; Santa Fé, 6.64 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation

STATIONS AND VESSELS.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard Mare Island, Cal.	30.10	764.5	39	3.9	38	3.3	91	E	1	0.4	....	.....	0	.....	.....	0	0	.....	.....	Clear	
Navy Yard, Pensacola, Fla.	29.88	758.9	.....	.....	46	7.8	84	NW	16	5.7	....	.....	10	.....	NW	0	0	.....	.....	D. clouds	
Navy Yard, Portsmouth, N.H	29.91	759.7	70	21.1	24	— 4.4	87	NE	.....	.....	1	.....	.....	.....	NW	0	0	.....	.....	Cloudy	
Naval Hospital, Yokohama, Japan	30.02	762.5	51	10.6	43	6.1	83	Calm	.....	.....	0	.....	8ks	.....	W	0	0	.....	.....	Cloudy	
Alliance, Smyrna, Turkey	30.00	762.0	49	9.4	42	5.6	50	N	.....	.....	3	.....	5	.....	NW	.....	.....	.....	.....		
Ashuelot, Shanghai, China	30.01	762.2	60	15.6	47	8.3	100	NE	.....	.....	1	.....	10	.....	.....	.....	.....	.....	.....	Foggy	
Canonicus, New Orleans, La.	29.90	759.4	38	3.3	44	6.7	84	NW	.....	.....	4	.....	.....	.....	.....	.....	.....	.....	.....	Cloudy	
Colorado, New York, N. Y.	29.60	751.8	31	—0.6	34	1.1	79	NNE	4	1.8	.....	.....	1	.....	N	0	0	.....	.....	Threatening	
Despatch, Constantinople, Turkey.	30.12	765.0	67	19.4	36	2.2	90	N	.....	.....	3–5	.....	9	.....	NNE	.....	.....	.....	.....	Snow-squalls	
Essex, S. 14° 15′, W. 1° 20′	29.95	761.5	72	22.2	72	22.2	90	SSE	.....	...	3	.....	9	.....	N&W	.....	.....	Smooth	SSE	D. clouds	
Franklin, Norfolk, Va.	29.24	742.7	62	16.7	54	12.2	74	SE	1	0.4	.....	.....	.....	.....	NW	2.1	53.	.....	.....	Drizzling	
Guard, Lisbon, Portugal	30.22	767.6	63	17.2	57	13.9	87	SSE	.....	.....	2–3	.....	0	.....	.....	.....	.....	.....	.....	Blue sky	
Lackawana, Mare Island, Cal.	30.19	766.8	.....	.....	45	7.2	84	Calm	.....	.....	0	.....	0	.....	.....	.....	.....	.....	.....	Foggy	
Marion, Villefranche, France	30.10	764.5	57	13.9	58	14.4	70	Calm	.....	.....	0	.....	2	.....	.....	.....	.....	Smooth	S	D. clouds	
Michigan, Erie, Pa.	29.28	743.7	50	10.0	34	1.1	71	NE	.....	.....	5	.....	10	.....	NE	.....	.....	.....	.....	Cloudy	
Monocacy, [Bangkok, Siam. E. 7° 24′, en route from Hong-Kong to	29.82	757.4	77	25.0	78	25.6	91	SSE	.....	.....	2	.....	2	.....	.....	0	0	Mod'ate	SSE	Heavy dew	
New Hampshire, Port Royal, S.C.	29.60	751.8	.....	.....	52	11.1	73	W	31	13.9	.....	.....	8	.....	E	0.07	1.8	.....	.....	Squally	
Omaha, Valparaiso, Chili	30.14	765.5	65	18.3	64	17.8	78	Calm	0	0	.....	.....	0	.....	.....	0	0	.....	.....	Pleasant	
Onward, Callao, Peru	30.02†	762.5†	76	24.4	74	23.3	90	ESE	.....	.....	2	.....	10	.....	.....	.....	.....	Long	W	D. clouds	
Ossipee, Norfolk, Va.	29.21	741.9	53	11.7	54	12.2	93	SSE	.....	.....	1	.....	10	.....	SSE	.....	.....	.....	.....	Drizzling	
Palos, Shanghai, China	29.99	761.7	56	13.3	48	8.9	100	N	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	Dense fog	
Plymouth. N. 17° 00′, W. 82° 04′	30.02	762.5	81	27.2	80	26.7	91	N	.....	.....	5	.....	2	.....	N	.....	.....	Smooth	N	Clear	
Powhatan, Norfolk, Va.	.....	.....	.....	.....	53	11.7	93	SE	3.6	1.6	....	.....	10	.....	.....	1.57	39.9	.....	.....	Overcast	
Ranger, Shanghai, China	30.09	764.3	.....	.....	52.5	11.4	93	NNW	.....	.....	1	.....	10	.....	Calm	.....	.....	.....	.....	Foggy	
Rio Bravo, Brownsville, Texas	30.14	765.5	.....	.....	39	3.9	82	NW	.....	.....	3	.....	6	.....	W	.....	.....	.....	.....	D. clouds	
Santee, Annapolis, Md.	29.49	749.0	65	18.3	36	2.2	100	NE	.....	.....	8	.....	10	.....	NE	0.61	15.5	.....	.....	Rainy	
Sara toga, Norfolk, Va.	.....	.....	.....	.....	40	4.4	??	SE	.....	.....	2	.....	10	.....	NE	Heavy	Heavy	.....	.....	Overcast	
St. Louis, League Island, Pa	29.46	748.3	37	2.8	42	5.6	83	NE	17	7.6	.....	.....	10	.....	NE	0.11	2.8	.....	.....	Raining	
Swatara, Norfolk, Va.	29.26	743.2	.. ....	.....	63	17.2	72	Var.	.....	.....	0–1	.....	10	.....	N&E	.....	.....	.....	.....	Misty	
Tennessee, Shanghai, China	29.99	761.7	75	23.9	51	10.6	86	NNW	.....	.....	2	.....	Fog	.....	.....	0.04	1.0	.....	.....	Drizzling	
Trenton, N. 36° 25, E. 21° 00′	30.22	767.6	.....	.....	54	12.2	55	NNW	24	10.7	.....	.....	2	.....	N&W	0.5	13.	Mod'ate	N&W	D. clouds	
Vandalia, Valetta, Malta	30.29	769.4	64	17.8	61	16.1	77	W	.....	.....	2	.....	7	.....	W	.....	.....	.....	.....	D. clouds	
Wabash, Boston, Mass.	29.82	757.4	47	8.3	35	1.7	80	NE	10	4 5	.....	.....	10	.....	Calm	0	0	.....	.....	D. clouds	
Wyoming, Washington, D. C.	30.26	768.6	....	.....	37	2.8	.....	NE	.....	.....	3–6	.....	10	.....	.....	.....	.....	.....	.....	Raining	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from: they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. The position given for the Plymouth is that at noon, local time, instead of that at 7:35 a. m., Washington time.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	TRUE COURSE TOWARD—	HOURLY RATE IN KNOTS.	BAROMETER REDUCED TO SEA-LEVEL.		TEMPERATURE OF THE AIR.		RELATIVE HUMIDITY.	WIND.				CLOUDS.				SEA-SWELL.		WEATHER.	OBSERVER.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	CHARACTER.	DIRECTION FROM—		
S. S. Alaska																			
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama, N. 40°, W. 124° 25′			30.12*	765.0*	54	12.2		NNE			2		0			Mod'ate	WSW	Fine	Capt. Seabury.
S. S. City of Peking, N. 33° 49′, E. 137° 23′			30.15*	765.8*	54	12.2	87	NW			3		4		NW	Smooth		Hazy	Lt. Z. L. Tanner, U.S.N.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio, N. 35° 26′, E. 139° 39′			30.08	764.0	53	11.7		Calm			0		10					Overcast	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. CostaRica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. *Aneroid.

PACIFIC MAIL S. S. CO. MARINE SERIES.

Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents.

S. S. Alaska																			
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama, N. 40°, W. 124° 25′			30.12*	765.0*	54	12.2		NNE			2		0			Mod'ate	WSW	Fine	Capt. Seabury.
S. S. City of Peking, N. 33° 49′, E. 137° 23′			30.15*	765.8*	54	12.2	87	NW			3		4		NW	Smooth		Hazy	Lt. Z. L. Tanner, U.S.N.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio, N. 35° 26′, E. 139° 39′			30.08	764.0	53	11.7		Calm			0		10					Overcast	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. CostaRica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. *Aneroid.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.

S. S. Belgic, N. 42° 59′, W. 175° 30′			29.38*	746.2*				SW			6		Heavy		S	Heavy	SW	Squally	Capt. John Metcalf.
S. S. Gaelic, Hong-Kong, China			29.98†	761.5†	66	18.9	94	SSE			3		Fog					Foggy	Capt. W. H. Kidley
S. S. Oceanic, N. 30° 15′, W. 177° 14′			29.74	755.4	70	21.1	100	S			6		5		SE	Heavy	NW&SE	Raining	Capt. H. Parsell.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. * Corrected for temperature and elevation; instrumental error not known. †Aneroid.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig																			Capt. Undütsch.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds.

UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Lo'wr	Upper.	Lower.	Character	Direction From—		
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second	0—10.	0—10.	0—10.	From—	From—				
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, N. 51° 22′, W. 9° 34′			29.62*	752.3*	52	11.1	??	WNW			2		9			Heavy	SSW	Overcast	Captain Sargent.
S. S. Ohio, N. 44° 46′, W. 54° 14′			29.88	758.9	37.5	3.1	86	WSW			2		10?		WSW	Calm		Clear?	Captain Morrison.
S. S. Pennsylvania																			Captain Harris.
RED STAR LINE MARINE SERIES.																			
Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.																			
S. S. Nederland																			Capt. Randle.
S. S. Switzerland																			Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.
ALLAN LINE MARINE SERIES.																			
Furnished by the coöperation of A. Schumacher, & Co., Agents.																			
S. S. Hibernian																			
S. S. Scandinavian, N. 54° 11′, W. 26° 20′			29.77	756.1	37	2.8		WSW			5		5		WSW	Long	SSW	D. clouds	Capt. W. Richardson.
MARINE SERIES. (Miscellaneous.)																			
Furnished by the coöperation of the Observer named.																			
Schooner Addie Fuller, Off Falmouth, Mass			29.74	755.4	39	3.9	91	ENE	22	9.8			10d		ENE			Threatening	Capt. James Jorgensen.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. * Aneroid

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

NOTE.—The originals for the schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer, U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON DECEMBER 31, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.

1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.

1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Barometer: Corrected for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours	.....	.....	30.36	771.1	63.0	17.2	63	NNW	.....	.....	1	.....	1	.....	.....	0	0	Very fair	Michel.
Algiers	.....	.....	30.23	767.9	60.8	16.0	76	SW	.....	.....	1	.....	5	.....	.....	0	0	Cloudy	Peter.
La Calle	.....	.....	30.18	766.6	58.8	14.9	70	W	.....	.....	2	.....	5	.....	.....	0	0	Cloudy	Fleury.
Tunis	.....	.....	30.19	766.7	60.6	15.9	67	W	.....	.....	3	.....	9	.....	.....	0	0	Covered	Jacques.
Sfax	.....	.....	30.16	766.0	60.8	16.0	.....	W	.....	.....	3	.....	4	.....	.....	0	0	Cloudy	Husson.
Saida	.....	.....	30.30	769.5	53.6	12.0	87	ESE	.....	.....	1	.....	2	.....	.....	0	0	Fair	Millot.
Tebessa	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Bassières.
Geriville	.....	.....	30.32	770.2	41.5	5.3	97	NNW	.....	.....	2	.....	5	.....	.....	0	0	Cloudy	Lemaillot.
Laghouat	.....	.....	30.22	767.5	64.4	18.0	28	NW	.....	.....	1	.....	2	.....	.....	0	0	Fair	Guyot.
Biskra	.....	.....	30.24	768.1	68.3	17.4	38	Calm	.....	.....	0	.....	0	.....	.....	0	0	Clear	Kuntz.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m.; or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

STATIONS.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Barometer: Corrected for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Agram	29.52	749.8	30.10	764.5	31.6	— 0.2	85	NE	.....	.....	3	.....	2	.....	.....	0	0	.....	Prof. Ivan Stozir
Cracow, I. R. Observatory	29.33	745.0	30.15	765.8	23.7	— 4.6	100	NE	.....	.....	1	.....	10	.....	.....	0	0	.....	Dr. Wierzbiski.
Eperies	29.25	742.9	30.20	767.0	21.4	— 5.9	87	Calm	.....	.....	0	.....	10	.....	.....	0	0	.....	Julius Mikolik.
Gratz	28.77	730.8	30.09	764.3	29.3	— 1.5	88	S	.....	.....	2	.....	3	.....	.....	0	0	.....	Andreas Rospini.
Hermannstadt	28.71	729.3	30.33	770.3	2.3	—16.5	95	SSE	.....	.....	1	.....	0	.....	.....	0	0	.....	Prof. Reissenberger.
Kremsmünster	28.60	726.4	30.00	761.9	33.4	0.8	96	Calm	.....	.....	0	.....	10	.....	.....	0.094	2.4	.....	Prof. C. Wagner.
Lemberg	29.15	740.3	30.23	767.8	12.4	—10.9	93	NW	.....	.....	1	.....	0	.....	.....	6	0	.....	Dr. T. Staneckl.
Pola	29.97	761.2	30.09	764.2	46.6	8.1	77	E	.....	.....	2	.....	10s	.....	.....	0	0	.....	I.R.Hydrographic Office.
Szathmar	29.76	755.9	30.27	768.8	18.1	— 7.7	81	E	.....	.....	3	.....	0	.....	.....	0	0	.....	Johann Tamas, S. J.
Szegedin	29.88	759.0	30.18	766.6	25.9	— 3.4	95	Calm	.....	.....	0	.....	10	.....	.....	0	0	.....	Karl Stancel.
Trieste	30.02	762.5	30.12	765.1	44.2	6.8	80	Calm	.....	.....	0	.....	10	.....	.....	0	0	Foggy	P. Busin.
Vienna	29.34	745.2	30.08	764.1	25.0	— 3.9	98	Calm	.....	.....	0	.....	10	.....	.....	0.059	1.5	Foggy	I. R. Central Met.Obs'y.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

STATIONS.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Barometer: Corrected for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Arlon	.....	.....	.....	.....	.....	.....	.....	W	.....	.....	2	.....	10	.....	.....	0.004	0.1	.....	Prof. M. Passau.
Brussels	29.78	756.4	29.98	761.6	44.2	6.8	70	WNW	.....	.....	6	.....	10	.....	WNW	0	0	.....	Royal Observatory.
Furnes	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.142	3.6	.....	M. E. de Cae.
Maeseyck	29.72	755.0	29.85	758.3	42.1	5.6	89	SW	.....	.....	8	.....	10	.....	.....	0.098	2.5	Raining	M. Pierrot.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

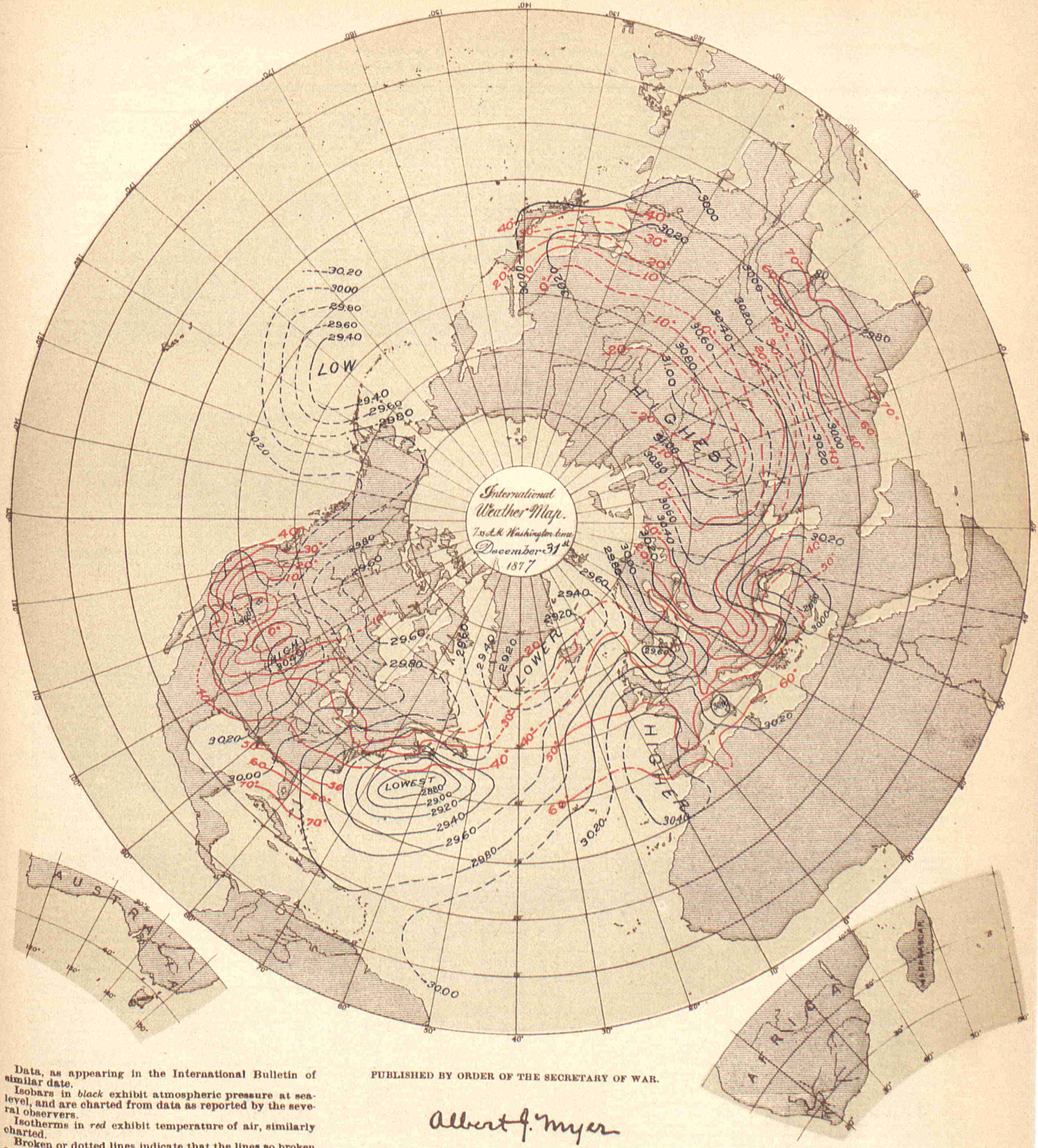
Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	29.90	759.4	30.01	762.2	40.0	4.4	.....	WNW	4	1.8	.....	.....	0	.....	.....	0	0	Blue sky.....	W. Boswell.
Ardrossan	30.06	763.5	30.08	764.0	46	7.8	.....	WNW	.....	.....	2	.....	6	.....	.....	.....	.....	D. clouds.....	William McNeil.
Armagh, Observatory	.....	.....	30.12	765.0	40.3	4.6	.....	SW	12	5.4	.....	.....	3	.....	.....	.....	.....	D. clouds.....	S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)	.....	.....	30.17	766.3	43.2	6.2	.....	W	25	11.2	.....	.....	1	.....	.....	.....	.....	Blue sky.....	John Hartnup.
Birr Castle, (Parsonstown)	.....	.....	30.26	768.6	43.0	6.1	.....	W	.....	.....	1	.....	8	.....	.....	.....	.....	D. clouds.....	J. Dreyer.
Bradford, Yorkshire	29.69	754.1	30.09	764.3	41.9	5.5	.....	N	.....	.....	3	.....	0	.....	.....	0.73	18.5	Blue sky.....	J. McLandsborough.
Bridgetown, (Barbados)	29.88	758.9	29.91	759.7	82.5	28.1	.....	NE	.....	.....	1	.....	2	.....	.....	.....	.....	D. clouds.....	Pvt. G. W. Roberts, A. [H.C.
Cambridge, Observatory	.....	.....	30.17	766.3	42.0	5.6	.....	WNW	.....	.....	1	.....	1	.....	.....	.....	.....	D. clouds.....	H. Todd.
Cardington	.....	.....	30.17	766.3	43.0	6.1	.....	NW	.....	.....	2	.....	1	.....	.....	.....	.....	Blue sky.....	John McLaren.
Chatham, School M. E	29.98	761.5	30.12	765.0	44.2	6.8	.....	W	.....	.....	3	.....	1	.....	.....	.....	.....	Blue sky.....	Lt. W. G. Morris, R. E.
Dartmoor	28.82	732.0	30.34	770.6	41.6	5.3	.....	NW	.....	.....	2	.....	5	.....	.....	.....	.....	D. clouds.....	Alexander Watt.
Davos Platz (Switzerland)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Francis Redford, M. A.
Donaghadee	30.13	765.3	30.16	766.1	41	5.0	.....	WSW	.....	.....	3	.....	2	.....	.....	.....	.....	Blue sky.....	J. Mac Gowan.
Dover	30.08	764.0	30.11	764.8	44	6.7	.....	WNW	.....	.....	4	.....	5	.....	.....	.....	.....	Misty.....	J. Costello.
Eccles, (near Manchester)	.....	.....	30.17	766.3	44.7	7.1	.....	NW	3.6	1.6	.....	.....	5	.....	.....	.....	.....	D. clouds.....	Thomas Mackereth.
Falmouth, Observatory	29.12*	739.6*	29.34*	745.2*	47.8	8.8	.....	WNW	.....	.....	2	.....	4	.....	.....	.....	.....	D. clouds.....	The Staff.
Fort Napier, (Natal)	27.61	701.3	29.80	756.9	82.4	28.0	.....	E	.....	.....	2	.....	10	.....	.....	.....	.....	Overcast.....	Pvt. G. Salmon, A.H. C
Free Town, (Sierra Leone)	.....	.....	29.88	758.9	86.0	30.0	.....	NW	.....	.....	1	.....	0	.....	.....	.....	.....	Blue sky.....	.....
Galway, Queen's College	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	30.26	768.6	30.31	769.9	61.0	16.1	.....	NW	.....	.....	3	.....	4	.....	.....	.....	.....	D. clouds.....	Cornl. C. Aitken, A.H.C.
Glasgow, Observatory	29.86	758.4	30.07	763.8	41.3	5.2	.....	W	.....	.....	1	.....	.....	.....	.....	.....	.....	Blue sky.....	D. G. Maclean.
Great Yarmouth	29.95	760.7	29.96	761.0	42	5.6	.....	NW	.....	.....	6	.....	3	.....	.....	.....	.....	Squally.....	G. T. Watson.
Greenwich, Royal Obs'y	29.97	761.2	30.15	765.8	43.7	6.5	.....	NW	.....	.....	4	.....	0	.....	.....	.....	.....	Blue sky.....	The Staff, for G. B. Airy.
Guernsey	30.07	763.8	30.30	769.6	47.5	8.6	.....	NW	.....	.....	4	.....	0	.....	.....	.....	.....	Blue sky.....	Dr. S. E. Hoskins, F.R.S.
Helston	.....	.....	30.32	770.1	50	10.0	.....	NW	.....	.....	2	.....	2	.....	.....	Blank	Blank	D. clouds.....	M. P. Moyle.
Holyhead	30.18	766.6	30.23	767.8	45	7.2	.....	WNW	.....	.....	4	.....	1	.....	.....	0.18	4.6	Blue sky.....	John Tilston.
Jersey	30.03	762.7	30.33	770.4	48.0	8.9	.....	WNW	.....	.....	5	.....	1	.....	.....	Blank	Blank	Blue sky.....	J. Fisher.
Kew, Observatory	.....	.....	30.16	766.1	45.0	7.2	.....	WNW	18	8.0	.....	.....	1	.....	.....	.....	.....	Blue sky.....	The Staff.
Kingstown	30.20	767.1	30.23	767.8	44	6.7	.....	W	.....	.....	4	.....	1	.....	.....	.....	.....	Blue sky.....	George Mitchell.
Leicester, Museum	.....	.....	30.14	765.5	44.0	6.7	.....	NW	.....	.....	4	.....	.....	.....	.....	.....	.....	Blue sky.....	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	30.06	763.5	30.14	765.5	60.0	15.6	.....	NW	.....	.....	3	.....	6	.....	.....	.....	.....	D. clouds.....	Sgt. Fred. Travis, A. H. [C.
Nairn	29.83	757.7	29.92	760.0	39	3.9	.....	NW	.....	.....	1	.....	2	.....	.....	.....	.....	¼ clouded.....	W. B. Penny.
Nassau, (Bahamas)	.....	.....	29.84	757.9	65.5	18.6	.....	NW	.....	.....	8	.....	8	.....	.....	.....	.....	D. clouds.....	C. S. Duncombe.
Nottingham, Observatory	29.99	761.7	30.18	766.6	45.0	7.2	.....	NW	.....	.....	4	.....	0	.....	.....	0.033	0.84	Blue sky.....	E. J. Lowe, F. R. S
Oscott, St. Mary's College	29.63	752.6	30.17	766.3	42.8	6.0	.....	WNW	.....	.....	5–6	.....	6	.....	.....	.....	.....	D. clouds.....	Rev. Stephen Whitty
Oxford, Radcliffe Obs'y	.....	.....	30.19	766.8	44	6.7	.....	WNW	.....	.....	2	.....	0	.....	.....	.....	.....	Blue sky.....	Mr. Lucas.
Plymouth	30.21	767.3	30.29	769.4	47.7	8.7	.....	NW	.....	.....	3	.....	0	.....	.....	.....	.....	Blue sky.....	John Merrifield.
Roche's Point	30.15	765.8	30.21	767.3	45	7.2	.....	WNW	.....	.....	3	.....	5	.....	.....	.....	.....	½ clouded.....	W. Kennedy.
Saint Ann's Head	.....	.....	30.27	768.8	47	8.3	.....	WNW	.....	.....	2	.....	2	.....	.....	.....	.....	Blue sky.....	John C. Walker.
Sandwick Manse, (Orkneys.)	.....	.....	29.89	759.2	42.9	6.1	.....	W	28	12.5	.....	.....	5	.....	.....	.....	.....	D. clouds.....	Rev. C. Clouston, LL. D
Scutari, Cemetery, (Turkey)	.....	.....	30.20	767.1	36.6	2.6	.....	N	.....	.....	1	.....	4	.....	.....	.....	.....	D. clouds.....	Sergt. W. H. Lyne.
Sheffield	29.84	757.9	30.12	765.0	43.2	6.2	.....	W	.....	.....	2	.....	1	.....	.....	0	0	Blue sky.....	W. F. Cooper.
Silloth Rectory	30.08	764.0	30.11	764.8	44.2	6.8	81	W	.....	.....	2	.....	2	.....	.....	0	0	D. clouds.....	Rev. F. Redford, M. A.
Stonyhurst, Observatory	.....	.....	.....	.....	42.0	5.6	.....	NW	.....	.....	3	.....	10	.....	.....	.....	.....	Overcast.....	Rev. S. J. Perry.
Stornoway, Lews C. (Hebr.)	.....	.....	29.88	758.9	39	3.9	.....	WSW	.....	.....	2	.....	5	.....	.....	.....	.....	D. clouds.....	John Smith.
Stratfield Turgiss	29.96	761.0	30.19	766.8	45.0	7.2	.....	NW	.....	.....	2	.....	0	.....	.....	.....	.....	Blue sky.....	Rev. C. H. Griffith, F.M.S
Thurso	.....	.....	29.91	759.7	40	4.4	.....	SW	.....	.....	2	.....	2	.....	.....	.....	.....	Blue sky.....	John Trotter.
Truro, Royal Institution	.....	.....	30.32	770.1	53	11.7	.....	NW	.....	.....	4	.....	3	.....	.....	.....	.....	D. clouds.....	W. Newcombe.
Valencia, Observatory	.....	.....	30.28	769.1	47.8	8.8	.....	WSW	19	8.5	.....	.....	7	.....	.....	.....	.....	D. clouds.....	The Staff.
Sub-Series.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Calf of Man, (Isle of Man)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Henry Mercer.
Cape Good Hope, Obs'y	29.89	759.2	29.93	760.2	87.9	31.1	36	WNW	17	7.6	.....	7	7	.....	.....	.....	.....	.....	The Staff, for E. J. Stone.
Hobart Town, (Tasmania)	.....	.....	30.02	762,5	60.0	15.6	77	S	.....	.....	3	.....	10n	.....	.....	.....	.....	Raining.....	Francis Abbott, F.R.A.S.
Leith, Restalrig Park	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Andrew Gibb.
Mauritius, Observatory	29.76	755.9	29.94	760.5	81.8	27.7	68	ENE	18.0	8.0	.....	0	4	.....	E	0.38	9.6	Squally.....	C. Meldrum.
Melbourne, Observatory	29.95	760.7	30.04	763.0	59.0	15.0	76	SE	8	3.6	.....	.....	7	.....	.....	0.01	0.3	Fine.....	R. L. J. Ellery.
Monach L't-house, (Hebrides)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Youngclause.
North Unst, (Shetland Is.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Robert Burnet.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,1057 ft., or 1,556.07 m.; Fort Napier, 2,200 ft., or 670.6 m. * Evidently 1 inch or 25.4 mm. too low.

Marine Series. Vessels.	Sea or swell. Height scale 0—9	Sea or swell. Direction from—	Weather.	Observer.
S. S. Algeria	.....	.....	.....	Capt. W. Watson.
S. S. Batavia	.....	.....	.....	Capt. J. E. Monland.
Ship Camperdown	.....	.....	.....	Capt. A. T. Miller.
Brig Catherine	.....	.....	.....	Capt. Adam Smith.
Barque Celeste	.....	.....	.....	Capt. D. F. McKechnie
S. S. Hibernia	.....	.....	.....	Capt. W. R. Cato
Barque Maroon	.....	.....	.....	Capt. A. T. Brown.
Ship Mikado	.....	.....	.....	Capt. C. C. Prehn.
Royal Alice, N. 49° 35′, W. 24° 40′	5	SW	Raining.....	Capt. E. M. Hughes.
S. S. Seine	.....	.....	.....	Capt. H. Manning.
Barque Sorata	.....	.....	.....	Capt. Jas. J. Price.
Schooner Traveller	.....	.....	.....	Capt. Alex Simpson
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in fe weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST BOSTON

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	OBSERVER.
San José	26.26	667.0			65.8	18.8	88	SE			2		10n			2.6*	66.*		Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation. *Rain-fall in 2 days.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.74	755.3	29.78	756.5	37.0	2.8	98	S			2		10					Raining	
Fanöe	29.56	750.7	29.58	751.2	36.9	2.7	100	ESE			4		10					Raining	
Godthaab, (Greenland)	29.22	742.3	29.27	743 4	11.3	—11.5	97	NNW			6		10					Snowing	
Stykkisholm. (Iceland)	29.17	740.8	29.21	741.9	24.6	— 4.1	96	SW			4		8					Snowing	
Thorshavn, (Faröe)	29.60	751.7	29.63	752.6	42.3	5.7	80	SW			2		7						
Vestervig	29.46	748.3	29.63	752.6	36.0	2.2	98	SE			6		10					Raining	

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

Alençon, Normal School	29.72	754.9	30.27	768.9	48.2	9	85	N			3		1		SW	0	0	Clear	Collignon, Director.
Amiens, Normal School																			Bonvarne, Director.
Avignon, Normal School	30.02	762.6	30.10	764.6	48.2	9	94	N			2		10		N	0.138	3.5	Raining	Mr. Giraud, Director
Bar-sur-Seine	29.61	752.1	30.19	766.8	44.8	7.1	77	N			3		10		N	0	0	Covered	C. Saillard.
Beaumette Obs'y (Angers)	30.02	762.4	30.18	766.6	48.6	9.2	65	NW	4.0	1.8					NW	0.406	10.3		Albert Cheux.
Beauvais	29.90	759.4	30.19	766.8	45.1	7.3	60	WNW			4		5		NW	0.010	0.25	Cloudy	Normal School.
Besançon	29.29	744.0	30.21	767.4	43.9	6.6	88	S			2		8		SW	0.43	11.	Very cloudy	Normal School.
Bourg-en-Bresse	29.32	744.6	30.24	768.0	42.3	5.7	94	N			2		10n		S	0.28	7.	Covered	Normal School.
Bourges, Normal School	29.71	754.6	30.28	769.0	46.6	8.1	97	SW			2		2		SW	0.413	10.5	Slightly cl'dy	A. Wagner, Director.
Brest, Naval Observatory	30.09	764.3	30.31	769.9	52.0	11.1	72	NW			2		3k		NW	0.226	5.75		The Staff.
Carcassonne, Normal School	29.89	759.2	30.32	770.1	50.0	10	89	N			4		5		NW	0	0	Cloudy	Vateau, Director.
Caen																			Normal School.
Chartres, Normal School	29.30	744.3	29.87	758.8	47.7	8.7		SW			4		4		W	0	0		Lequin, Director.
Châlons-sur-Marne, N. Sch'l	29.59	751.5	29.91	759.6	50.4	10.2	56	NW			6		10n		NW	0.189	4.8	Covered	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.87	733.4	30.26	768.5	49.3	9.6	42	NW			2		10		NW	0.016	0.4	Covered	Alluard, Director.
Commercy, Normal School	29.22	742.2	30.12	765.1	44.2	6.8	63	W			4		5		W	0.311	7.9	Cloudy	Dr. Goulet, Director.
Commune de Gréasque*	28.94	735.0	30.08	764.0	46.9	8.3	83	NE			1		10		NE	0.12	3.	Covered	M. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	30.10	764.6	30.34	770.6	49.3	9.6	74	NW			1		0			0.811	20.6	Clear	Mouillot, Director.
Le Mans, Normal School	29.99	761.8	30.31	769.8	46.4	8	72	N			2		5		N	0.594	15.1	Cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.27	743.4	30.21	767.4	43.3	6.3	91	SW			1		5		SE	0.567	14.40	Sprinkling	Voudez, Director.
Lorient, Naval Observatory	30.30	769.6	30.40	772.1	52.2	11.2	67	W			3		5		N	0	0	½ Covered	T. Carré, Director.
Mâcon, Normal School	29.48	748.9	30.20	767.0	46.0	7.8	91	WSW			2		5		N	0.283	7.2	Cloudy	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	28.96	735.5	30.03	762.7	42.4	5.8	94	W			2		10		SE	0	0	Covered	Normal School.
Nismes, Normal School	29.93	760.3	30.14	765.6	52.2	11.2	80	E			1		10		S	0.128	3.25	Covered	Boyer, Director.
Orleans, Normal School	29.68	753.9	30.08	763.9	45.0	7.2	94	W			2		2		W	0	0	Slightly cl'dy	Bernard, Director.
Paris, Observatory	29.96	761.0	30.21	767.2	46.6	8.1	57	WNW			2		8			0.262	6.66	Very cloudy	National Observatory.
Privas	29.06	738.0	30.14	765.5	50.0	10	76	NW			4		10		NW	0	0	Covered	Normal School
Rochefort, Naval Obs'y	30.36	771.2	30.39	772.0	51.8	11.0	85	WNW			3		0			0	0	Clear	Lt. Decante, Director.
Rouen, Normal School	30.15	765.8	30.24	768.0	48.0	8.9	54	NW			6		2		NW	0.236	6.0	Slightly cl'dy	F. Lucard, Director.
Tarbes, Normal School	28.96	735.5	30.06	763.5	47.1	8.4	78	WSW			2		2		E	0	0	Slightly cl'dy	T. Hugues, Director.
Villefranche	29.50	749.4	30.24	768.1	45.9	7.7	95	NW			2		8		N	0.244	6.2	Very cloudy	Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.78	756.3	29.80	757.0	78.8	26										0	0		L'Abbé Marchési.
Marseilles, Observatory			30.04	763.0	50.9	10.5	82	ENE			2		10			0.055	1.40	Cloudy	The Staff.
Mont-Louis	24.96	634.0	30.28	769.0	34.3	1.3	39	N	9.3	4.17			2		WNW	0.008	0.2		Mr. Falgnère.
Nice			30.00	762.0	53.6	12.0	71	N			2		4			0	0	Cloudy	Dr. A. Niepce.
Paris, Montsouris Obs'y	29.91	759.6	30.18	766.6	46.0	7.8	61	NW			3–4		6		NW	0.224	5.7		Marié Davy, Director.
Perpignan			30.21	767.4	54.0	12.2	47	NW	37.3	16.66			5		NW	0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.																			M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.63	574.9			23.4	— 4.8		N			2		5			0.480	12.2		Gen'l de Nansouty.
Saint Maur, (near Paris)	30.03	762.8	30.20	767.0	46.8	8.2	61	NW			3		7		NW	0.154	3.9		E. Renou.
Toulouse, Observatory	29.65	753.2	30.39	771.8	48.0	8.9	70	NW			6		5			0	0		The Staff.
Tours	30.10	764.4	30.29	769.4	48.2	9.0	69	NW			2		5		NW	0.366	9.3		C. Marquet.
Versailles, (near Paris)			30.20	767.0	47.1	8.4	57	WNW			4		6			0.250	6.35	Fair	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	29.99	761.8	30.02	762.4	42.6	5.9	94	NW	3.6	1.6			10n			0.299	7.6	Raining	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published. At Mirecourt and Rochefort the cloud directions are apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,588.40 m., or 5,294.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10	Clouds. Amount. Up'er 0-10	Clouds. Amount. Low'r 0-10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg																			
Berlin	29.65	753.1	29.83	757.7	40.3	4.6	87	S			1		10			0.009	0.23		Prof. Dr. Hoh.
Breslau	29.48	748.8	30.01	762.3	35.4	1.9	86	SE			5		2			0.104	2.64		Prof. Arndt.
Carlsruhe	29.57	751.1	30.01	762.2	43.2	6.2	82	SW			3		10			0	0		Royal University Obs'y
Cassel	29.19	741.5	29.80	756.8	42.1	5.6	83	SSW			2		10	WSW		0.165	4.20		Albert Senz.
Crefeld	29.59	751.6	29.75	755.7	43.3	6.3	78	W			7		10			0.47	12.	Rainy	Dr. H. Möhl.
Emden	29.48	748.9	29.52	749.8	40.1	4.5	94	S			2		10			0.20	5.		Director Lose.
Frankfort on the Main	29.56	750.9	29.94	760.4	41.7	5.4		SSW			2		10			0.335	8.5		Prof. Prestel.
Friedrichshafen	29.04?	737.6?	30.05	763.2	40.3	4.6	98	SW			7		10	WNW		0.102	2.6		Physical Society.
Hamburg	29.54	750.2	29.61	752.0	42.4	5.8	97	SE			4		10			0.335	8.5	Raining	M. Wilhelm.
Kiel	29.56	750.8	29.58	751.2	40.6	4.8	96	SW			1		10			0.197	4.99		Captain F. Hegemann.
Königsberg, (Prussia)	30.14	765.5	30.22	767.6	12.2	—11.0	84	SE								0	0	Clear	Prof. G. Karsten.
Köslin			29.97	761.1	32.2	0.1		SE			2		4			0.154	3.9		Prof. E. Luther.
Leipsic, Observatory	29.42	747.3	29.85	758.3	41.5	5.3	92	S			3		10	SSW		0.008	0.2	Raining	H. Müller.
Memel, Naval School	30.21	767.2	30.25	768.4	17.6	— 8.0	91	SE			5		2cs						Prof. Bruhns.
Neufahrwasser	30.10	764.6	30.12	765.0	21.9	— 5.6	80	SSE			4		3			0	0		Reinbrech von Skalweit.
Posen	29.70	754.4	30.00	762.0	34.7	1.5	91	SE			6-7					0	0	Covered	A. Lothes.
Strassburg Obs., (in Alsace	29.52	749.8	30.08	764.1	44.8	7.1	76	WSW			4		10	WNW		0.051	1.3		Dr. Magener.
Stuttgart	28.98	736.1	29.94	760.5	42.8	6.0	78	W			5		9	W		0.031	0.8	Raining	Dr. Schur.
Treves, (Trier)	29.38	746.2	29.90	759.5	43.7	6.5	76	W			6		10			0.338	8.57	Foggy	Prof. Schoder.
Weissenburg, (Bavaria)	28.39	721.1	29.93	760.3	39.0	3.9	90	SW	4	2			10		W	0.079	2.0	Covered	Prof. Flesch.
Wustrow, Naval School	29.74	755.4	29.79	756.7	36.0	2.2	95	SE			2		10			0.091	2.29	Covered	Dr. Von Bebber.
German Naval Series.																			E. F. Schütz.

NOTE.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet: Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4. Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines, Königsberg, Posen and Wustrow in cubic zolls. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.77	756.1	30.17	766.2	49.6	9.8		NE			0.5							Clear	Dr. J. F. J. Schmidt.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.92	760.0	29.97	761.3	66.8	19.3	64	SW	18.0?	8.0?			0			0	0	Blue sky	
Deesa	29.47	748.5	29.96	761.0	67.7	19.8	29	Calm					0			0	0	Blue sky	
Bombay	29.86	758.3	29.89	759.3	73.1	22.8	56	NW	17.0	7.6			0			0	0	Blue sky	
Poona	27.85	707.4	29.85	758.2	78.8	26.0	46	NW					5			0	0	D. clouds	
Lahore	29.19	741.5	29.98	761.6	60.7	10.4	79	NW	1.8	0.8			0			0	0	Blue sky	
Belgaum	27.31	693.8	29.86	758.5	73.8	23.2	70	W	8.0	3.6			2	W		0	0	D. clouds	
Bangalore																			
Roorkee	28.96	735.7	29.91	759.8	54.8	12.7	74	NW	0.9	0.4			0			0	0		
Agra	29.33	744.9	29.92	759.9	60.3	15.7	55	W								0	0		
Trichinopoly																			
Nagpur	28.76	730.4	29.81	757.2	73.6	23.1	28	NW	3.4	1.5			0			0	0	Blue sky	
Madras																			
Lucknow	29.48	748.8	29.87	758.7	60.4	15.8	82	Calm	3.2	1.4			2		S	0.05	1.3	D. clouds	
Allahabad	29.50	749.3	29.82	757.5	65.3	18.5	78	Calm	1.3	0.6			5		W	0	0	D. clouds	
Patna	29.64	752.8	29.82	757.5	69.1	20.6	64	W	0.7	0.3			5	W	W	0.11	2.8	D. clouds	
Hazaribagh	27.77	705 3	29.84	757.9	62.0	16.7	87	WNW	5.9	2.6			10			0.28	7.1	Thunder-storm	
Cuttack	29.69	754.2	29.77	756.2	79.0	26.1	66	NNW	7.0	3.1			0			0	0	Blue sky	
Calcutta (Alipore)	29.76	755.9	29.78	756.5	74.7	23.7	81	WNW	3.0	1.3			10			0	0	Thunder-storm	
Goalpara	29.32	744.8	29.72	754.9	65.7	18.7	95	W	1.0	0.4			3	W	W	0.40	10.2	D. clouds	
Chittagong	29.74	755.4	29.83	757.8	69.8	21.0	90	SW	2.7	1.2						0	0	Blue sky	
Sibsagar	29.39	746.5	29.74	755.4	65.3	18.5	81	SW	4.0	1.8			10	W	W	0.13	3.3	Gloomy	
Rangoon																			
Jubbulpore	28.47	723.0	29.86	758.5	68.9	20.5	55	NW	2.3	1.0			0			0	0	D. clouds	

NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	22 08	560.8	30.05	763.2	24.6	— 4.1	95	WSW	.....	.....	1	.....	10	.....	.....	0	0	.....	Ab. Dom. Morgini.
Stelvio	22.06	560.2	30.05	763.2	21.9	— 5.6	.....	WSW	.....	.....	1	.....	10	.....	.....	0	0	.....	Signora Ernesta Manfredi.
Udine	29.66	753.3	30.09	764.2	40.5	4.7	68	Calm	0	0	.....	.....	10	.....	.....	0	0	.....	Prof. Giovanni Clodig.
Padua	29.92	760.0	30.04	762.9	36.1	2.3	70	NNW	2.5	1.1	.....	.....	10	W	.....	0.059	1.5	.....	Prof. Dott. Lorenzoni
Vicenza	29.89	759.3	30.10	764.4	39.6	4.2	58	N	0	0	.....	.....	6	.....	.....	0	0	.....	Conte Alm. Da Schio.
Verona	29.88	759.0	30.11	764.9	41.4	5.2	72	ENE	.....	.....	1	.....	10	.....	.....	0	0	.....	Dott. B. Bertoncelli.
Bergamo	28.77	730.7	30.14	765.6	33.8	1.0	85	NW	.....	.....	2	.....	10	.....	.....	0	0	.....	Prof. Trionfini Carlo.
Domodossola	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Giuseppe Calza.
Milan	29.60	751.9	30.19	766.7	34.9	1.6	.....	NNW	.....	.....	1	.....	10	.....	.....	0.130	3.3	.....	Ab. Gio. Capelli.
Pavia	29.77	756.1	30.13	765.3	34.2	1.2	92	N	.....	.....	2	.....	10	.....	.....	0.087	2.2	.....	Prof. Gio. Cantoni
Moncalieri	29.19	741.4	30.13	765.4	36.0	2.2	68	ENE	0.7	0.3	.....	.....	10	.....	.....	0	0	.....	Prof. P. F. Denza.
Mondovi	28.13	714.5	30.11	764.9	34.5	1.4	66	NE	.....	.....	2	.....	10	.....	.....	0	0	.....	Prof. D. C. Bruno.
Porto Maurizio	29.86	758.4	30.09	764.2	50.0	10.0	94	ENE	.....	.....	2	.....	10	.....	.....	0	0	.....	Prof. L. Vassallo.
Genoa	29.90	759.4	30.07	763.8	47.5	8.6	78	N	3.8	1.7	.....	.....	10	S	.....	0.118	3.0	.....	Prof. G. M. Garibaldi
Piacenza	29.87	758.7	30.14	765.6	33.3	0.7	92	NW	0	0	.....	.....	10	.....	.....	0.079	2.0	.....	Dott. G. Manzi.
Parma	29.83	757.6	30.16	766.1	34.0	1.1	91	WNW	.....	.....	4	.....	10	.....	.....	0.051	1.3	.....	Prof. P. Pigorini.
Florence	29.78	756.5	30.05	763.3	45.9	7.7	91	W	.....	.....	2	.....	10	.....	.....	0.016	0.4	.....	Cav. F. Meucci.
Leghorn	29.96	761.0	30.05	763.2	50.0	10.0	94	S	3.1	1.4	.....	.....	10	WSW	.....	0.327	8.3	.....	Prof. P. Monte.
Siena	28.83	732.3	30.08	763.9	46.8	8.2	89	S	0	0	.....	.....	10	SW	.....	0.012	0.3	.....	Prof. L. Toscani.
Urbino	28.52	724.5	30.14	765.5	43.7	6.5	75	SW	.....	.....	2	.....	10	.....	.....	0	0	.....	Prof. P. Serpieri.
Pesaro	30.05	763.3	30.10	764.6	41.5	5.3	63	N	13.0	5.8	.....	.....	10	.....	.....	0	0	.....	Prof. Luigi Guidi.
Ancona	29.98	761.6	30.10	764.4	47.8	8.8	79	SSW	.....	.....	4	.....	10	SW	.....	0	0	.....	Prof. F. DeBosis.
Grosseto	29.97	761.3	30.09	764.2	55.2	12.9	76	SE	.....	.....	2	.....	7	SE	.....	0	0	.....	Avv. P. Ponticelli.
Rome	29.93	760.2	30.11	764.8	52.7	11.5	74	Calm	0	0	.....	.....	9	.....	.....	0.004	0.1	.....	Prof. P. A. Secchi.
Naples, O.S.U	29.93	760.3	30.14?	765.5?	57.6	14.2	76	NNW	.....	.....	1	.....	10	SE	.....	0.008	0.2	.....	Prof. L. Palmieri.
Lecce	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. C. De Giorgi.
Cosenza	.....	.....	.....	.....	51.1	10.6	70	SE	0	0	.....	.....	9	.....	.....	0.020	0.5	.....	Prof. F. D. Conti.
Cagliari	29.85	758.1	30.04	763.1	56.3	13.5	86	SW	.....	.....	2	.....	10	.....	.....	0	0	.....	Prof. A. Pacinotti.
Riposto, (Sicily)	30.01	762.3	30.14	765.5	55.4	13.0	88	SE	.....	.....	2	.....	10	.....	.....	0	0	.....	Prof. F. Cafiero.
Palermo	29.82	757.3	30.08	763.9	57.0	13.9	74	ENE	1.8	0.8	.....	.....	6	.....	.....	0	0	.....	Prof. G. Cacciatore.
Caltanissetta	28.13	714.6	30.12?	765.1?	50.7	10.4	76	WNW	.....	.....	2	.....	5	S	.....	0	0	.....	Prof. A. Pagani.
Syracuse	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.59	751.5	30.14	765.6	52.9	11.6	78	NW	6.3	2.8	.....	.....	0	.....	.....	0	0	.....	Prof. F. Brioschi.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,543.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Siena, 348.5 m., or 1,143.3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.9 m., or 1,871.0 ft

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Tokei (Yeddo)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	The Observatory.
Tokei (Yeddo) University	29.97	761.1	30.07	763.7	42.5	5.8	87	NE	6.3	2.8	.....	.....	10n	.....	.....	0.16	4.1	Light rain	Prof. P. V. Veeder.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Señor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Aguascallientes	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	I. N. Marin, M. D.
Córdoba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	C. Peña, M. D.
Cuernavaca	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	L. Castillo, A. E.
Guadalajara	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. L. Perez.
Guanajuato	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. V. Fernandez.
Leon	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. M. Leal.
Mexico	23.10	586.6	30.21	767.3	45.1	7.3	54	Calm	0	0	.....	0	3cs	.....	.....	0	0	Clear	Central Observatory.
Orizaba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	N. N.
Orizaba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	I. Orozco, M. D.
Pabellon, (Aguascalts)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. V. de Leon, M. E.
Puebla	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. B. Gonzalez.
Toluca	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. C. Velazquez.
Tlacotalpam	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. F. R. Bayly.
San Luis Potosi	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	G. Barroeta, M. D.
Vera-Cruz	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. J. Rossell.
Zacatecas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. A. Bonilla, M. E.
Puebla, (Catholic Institute)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	P. Spina. [M. M. D. D.
Morelia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Tena, F. L. Páramo

Note.—The elevation of Aguascallientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,290 m., or 7,512.9 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosí, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	29.08	761.4	29.08	761.4	48.5	6.4	.....	WNW	.....	.....	6	.....	.....	.....	.....	0.154	3.9	.....	
Groningen	29.37	746.1	29.43	747.5	42.6	5.9	.....	WSW	.....	.....	2	.....	.....	.....	.....	0.370	9.4	.....	
Helder	29.64	752.9	29.64	752.9	42.8	6.0	.....	WNW	.....	.....	7	.....	.....	.....	.....	0.264	6.7	.....	
Hellevoetsluis	.....	.....	29.85	758.2	42.8	6.0	79	WNW	.....	.....	6	.....	.....	.....	.....	.....	.....	.....	
Utrecht	29.74	755.3	29.78	756.5	42.4	5.8	90	W	.....	.....	7	.....	10	.....	.....	0.650	16.5	Dull	H. v d Brink.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	29.72	754.8	29.77	756.2	34.9	1.6	100	Calm	0	0	.....	.....	8	.....	.....	0.102	2.6	.....	
Brönö	29.71	754.7	29.75	755.7	27.7	— 2.4	57	SSE	18	8	.....	.....	10	.....	.....	0.063	1.6	.....	
Christiania	29.77	756.2	29.93	760 1	31.1	— 0.5	98	NE	0	0	.....	.....	10	.....	.....	0.039	1.0	.....	
Tromsö	29.59	751.6	29.63	752.7	25.9	— 3.4	70	SE	18	8	.....	.....	1	.....	.....	0	0	.....	

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	29.78	756.5	29.98	761.4	63.0	17.2	90	W	13.7	6.1	.....	.....	5	.....	.....	0.709	18.0	.....	Dr. J. A. Sampaio.
Campo Major	29.35	745.6	30.40	772.1	51.8	11.0	97	SE	1.8	0.8	.....	.....	10	.....	.....	0.114	2.9	.....	Dr. A. M. R. dos Santos
Funchal, (Madeira)	30.32	770.1	30.39	771.9	66.7	19.3	52	S	3.1	1.4	.....	.....	5	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	30.00	762.1	30.37	771.3	56.5	13.6	97	E	4.9	2.2	.....	.....	10	.....	.....	0.402	10.2	.....	The Staff.
Ponta Delgada, (Azores)	29.99	761.7	30.06	763.5	65.5	18.6	90	SW	17.4	7.8	.....	.....	2	.....	.....	0.803	20.4	.....	

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 9 h. 6 m., p. m.

Naval Series. Vessels.	Sea or swell. Height scale 0–9	Sea or swell. Direction from—		
S. Bartholomew Dias	.....	.....	.....	R, A. T. Pinha, Com'd't.
S. S. India	.....	.....	.....	A. D. Pedroso, Com'd't.
S. S. Mindello	.....	.....	.....	J. F. R. R. Bastos, Com'd't.
S. S. Sado	.....	.....	.....	A. N. P. Sampaio, Com'd't.
S. S. Sá da Bandeira	.....	.....	.....	F. Texeira da Silva, Com'd't.
S. S. Tejo	.....	.....	.....	F. J. Ferreina,dos Amas, Com'

NOTE.—The originals, except for S. S. Tejo, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the cooperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.76	755.8	30.21	767.3	17.6	— 8.0	94	ESE	9	4	.....	.....	0	.....	.....	.....	.....	.....	Astronomical Obs.
Wilna	29.93	760.3	30.40	772.2	3.7	—15.7	94	Calm	0	0	.....	.....	4	.....	.....	.....	.....	Light clouds	Astronomical Obs.
Dorpat	30.12	765.1	30.39	771.9	10.0	—12.2	98	W	4	2	.....	.....	2	.....	.....	.....	.....	.....	Prof. Dr. Weihrauch.
St. Petersburg	30.31	769.9	30.33	770.3	15.3	— 9.3	93	Calm	0	0	.....	.....	8ks	.....	.....	.....	.....	.....	Central Physical Obs.
Knopio	29.95	760.8	30.30	769.7	14.0	—10.0	100	W	7	3	.....	.....	10	.....	.....	Blank	Blank	.....	Ch. Forsten.
Kieff	29.50	749.2	30.19	766.7	18.3	— 7.6	95	NNE	7	3	.....	.....	10n	.....	.....	.....	.....	Snowing	Physical Cabinet.
Nikolaiev	30.05	763.2	30.12	765.0	28.6	— 1 9	94	N	0	0	.....	.....	10n	.....	.....	.....	.....	.....	Kurdakof.
Kertch	29.78	756.5	29.80	757.0	37.4	3.0	90	ENE	9	4	.....	.....	10	.....	.....	.....	.....	.....	Lagorio.
Moscow	29.86	758.4	30.47	773.9	7.5	—13.6	88	S	4	2	.....	.....	7ks	.....	.....	.....	.....	.....	Meteorological Obs.
Lugan	29.98	761.5	30.21	767.2	12.6	—10.8	72	ESE	31	14	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Archangel	30.24	768.1	30.26	768.6	11.5	—11.4	100	S	9	4	.....	.....	10	.....	.....	.....	.....	.....	Ogorodnikof.
Tiflis	28.63	727.2	30.12	765.0	34.5	1.4	78	Calm	0	0	.....	.....	8ks	.....	.....	.....	.....	.....	Physical Observatory.
Astrakhan	30.52	775.3	30.44	773.2	13.1	—10.5	67	ENE	11	5	.....	.....	0	.....	.....	.....	.....	.....	Sebastianof.
Kasan	30.48	774.3	30.79	782.1	2.3	—16.5	85	SSE	2	1	.....	.....	6	.....	.....	.....	.....	.....	Physical Cabinet.
Orealburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Tschernischef.
Ekaterinburg	29.92	759.9	31.02	787.8	— 7.1	—21.7	83	Calm	0	0	.....	.....	1cs	.....	.....	.....	.....	Light clouds	Meteorological Obs.
Nukuss	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Kasaly	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Bobrof.
Tashkend	28.79	731.2	30.72	780.2	5.9	—14.5	91	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Michelson.
Barnaul	30.19	766.9	30.82	782.8	—23.3	—30.7	82	NE	0	0	.....	.....	0	.....	.....	.....	.....	.....	Meteorological Obs.
Yeniseisk	30.69	779.4	31.08	789.3	—20.9	—29.4	87	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Marks.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Usolzef.
Oorga	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Mossin.
Krotkowo*	30.27	768.9	30.80	782.3	2.3	—16.5	63	E	9	4	.....	.....	0	.....	.....	.....	.....	.....	Cand. Fatjanow.
Peking, (China)	30.17	766.4	30.32	770.0	21.7	— 5.7	60	Calm	0	0	.....	.....	9n	.....	.....	.....	.....	.....	Physical Observatory
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Vladivostock	30.28	769.2	30.32	770.2	3.9	—15.6	76	NW	18	8	.....	.....	0	.....	.....	.....	.....	.....	
Nikolaievsk, on the Amoor	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall; for Krotkowo, the barometer reduced to freezing but not to sea-level. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 502 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft. * N. 53° 47′, E. 48° 34′.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Rave, Director.
Bilbao, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Manuel de Naveran
Burgos, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Domingo Martin y Perez.
Madrid, Royal Observatory	28.10	713.6	30.39	771.9	48.9	9.4	86	SE	3.0	1.33	.....	0	1	.....	.....	0.028	0.7	Almost clear	The Staff.
Murcia, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Olayo Diaz, Director.
Santiago, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.91	759.6	29.97	761.3	71.2	21.8	59	NW	14.1	6.3	.....	7ck	6kn	WNW	NW	0	0	Cloudy	Benito Vines, S. J.
San Fernando, Naval Obs'y	30.32	770.2	30.43	772.8	60.1	15.6	70	W	4.9	2.2	.....	0	10	.....	W	0.004	0.1	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de PortoRico, W. I.	.....	.....	29.79	756.8	79.2	26.2	90	S	0	0	.....	2cs	0	Calm	.....	0	0	Clear	Leonardo de Tejeda, Chief of Engineers.

NOTE.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p m. instead of 8:19 a m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the cöoperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Low'r 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	30.08	764.0	30.12	765.0	24.8	— 4.0	.....	S	.....	.....	4	.....	10	.....	.....	0	0	.....	
Umea	30.05	763.3	30.10	764.6	32.4	0.2	81	SW	.....	.....	4	.....	10	.....	.....	0.024	0.6	.....	
Hernosand	30.09	764.2	30.14	765.5	28.4	— 2.0	80	SW	.....	.....	2	.....	10	.....	.....	0	0	.....	
Stockholm	29.91	759.6	30.08	764.1	32.7	0.4	82	SSE	.....	.....	2	.....	7	.....	.....	0	0	.....	
Wisby	30.00	762.1	30.07	763.6	30.2	— 1.0	85	SSE	.....	.....	6	.....	10	.....	.....	0	0	.....	
Sub-Series.																			
Upsala	30.02	762.6	30.10	764.5	26.1	— 3.3	99	SE	5.8	2.6	.....	.....	5	.....	SE	0.006	0.15	.....	Dr. Hildebrandsson.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.71	729.1	30.16	766.1	44.6	7.0	56	NNW	.....	.....	4	.....	9	.....	.....	0.335	8.5	Covered	The Observatory.
Zurich	28.42	721.9	30.11	764.8	39.6	4.2	92	W	.....	.....	2	.....	10	.....	.....	0.157	4.0	Raining	The Observatory.

Note.—For Geneva the corresponding departures from the normal values are: Barometer, +1.4 mm; Thermometer, +5.6 cent.; Relative Humidity, —25 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	30.23	767.9	36.7	2.6	58	N	8	3.5	.....	.....	8	.....	NW	0	0	.....	The Observatory.
Fao, (Persian Gulf)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salonica	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	B. Stefanides.
Valona	.....	.....	30.10	764.5	49.1	9.5	.....	NW	.....	.....	2	.....	0	.....	.....	0	0	Clear	A. Bertrand.
Varna	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Imperial Observatory.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.87	758.7	29.99	761.7	51.1	10.6	75	W	.....	.....	1	.....	7n	.....	W	0.58	14.7	Raining	Prof. C. V. A. Van Dyck

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	29.57	751.1	29.64	752.8	21.7	— 5.7	86	N	12	5.4	.....	.....	10n	.....	.....	.....	.....	.....	Hon. J. Ferguson.
Brockville, Ontario	29.51	749.5	29.84	757.9	16	— 8.9	.....	N	5	2.2	.....	0	2s	.....	N	0	0	Fair	W. R. Bigg.
*Chatham, N. B	29.51	749.5	29.58	751.3	23	— 5.0	81	N	16	7.2	.....	.....	10s	.....	N	0	0	Cloudy	G. A. Blair.
Charlottetown, P. E. Island.	29.39	746.5	29.43	747.5	30	— 1.1	97	N	16	7.2	.....	.....	10n	.....	Calm	.....	.....	Light snow	H. J. Cundall, C. E.
Cornwall, Ontario	29.56	750.8	29.76	755.9	16.2	— 8.8	91	N	.....	.....	3	.....	2s	.....	.....	0	0	Fair	James Smith, M. A.
Dalhousie, N. B	29.69	754.1	29.72	754.9	5	—15.0	100	W	.....	.....	1	.....	.....	.....	.....	0	0	Clear	H. A. Johnson.
Esquimault, B. C	30.20	767.1	30.24	768.1	34.1	1.2	100	NE	.....	.....	.....	.....	10	.....	.....	0	0	Cloudy	W. H. Bevis.
*Father Point, Quebec	.....	.....	29.76	755.9	17	— 8.3	85	NE	24	10.7	.....	2k	5s	NE	NE	0	0	Cloudy	J. McWilliams.
Fredericton, N. B	29.49	749.0	29.56	750.8	22.0	— 5.6	79	N	14	6.3	.....	.....	10s	.....	.....	0	0	Cloudy	Prof. Harrison.
*Fort Garry, Manitoba	29.22	742.2	30.12	765.0	10	—12.2	96	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	James Stewart.
Goderich, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	H. J. Strang, M. A.
Granton, Ontario	28.75	730.2	29.91	759.7	22.3	— 5.4	94	NE	.....	.....	3	.....	10n	.....	.....	0	0	Cloudy	James Grant.
*Halifax, N. S	29.09	738.9	29.23	742.4	29	— 1.7	98	N	15	6.7	.....	.....	10n	.....	.....	0.100	2.54	Sleeting	F. Allison, M. A.
Hamilton, Ontario	29.52	749.8	29.91	759.7	26.9	— 2.8	77	N	.....	.....	3	10cs	0	W	.....	0	0	Cloudy	Geo. Dickson, M. A
Heart's Content, N. F	29.69	754.1	29.71	754.6	31	— 0.6	100	E	.....	.....	1	.....	10	.....	.....	0	0	Overcast	E. Weedon.
*Kingston, Ontario	29.47	748.5	29.83	757.7	18	— 7.8	94	N	7	3.1	.....	8k	0	N	.....	0	0	Fair	S. Woods, M. A.
Little Glace Bay, N. S	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	C. H. Rigby.
*Montreal, Quebec	29.55	750.6	29.76	755.9	15	— 9.4	84	N	9	4.0	.....	2cs	0	.....	.....	0	0	Clear	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.23	742.4	29.98	761.5	14	—10.0	82	N	15	6.7	.....	2ck	2ks	NE	NE	0	0	Fair	Rev. R. Mosley.
Peterboro, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. F. Jeffers, B. A.
Port Dover, Ontario	29.13	739.9	29.85	758.2	27	— 2.8	88	N	10	4.5	.....	10k	0	N	.....	0	0	Cloudy	H. Morgan.
Port Hastings, N. S	29.04	737.6	29.09	738.9	32.6	0.3	.....	E	5	2.2	.....	.....	.....	.....	.....	0.60	15.2	Snowing	Peter Grant.
Port Stanley, Ontario	29.22	742.2	29.89	759.2	28	— 2.2	87	N	7	3.1	.....	.....	10n	.....	N	Inap.	Inap.	Cloudy	M. Payne.
*Quebec, Quebec	29.40	746.7	29.75	755.6	10	—12.2	79	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	Capt. Ashe, R. N.
*Rockliffe, Ontario	29.48	748.8	29.98	761.5	13	—10.6	81	NW	8	3.6	.....	.....	10s	.....	NW	Inap.	Inap	Light snow	W. H. McIntyre.
St. John, N. B	29.33	745.0	29.50	749.3	26	— 3.3	87	NW	12	5.4	.....	.....	10ks	.....	.....	0.070	1.78	Raining	G. Murdock, C. E.
*Saugeen, Ontario	29.22	742.2	29.96	761.0	21	— 6.1	97	N	4	1.8	.....	.....	10n	.....	.....	0.01	0.3	Cloudy	K. Stewart.
Stayner, Ontario	29.13	739.9	29.96	761.0	17	— 8.3	77	N	10	4.5	.....	.....	8n	.....	E	Inap.	Inap.	Cloudy	R. J. Cole.
Stratford, Ontario	28.56	725.4	29.92	760.0	21.1	— 6.1	86	NW	13	5.8	.....	.....	10s	.....	.....	0	0	Cloudy	C. J. MacGregor, M. A.
*Sydney, C. B	29.40	746.7	29.43	747.5	33	0.6	84	NE	12	5.4	.....	.....	10n	.....	NE	Inap.	Inap.	Cloudy	T. C. Hill.
*Toronto, Ontario	29.47	748.5	29.87	758.7	24	— 4.4	74	N	25	11.2	.....	.....	10ks	.....	NW	0	0	Cloudy	Magnetic Observatory
Windsor, N. S	29.23	742.4	29.33	745.0	31.0	— 0.6	90	NE	20	8.9	.....	10k	0	.....	.....	0	0	Fair	Prof. John E. Oram.
Woodstock, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Montgomery.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	30.0	— 1.1	.....	E	.....	.....	.....	.....	10n	.....	.....	Inap.	Inap.	Threatening	John Delany.

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	BAROMETER. Corrected for instrum'tal error and temperature. Inches.	BAROMETER. Corrected for instrum'tal error and temperature. Millimeters.	BAROMETER. Reduced to sea-level. Inches.	BAROMETER. Reduced to sea-level. Millimeters	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Upper. From—	CLOUDS. Direction. Lower. From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	WEATHER.	OBSERVER.
Albany, New York	29.38	746.2	29.62	752.3	19	— 7.2	84	NW	17	7.6	.....	0	2cs	.....	Calm	0	0	Fair	
Alpena, Michigan	29.36	745.7	30.04	763.0	20	— 6.7	85	N	8	3.6	.....	.....	10s	.....	N	0.01	0.3	Cloudy	
Atlantic City, New Jersey	29.46	748.3	29.48	748.8	32	0.0	79	NW	17	7.6	.....	0	0	.....	.....	1.32	33.5	Clear	
Augusta, Georgia	29.57	751.1	29.76	755.9	42	5.6	79	Calm	0	0	.....	0	Sm'e	.....	NW	0.01	0.3	Smoky	
Baltimore, Maryland	29.57	751.1	29.62	752.3	34	1.1	79	NW	12	5.4	.....	2k	Sm'e	NW	NW	0.95	24.1	Fair	
Barnegat, New Jersey	29.45	748.0	29.47	748.5	30	— 1.1	78	N	28	12.5	.....	2c	0	W	.....	1.37	34.8	Clear	
Bismarck, Dakota	28.39	721.1	30.24	768.1	9	—12.8	89	W	6	2.7	.....	Haze	2s	.....	N	0	0	Clear	
Boise City, Idaho	27.43	696.7	30.31	769.9	10	—12.2	79	NW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Boston, Massachusetts	29.24	742.7	29.40	746.7	24	— 4.4	74	NW	15	6.7	.....	0	1s	.....	NW	0.01	0.3	Clear	
Brackettville, Texas	29.20	741.7	30.30	769.6	29	— 1.7	78	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Breckenridge, Minnesota	29.13	739.9	30.21	767.3	14	—10.0	91	W	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Brownsville, Texas	30.32	770.1	30.30	771.9	41	5.0	74	N	3	1.3	.....	8c	0	Calm	.....	0	0	Cloudy	
Buffalo, New York	29.07	738.4	29.70	756.7	26	— 3.3	88	N	7	3.1	.....	.....	10n	.....	N	0.02	0.5	Light snow	
Burkes, Arizona	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Burlington, Vermont	29.43	747.5	29.70	754.4	17	— 8.3	83	N	14	6.3	.....	.....	10n	.....	N	Inap.	Inap.	Light snow	
Cairo, Illinois	29.73	755.1	30.14	765.5	36	2.2	80	NW	8	3.6	.....	5cs	0	Calm	.....	0.10	2.5	Fair	
Camp Grant, Arizona	25.19	639.8	29.99	761.7	31	— 0.6	69	E	5	2.2	.....	0	8s	.....	Calm	0	0	Cloudy	
Camp Verde, Arizona	26.84	681.7	30.33	770.4	33	0.6	89	NW	.....	.....	.....	0	0	.....	.....	0.03	0.8	Clear	
Campo, California	27.45	697.2	30.02	762.5	31	— 0.6	59	E	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Cape Hatteras, N. Carolina	29.46	748.3	29.47	748.5	43	6.1	83	N	28	12.5	.....	10k	0	N	.....	0.18	4.6	Cloudy	
Cape Henry, Virginia	29.48	748.8	29.50	749.3	38	3.3	81	NW	30	13.4	.....	.....	10s	.....	NW	0.83	21.1	Cloudy	
Cape Lookout, N. Carolina	29.50	749.3	29.52	749.8	42	5.6	73	NW	32	14.3	.....	.....	10s	.....	NW	0	0	Cloudy	
Cape May, New Jersey	29.46	748.3	29.49	749.0	34	1.1	79	NW	44	19.7	.....	0	0	.....	.....	1.85	47.0	Clear	
Charleston, South Carolina	29.66	753.4	29.72	754.9	45	7.2	68	NW	8	3.6	.....	1cs	0	Calm	.....	0.04	1.0	Clear	
Cheyenne, Wyoming	24.13	612.9	30.07	763.8	— 6	—21.1	61	NW	7	3.1	.....	0	0	.....	.....	0	0	Clear	
Chicago, Illinois	29.30	744.2	30.01	762.2	35	1.7	80	N	7	3.1	.....	.....	10s	.....	N	0.01	0.3	Threatening	
Cincinnati Ohio	29.28	743.7	29.94	760.5	35	1.7	70	N	8	3.6	.....	.....	10ks	.....	N	0.05	1.3	Cloudy	
Cleveland, Ohio	29.12	739.6	29.86	758.4	34	1.1	79	N	20	8.9	.....	.....	10ks	.....	N	0.02	0.5	Cloudy	
Concho, Texas	28.42	721.9	30.27	768.8	23	— 5.0	60	NW	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Corsicana, Texas	29.85	758.2	30.34	770.6	32	0.0	79	N	8	3.6	.....	.....	10s	.....	N	0	0	Cloudy	
Davenport, Iowa	29.50	749.3	30.17	766.3	31	— 0.6	79	NW	1	0.4	.....	Haze	0	Calm	.....	0	0	Clear	
Deadwood, Dakota	25.57	649.5	.....	.....	6	—14.4	76	S	3	1.3	.....	.....	10s	.....	Calm	0	0	Cloudy	
Denison, Texas	29.50	749.3	30.35	770.9	33	0.6	79	N	9	4.0	.....	.....	10s	.....	N	Inap.	Inap.	Cloudy	
Denver, Colorado	24.92	633.0	30.14	765.5	— 2	—18.9	84	S	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Detroit, Michigan	29.23	742.4	29.93	760.2	28	— 2.2	88	N	10	4.5	.....	.....	10s	.....	Calm	0	0	Cloudy	
Dodge City, Kansas	27.67	702.8	30.18	766.6	15	— 9.4	82	NW	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Dubuque, Iowa	29.40	746.7	30.14	765.5	28	— 2.2	77	NW	4	1.8	.....	Haze	5s	Calm	Calm	0	0	Fair	
Duluth, Minnesota	29.41	747.0	30.13	765.3	26	— 3.3	88	NW	8	3.6	.....	.....	10s	.....	NW	0	0	Cloudy	
Eagle Pass, Texas	29.59	751.6	30.40	772.1	31	— 0.6	69	NW	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Eastport, Maine	29.30	744.2	29.37	746.0	26	— 3.3	88	NE	28	12.5	.....	.....	10s	.....	NE	Inap.	Inap.	Cloudy	
Erie, Pennsylvania	29.08	738.6	29.81	757.2	32	0.0	69	N	12	5.4	.....	.....	10s	.....	N	Inap.	Inap.	Cloudy	
Escanaba, Michigan	29.42	747.3	30.11	764.8	25	— 3.9	81	N	12	5.4	.....	.....	10s	.....	N	Inap.	Inap.	Cloudy	
Florence, Arizona	28.46	722.9	30.06	763.5	45	7.2	60	SE	.....	.....	.....	5ck	0	SE	.....	0	0	Fair	
Fort Bayard, New Mexico	24.11	612.4	30.11	764.8	21	— 6.1	100	SE	10	4.5	.....	.....	9s	.....	SE	0	0	Cloudy	
Fort Craig, New Mexico	25.65	651.5	.....	.....	20	— 6.7	70	NW	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Fort Gibson, Indian Ter.	29.74	755.4	30.31	769.9	33	0.6	79	N	12	5.4	.....	.....	10s	.....	Calm	Inap.	Inap.	Cloudy	
Fort Griffin, Texas	29.09	738.9	30.48	774.2	26	— 3.3	63	NW	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	29.09	738.9	30.29	769.4	25	— 3.9	87	NW	8	3.6	.....	.....	10s	.....	N	0	0	Cloudy	
Galveston, Texas	30.24	768.1	30.29	769.4	36	2.2	80	NW	12	5.4	.....	0	2ks	.....	N	0	0	Fair	
Grand Haven, Michigan	29.34	745.2	30.02	762.5	30	— 1.1	89	NE	10	4.5	.....	.....	10s	.....	Calm	0	0	Cloudy	
Indianapolis, Indiana	29.17	740.9	29.97	761.2	37	2.8	71	N	2	0.9	.....	.....	10s	.....	N	0	0	Cloudy	
Indianola, Texas	30.33	770.4	30.35	770.9	36	2.2	80	N	28	12.5	.....	2c	0	W	.....	0	0	Clear	
Jacksboro, Texas	29.19	741.4	30.41	772.4	27	— 2.8	76	NW	12	5.4	.....	.....	10s	.....	.....	0	0	Cloudy	
Jacksonville, Florida	29.79	756.7	29.82	757.4	47	8.3	69	W	13	5.8	.....	.....	10s	.....	NW	0	0	Cloudy	
Keokuk, Iowa	29.52	749.8	30.17	766.3	32	0.0	79	NW	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Key West, Florida	29.92	760.0	29.96	761.0	66.0	18.9	63	NW	30	13.4	.....	2k	2ks	NW	NW	0	0	Fair	
Kittyhawk, North Carolina	29.46	748.3	29.49	749.0	39	3.9	81	N	38	17.0	.....	.....	10s	.....	N	0.31	7.9	Cloudy	
Knoxville, Tennessee	28.93	734.8	29.96	761.0	35	1.7	61	N	9	4.0	.....	.....	10ks	.....	N	0.07	1.8	Cloudy	
La Crosse, Wisconsin	29.37	746.0	30.14	765.5	29	— 1.7	67	NW	5	2.2	.....	0	0	.....	.....	0	0	Clear	
La Mesilla, New Mexico	26.21	665.7	30.36	771.1	21	— 6.1	85	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Laredo, Texas	.....	.....	.....	.....	34	1.1	79	NW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Leavenworth, Kansas	29.40	746.7	30.30	769.6	31	— 0.6	79	N	10	4.5	.....	.....	10s	.....	Calm	0.01	0.3	Cloudy	
Los Angeles, California	29.77	756.1	30.13	763.3	38	3.3	54	N	7	3.1	.....	0	0	.....	.....	0	0	Clear	
Louisville, Kentucky	29.43	747.5	30.00	762.0	35	1.7	79	NW	9	4.0	.....	.....	10s	.....	NW	0.01	0.3	Cloudy	
Lynchburg, Virginia	28.97	735.8	29.66	753.4	37	2.8	53	NW	6	2.7	.....	0	0	.....	.....	0.25	6.3	Clear	
Maricopa Wells, Arizona	.....	.....	.....	.....	32	0.0	50	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Marquette, Michigan	29.36	745.7	30.10	764.5	28	— 2.2	77	NW	4	1.8	.....	.....	10s	.....	Calm	0	0	Cloudy	
Mason, Texas	28.67	728.2	30.58	776.7	27	— 2.8	88	NW	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Memphis, Tennessee	29.83	757.7	30.16	766.1	39	3.9	82	NW	16	7.2	.....	.....	10s	.....	NW	0.10	2.5	Cloudy	
Milwaukee, Wisconsin	29.34	745.2	30.06	763.5	31	— 0.6	79	N	8	3.6	.....	.....	8s	.....	N	0	0	Cloudy	
Mobile, Alabama	30.03	762.7	30.08	764.0	44	6.7	75	NW	12	5.4	.....	.....	10s	.....	NW	0	0	Cloudy	
Montgomery, Alabama	29.72	754.9	29.96	761.0	44	6.7	79	NW	12	5.4	.....	.....	10s	.....	NW	Inap.	Inap	Cloudy	
Morgantown, West Virginia	28.73	729.7	29.80	756.9	35	1.7	69	W	9	4.0	.....	.....	10s	.....	NW	0	0	Cloudy	
Mt. Washington, N. H.	23.09	586.5	29.45	748.0	9	—12.8	78	NE	48	21.5	.....	0	5s	.....	NE	0	0	Fair	
Nashville, Tennessee	29.48	748.8	30.03	762.7	38	3.3	63	NW	8	3.6	.....	10k	0	N	.....	0.05	1.3	Cloudy	
New Haven, Connecticut	29.32	744.7	29.44	747.8	26	— 3.3	77	N	16	7.2	.....	0	0	.....	.....	Inap.	Inap.	Clear	
New London, Connecticut	29.34	745.2	29.39	746.5	28	— 2.2	77	N	8	3.6	.....	0	1s	.....	Calm	Inap.	Inap.	Clear	
New Orleans, Louisiana	30.08	764.0	30.14	765.5	43	6.1	59	NW	14	6.3	.....	.....	10ks	.....	NW	0	0	Cloudy	
Newport, Rhode Island	29.30	744.2	29.35	745.5	28	— 2.2	77	N	16	7.2	.....	0	2ks	.....	NE	0	0	Clear	
New York, New York	29.32	744.7	29.49	749.0	28	— 2.2	67	N	17	7.6	.....	Haze	0	.....	.....	0.12	3.0	Clear	
Norfolk, Virginia	29.50	749.3	29.56	750.8	35	1.7	80	N	24	10.7	.....	1k	2s	N	N	0.66	16.8	Fair	
North Platte, Nebraska	27.34	694.4	30.24	768.1	1	—17.2	85	NW	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Olympia, Washington Ter.	30.18	766.6	30.22	767.6	36	2.2	90	E	1	0.4	.....	.....	10s	.....	Calm	0	0	Cloudy	
Omaha, Nebraska	29.15	740.4	30.32	770.1	21	— 6.1	85	NW	4	1.8	.....	0	2s	.....	Calm	0	0	Clear	
Oswego, New York	29.44	747.8	29.77	756.1	25	— 3.9	87	N	24	10.7	.....	.....	10s	.....	.....	0	0	Cloudy	
Pembina, Dakota	29.24	742.7	30.14	765.5	14	—10.0	81	W	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Philadelphia, Pennsylvania	29.47	748.5	29.52	749.8	32	0.0	79	NW	28	12.5	.....	0	0	.....	.....	0.22	5.6	Clear	
Phœnix, Arizona	.....	.....	.....	.....	33	0.6	79	W	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Pike's Peak, Colorado	17.47	443.7	29.68	753.9	—12	—24.4	75	S	20	8.9	.....	0	0	.....	.....	0	0	Clear	
Pioche, Nevada	23.99	609.3	29.76	755.9	10	—12.2	89	W	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Pittsburg, Pennsylvania	28.94	735.1	29.76	755.9	33	0.6	79	NW	6	2.7	.....	.....	10s	.....	N	0	0	Cloudy	
Port Huron, Michigan	29.22	742.2	29.91	759.7	27	— 2.8	88	N	26	11.6	.....	.....	10s	.....	N	0.03	0.8	Threatening	
Portland, Maine	29.37	746.0	29.42	747.3	25	— 3.9	62	N	20	8.9	.....	1k	Haze	NE	.....	0	0	Clear	
Portland, Oregon	30.20	767.1	30.31	769.9	28	— 2.2	100	N	4	1.8	.....	0	2s	.....	Calm	0	0	Clear	
Prescott, Arizona	24.76	628.9	30.12	765.0	20	— 6.7	41	NE	.....	.....	.....	.....	10s	.....	Calm	0.20	5.1	Cloudy	
Punta Rassa, Florida	29.90	759.4	29.91	759.7	61	16.1	66	NW	36	16.1	.....	0	8ks	.....	W	Inap.	Inap.	Cloudy	
Red Bluff, California	29.80	756.9	30.18	766.6	34	1.1	89	N	4	1.8	.....	0	0	.....	.....	0	0	Clear	

UNITED STATES SERIES.—Continued.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Rochester, New York	29.14	740.1	29.77	756.1	27	— 2.8	77	N	8	3.6	.....	.....	10s	.....	N	0	0	Cloudy	
Roseburg, Oregon	29.64	752.8	30.24	768.1	30	— 1.1	94	SE	3	1.3	.....	.....	10s	.....	Calm	0	0	Cloudy	
Sacramento, California	30.06	763.5	30.15	765.8	38	3.3	80	E	3	1.3	.....	0	0	.....	.....	0	0	Clear	
St. Louis, Missouri	29.56	750.8	30.16	766.1	34	1.1	79	NW	14	6.3	.....	0	0	.....	.....	0.15	3.8	Clear	
St. Marks, Florida	29.90	759.4	29.92	760.0	45	7.2	67	NW	12	5.4	.....	.....	10s	.....	NW	0	0	Cloudy	
St. Paul, Minnesota	29.25	742.9	30.12	765.0	24	— 4.4	74	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salt Lake City, Utah	25.74	653.8	30.07	763.8	23	— 5.0	73	NE	8	3.6	.....	0	2s	.....	Calm	0	0	Fair	
San Antonio, Texas	29.66	753.4	30.29	769.4	33	0.6	70	NW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
San Diego, California	30.07	763.8	30.15	765.8	41	5.0	57	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Sandusky, Ohio	29.22	742.2	29.92	760.0	32	0.0	79	N	28	12.5	.....	.....	10ks	.....	N	0	0	Cloudy	
Sandy Hook, New Jersey	29.45	748.0	29.47	748.5	30	— 1.1	78	N	27	12.1	.....	2k	0	N	.....	0.16	4.1	Fair	
San Francisco, California	30.08	764.0	30.14	765.5	43	6.1	83	N	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Santa Fé, New Mexico	23.29	591.6	29.83	757.7	13	—10.6	62	NE	6	2.7	.....	0	5s	.....	Calm	0	0	Fair	
Savannah, Georgia	29.64	752.8	29.74	755.4	47	8.3	62	NW	8	3.6	.....	2ks	5s	NW	NW	Inap.	Inap.	Cloudy	
Shreveport, Louisiana	30.07	763.8	30.30	769.6	37	2.8	90	NW	7	3.1	.....	.....	10s	.....	NW	0	0	Cloudy	
Smithville, North Carolina	29.61	752.1	29.64	752.8	42	5.6	91	NW	10	4.5	.....	.....	10s	.....	NW	0.02	0.5	Cloudy	
Springfield, Massachusetts	29.28	743.7	29.42	747.3	27	— 2.8	55	N	9	4.0	.....	0	0	.....	.....	Inap.	Inap.	Clear	
Stockton, Texas	27.27	692.6	30.24	768.1	18	— 7.8	68	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Thatcher's Island, Mass	29.32	744.7	29.37	746.0	30	— 1.1	78	NE	40	17.9	.....	1k	0	NE	.....	0	0	Clear	
Toledo, Ohio	29.22	742.2	29.91	759.7	35	1.7	70	NW	12	5.4	.....	.....	10s	.....	NW	0	0	Cloudy	
Tucson, Arizona	.....	.....	.....	.....	27	— 2.8	53	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Tybee Island, Georgia	29.72	754.9	29.75	755.6	46	7.8	77	NW	17	7.6	.....	5k	0	NW	.....	0	0	Fair	
Umatilla, Oregon	30.19	766.8	.....	.....	26	— 3.3	88	Calm	0	0	.....	.....	10n	.....	Calm	Inap.	Inap.	Light snow	
Vicksburg, Mississippi	29.92	760.0	30.19	766.8	41	5.0	74	NW	12	5.4	.....	.....	10s	.....	NW	0	0	Cloudy	
Virginia City, Montana	24.37	619.0	29.85	758.2	4	—15.6	74	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Visalia, California	29.81	757.2	30.20	767.1	33	0.6	89	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Washington, D. C	29.52	749.8	29.63	752.6	33	0.6	84	NW	12	5.4	.....	1cs	0	W	.....	1.12	28.4	Clear	
Wickenburg, Arizona	.....	.....	.....	.....	25	— 3.9	38	N	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Wilmington, N. Carolina	29.54	750.3	29.62	752.3	41	5.0	73	N	14	6.5	.....	.....	10s	.....	N	0.19	4.8	Cloudy	
Winnemucca, Nevada	25.71	653.0	30.07	763.8	5	—15.0	75	NE	5	2.2	.....	0	0	.....	NE	0	0	Clear	
Wood's Holl, Mass	29.25	742.9	29.31	744.5	32	0.0	89	NE	20	8.9	.....	.....	10n	.....	NE	0.04	1.0	Light snow	
Yankton, Dakota	28.98	736.1	30.40	772.1	13	—10.6	81	W	7	3.1	.....	0	0	.....	.....	0	0	Clear	
Yuma, Arizona	30.11	764.8	30.28	769.1	33	0.6	69	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Sub-Series.																			
York Factory, B. A	29.51	749.5	29.56	750.8	14.0	—10.0	100	N	18	8.0	.....	2cs	6s	NW	NW	0.02	0.5	Snowing	J. Fortescue, W. Wood.
Havana, Cuba, W. I	29.95	760.7	29.97	761.2	71	21.7	67	NW	19.2	8.6	.....	4c	4n	NW	.....	0	0	Cloudy	Chas. Hasselbrink.
Kingston, Jamaica, W. I	30.04	763.0	30.05	763.3	76	24.4	81	N	9	4.0	.....	2c	2s	N	.....	0	0	.....	James Gall.
Navassa, W. I	29.86	758.4	29.94	760.5	77.5	25.3	.....	W	20	8.9	.....	.....	.....	.....	.....	0	0	Cloudy	F. M Everett.
Paramaribo, D. Guiana, S. A.	.....	.....	29.96	761.0	83	28.3	79	E	.....	.....	2	5k	6ks	E	.....	0.620	15.75	½ Cloudy	C. J. Hering.
Batavia, Dutch Guiana, S. A	30.00	762.1	30.01	762.3	84.6	29.2	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0	Clear	Dr. H. Groot.
Medellin, Colombia, S. A	25.21	640.3	.....	.....	68.0	20.0	83	Calm	.....	.....	0	1cs	2ks	.....	.....	0	0	Fair	Thomas Herran.
Honolulu, Oahu, H. I	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Daniel Smith.
Makawao, Maui, H. I	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo; for Batavia, the barometer reduced to freezing but not to sea-level. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Deadwood, (?); Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fe, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation

STATIONS AND VESSELS.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard Mare Island, Cal.	30.08	764.0	38	3.3	35	1.7	100	SE	0.6	0.3	.....	.....	0	.....	.....	0	0	.....	.....	Clear	
Navy Yard, Pensacola, Fla.	30.05	763.3	.....	.....	45	7.2	92	NNW	11	4.9	.....	.....	10	.....	NNW	0	0	.....	.....	D. clouds.....	
Navy Yard, Portsmouth, N.H	29.48	748.8	60	15.6	32	0.0	90	NNW	.....	.....	1	.....	.....	.....	.....	0	0	.....	.....	Clear	
Naval Hospital, Yokohama, Japan.....	29.96	761.0	51	10.6	42.5	5.8	96	NE	.....	.....	4	.....	10n	.....	NE	0.17	4.3	.....	.....	Light rain....	
Alliance, Smyrna, Turkey.....	30.20	767.1	49	9.4	45	7.2	52	ENE	.....	.....	1-2	.....	3	.....	E	.....	.....	.....	.....	Pleasant.....	
Ashuelot. Shanghai, China.....	30.02	762.5	54	12.2	42	5.6	100	NNW	.....	.....	2-3	.....	10	.....	.....	.....	.....	.....	.....	Raining.....	
Canonicus, New Orleans, La.....	30.06	763.5	39	3.9	44	6.7	68	NW	.....	.....	3	.....	8	.....	.....	.....	.....	.....	.....	Cloudy.....	
Colorado, New York, N. Y.....	29.46	748.3	29	—1.7	28	— 2.2	??	NNW	10	4.5	.....	.....	4	.....	NNW	0.12	3.0	.....	.....	Fair.....	
Despatch, Constantinople, Turkey.	30.36	771.1	76	24.4	37	2 8	71	N	.....	.....	3	.....	3	.....	SW	.....	.....	.....	.....	Clear.....	
Essex, S. 14° 42′, W. 2° 30′.....	29.99	761.7	74	23.3	76	24.4	86	S	.....	.....	1	.....	1	.....	.....	.....	.....	Smooth	S	D. clouds. ...	
Franklin, Norfolk, Va.....	29.64	752.8	48	8.9	48	8.9	70	NNW	10	4.5	.....	.....	1	.....	NNW	1.	25.	.....	.....	Clear.....	
Guard, Lisbon, Portugal.....	30.24	768.1	65	18.3	62	16.7	88	NW	.....	.....	2-3	.....	10	.....	NE	.....	.....	.....	.....	D. clouds....	
Lackawana, Mare Island, Cal.....	30.20	767.1	.....	.....	46	7.8	47	Calm	.....	.....	0	.....	0	.....	.....	.....	.....	.....	.....	Blue sky.....	
Marion, Villefranche, France.....	30.10	764.5	57	13.9	56	13.3	75	Calm	.....	.....	0	.....	10	.....	.....	.....	.....	Smooth	S	D. clouds....	
Michigan, Erie, Pa.....	29.35	745.5	70	21.1	32	0.0	59	N	.....	.....	3	.....	10	.....	N	.....	.....	.....	.....	Cloudy.....	
Monocacy, [Bangkok, Siam. E. 7° 19′, en route from Hong-Kong to	29.81	757.2	82	27.8	79	26.1	82	SSE	.....	.....	1	.....	1	.....	S&E	0	0	Mod'ate	SSE	Heavy dew..	
New Hampshire, Port Royal, S.C.....	29.83	757.7	.....	.....	46	7.8	77	NNW	18	8.0	.....	.....	8	.....	NW	.....	.....	.....	.....	D. clouds....	
Omaha, Valparaiso, Chili.....	29.98	761.5	66	18.9	64	17.8	78	W	1	0.4	.....	.....	3	.....	W	0	0	.....	.....	Pleasant.....	
Onward, Callao, Peru.....	29.98†	761.5†	76	24.4	74	23.3	90	SE	.....	.....	2	.....	5	.....	.....	.....	.....	Long	W	Hazy.....	
Ossipee, Norfolk, Va.....	29.57	751.1	39	3.9	39	3.9	73	NNW	.....	.....	6	.....	2	.....	NNW	.....	.....	.....	.....	Squally.....	
Palos, Shanghai, China.....	30.00	762.0	51	10.6	42	5.6	100	NNE	.....	.....	3-5	.....	10	.....	.....	.....	.....	.....	.....	Rainy.....	
Plymouth. N. 17° 02,′ W. 83° 30′.....	30.07	763.8	80	26.7	78	25.6	100	N	.....	.....	6	.....	10	.....	.....	.....	.....	Mod'ate	N	Pleasant.....	
Powhatan, Norfolk, Va.....	.....	.....	.....	.....	47	8.3	100	NNW	42.0	18.8	.....	.....	3	.....	S	0.54	13.7	.....	.....	.....	
Ranger, Shanghai, China.....	30.10	764.5	.....	.....	47	8.3	85	NW	.....	.....	3	.....	10	.....	Calm	.....	.....	.....	.....	Rainy.....	
Rio Bravo, Brownsville, Texas.....	30.22	767.6	.....	.....	42	5.6	74	NNW	.....	.....	2	.....	7	.....	NNW	.....	.....	.....	.....	D. clouds.....	
Santee, Annapolis, Md.....	29.66	753.4	60	15.6	35	1.7	80	NW	.....	.....	5	.....	1	.....	N&W	1.30	33.0	.....	.....	Clear.....	
Saratoga, Norfolk, Va.....	.....	.....	.....	.....	37	2.8	100	N	.....	.....	6	.....	4	.....	NE	Heavy	Heavy	.....	.....	Clear.	
St. Louis, League Island, Pa	29.43	747.5	32	0.0	31	— 0.6	89	NW	15	6.7	.....	.....	8	.....	NW	0.8	20.	.....	.....	Fair.....	
Swatara, Norfolk, Va.....	29 60	751.8	.....	.....	39	3.9	82	NNW	.....	.....	6	.....	1	.....	N&W	.....	.....	.....	.....	D. clouds.....	
Tennessee, Shanghai, China.....	30.02	762.5	72	22.2	45	7.2	92	NW	.....	.....	3-4	.....	10	.....	.....	0.30	7.6	.....	.....	Misty.....	
Trenton, Grecian Archipelago.....	30.21	767.3	.....	.....	50	10.0	64	ENE	20	8.9	.....	.....	9	.....	N&E	0.2	5.	Smooth	.....	D. clouds.....	
Vandalia, Valetta, Malta.....	30.19	766.8	66	18.9	62	16.7	77	WNW	.....	.....	2	.....	8	.....	WNW	.....	.....	.....	.....	D clouds.....	
Wabash, Boston, Mass.....	29.39	746.5	33	0.6	24	— 4.4	.....	NW	13	5.8	.....	.....	2	.....	Calm	0	0	.....	.....	D. clouds.....	
Wyoming, Washington, D. C.....	30.31	769.9	.....	.....	35	1.7	.....	NW	.....	.....	3	.....	10	.....	.....	.....	.....	.....	.....	Blue sky.....	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. The position given for the Plymouth is that at noon, local time, instead of that at 7:35 a. m., Washington time.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.	Character.	Direction from—		
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—				
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			Capt. Berry.
S. S. China																			Capt. Cobb.
S. S. City of New York																			Capt. Seabury.
S. S. City of Panama, N. 44° 5′, W. 124° 45′			30.15*	765.8*	48	8.9		NNE			3		0			Light	W	Fine	Lt. Z. L. Tanner, U.S.N.
S. S. City of Peking, N. 31° 58′, E. 133° 12′			29.93*	760.2*	69	20.6	95	WSW			2		10		WSW	Small	WSW	Raining	Capt. Dearborn.
S. S. City of Sydney																			Capt. Maury.
S. S. City of Tokio, N. 34° 25′, E. 141° 22′			29.86	758.4	62	16.7		NE			6		10			Mod'ate	NNE	Overcast	Capt. Searle.
S. S. Colima																			Capt. Whitebury.
S. S. CostaRica																			Capt. Morse.
S. S. Dakota																			Capt. Cavarly.
S. S. Georgia																			Capt. Connolly.
S. S. Grenada																			Capt. Austin.
S. S. Wilmington																			

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. *Aneroid.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

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S. S. Belgic, N. 43° 44′, W. 169° 42′			29.37*	746.0*				WSW			6		Heavy		SW	Heavy	SW	Drizzling	Capt. John Metcalf.
S. S. Gaelic, Hong-Kong, China			30.07†	763.8†	60	15.6	??	NE			4		k					Overcast	Capt. W. H. Kidley
S. S. Oceanic, N. 30° 13′, E. 178° 33′			29.97	761.2	64	17.8	83	NW			2		2		NW	Confused.	WNW	D. clouds	Capt. H. Parsell.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. * Corrected for temperature and elevation; instrumental error not known. †Aneroid.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

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S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig																			Capt. Undütsch.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio																			Capt G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds.

Lehman

UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Lo'wr	Upper.	Lower.	Character	Direction From—		
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second	0—10.	0—10.	0—10.	From—	From—				
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, Liverpool			30.27*	768.8*	46	7.8	??	NW			5		9		NNW	Heavy	N	D. clouds	Captain Sargent.
S. S. Ohio, N. 42° 51′, W. 61° 17′			28.83	732.3	45.5	7.5	92	NE			6		10		NE	Rough	NE	Foggy	Captain Morrison.
S. S. Pennsylvania																			Captain Harris.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. * Aneroid

RED STAR LINE MARINE SERIES.

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S. S. Nederland																			Capt. Randle.
S. S. Switzerland																			Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

S. S. Hibernian																			
S. S. Scandinavian, N. 55° 6′, W. 18° 0′			29.92	760.0	46	7.8		WSW			6		7		WSW	Long	SSW	Showery	Capt. W. Richardson.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, Falmouth, Mass			29.25	742.9	33	0.6	100	N	20	8.9			10n		N			Light snow	Capt. James Jorgensen.

NOTE.—The originals for the schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer. U. S. A.